International Carbon Action Partnership

EMISSIONS TRADING WORLDWIDE

STATUS REPORT 2026

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FOREWORD

STEADY COURSE IN TURBULENT WATERS: THE RESILIENCE AND GROWTH OF EMISSIONS TRADING IN A FRACTURED WORLD

Climate change has now become a constant factor shaping daily life, economic planning, and political debate. In 2025, the world confronted another year of escalating climate impacts, from record-breaking heatwaves and water scarcity to increasingly frequent disruptions to food and energy systems. At the same time, global geopolitics have entered a more turbulent phase. Rising political and trade tensions, the resulting economic uncertainty, and the rapid unravelling of post-Second-World-War equilibria have shifted public and political priorities in many countries. In this context, climate policy, and carbon pricing in particular, has in some countries struggled to command the attention it once did, reflecting growing tensions between short-term political priorities and the urgent need for sustained climate action.

Yet despite these headwinds, global momentum behind emissions trading systems (ETSs) has not slowed. If anything, ETSs have proven to be particularly well suited to this more complex environment. They provide a reliable pathway for achieving emission reduction objectives that remain fundamental to long-term stability and prosperity. They offer flexibility and economic efficiency in meeting targets, characteristics that matter even more amid constrained fiscal space and shifting political landscapes. ETSs can be designed to safeguard competitiveness, while also generating revenues that help governments facing budget pressures and supporting households and industries against adverse impacts.

This year's Status Report reflects a landscape in which ETSs are both expanding and maturing. A total of 41 systems are now in force worldwide and another 16 are under development or consideration, with the main growth now coming from middle-income economies. Existing systems are tightening caps, refining allocation methods, and extending coverage to new sectors such as maritime transport, buildings, transport fuels, and waste. Recent developments, including China's steps toward an absolute cap and broader scope in its national ETS, the ambitious next phase of Korea's K-ETS, major expansions of the UK ETS, and ongoing reforms in the EU, California, and other long-running systems, illustrate how ETS policy continues to evolve even in more uncertain times.

Emissions trading remains a resilient and central component of climate policy across economies.

Meaningful progress is also emerging in jurisdictions new to emissions trading. Brazil is advancing the implementation of its national ETS with new institutional arrangements. India and Vietnam are operationalizing their ETSs with sector-specific targets. Türkiye has adopted a landmark climate law that prepares the ground for a national ETS. These developments underscore how emissions trading is becoming central not only to climate strategies in high-income countries but also to broader development pathways across diverse economies.

As emissions trading increasingly shapes economic and climate policy, governments face a new set of questions that are central to the long-term durability of their policies. With competing social and economic priorities, policymakers must design effective markets while also communicating their purpose clearly and demonstrating tangible benefits for households, workers, and communities. At the same time, as jurisdictions move closer to net-zero, they must address questions about how to deliver stronger emission reductions while maintaining competitiveness and investment certainty, managing distributional impacts, and steering the pace of structural transformation.

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Since 2007, the International Carbon Action Partnership (ICAP) has provided a trusted forum where governments can learn from each other as they design, implement, and refine their ETSs. Through technical dialogue, capacity-building, and knowledge sharing work, ICAP supports jurisdictions to strengthen their climate policies. As carbon markets expand into more regions and sectors, this space for trusted peer exchange and collaborative problem-solving is more important than ever.

In 2025, ICAP continued to strengthen its role as a core platform for international cooperation on emissions trading. Poland joined ICAP as its 35th member, adding new perspectives from a country that is reshaping its energy and industrial landscape. The political appetite for stronger coordination among compliance carbon markets was further reaffirmed at COP30 in Belém, where governments endorsed the Declaration on the Open Coalition on Compliance Carbon Markets. These developments highlight a shared understanding: as more governments rely on ETSs, success will increasingly depend on sustained dialogue, mutual learning, and cross-jurisdictional coordination.

The Emissions Trading Worldwide: ICAP Status Report 2026 captures this moment of consolidation and acceleration for emissions trading. It provides an overview of global ETS trends, key infographics, and detailed factsheets on systems in force, under development and under consideration. Above all, it illustrates how emissions trading remains a resilient and central component of climate policy across both high-income and emerging economies. By continuing to share knowledge, coordinate approaches, and learn from experience, ICAP and its members and partners aim to support robust, ambitious, and well-governed carbon pricing policies that contribute meaningfully to the climate agenda.

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01 EXECUTIVE SUMMARY

EMISSIONS TRADING IN NUMBERS

41
Emissions Trading Systems are in force

Covering

14 $GtCO_2e$

or over

26%
of global GHG emissions

USD **79** Billion raised in 2025

Totaling over
USD **454** Billion since 2007

7 ETSs are currently under development

And **9** more are under consideration

Over **1/2** of the global population lives where an ETS is in force

Jurisdictions making up
63%
of global GDP are using emissions trading

TRENDS AND OUTLOOK

A SUMMARY OF GLOBAL ETS DEVELOPMENTS, TRENDS, AND FUTURE PROSPECTS

Climate change is no longer a distant threat, but a constant factor in daily life, shaping economic and political decisions. Yet the current political climate, both domestically and geopolitically, appears to be shifting priorities away from climate action. Despite this headwind, the momentum for emissions trading systems (ETS) has not slowed — quite the opposite. Three new national-level systems are coming online this year with more in the pipeline, existing systems are maturing and evolving, and price development has on average shown a return to relative stability. This is in part a paradox: the same pressures on energy security and affordability that are complicating the political case for climate action also reinforce the appeal of ETS as a flexible, cost-effective tool for meeting long-term objectives. It is too early to say how this tension will play out - but policymakers have so far held course, and design trends are actively supporting them in doing so, through robust legislative processes, innovative approaches tailored to domestic contexts, integrated policy frameworks, and proactive efforts to strengthen political acceptance. Looking ahead, significant challenges remain and ETS policymakers will need to navigate troubled waters, but a growing momentum in international cooperation and a steadily deepening community of practice are helping to build shared experience and global coherence.

ETS CONSOLIDATES ITS ROLE AS A CORNERSTONE OF CLIMATE POLICY WORLDWIDE

Emissions trading has moved decisively from niche to mainstream, steadily becoming a primary policy tool for governments committed to climate change mitigation. The uptake of ETS continues to accelerate - three new national-level systems in Japan, India, and Vietnam are coming online this year, with several more nearing operational readiness. Global coverage is now substantial: 41 systems are in force, covering 26% of global GHG emissions. The jurisdictions operating these systems together represent 63% of global GDP and more than half the world's population. With an ETS now operating either at the national or subnational level in 14 of the G20 nations and another two currently developing their systems, emissions

trading is at the center of decarbonization strategies in key global economies. A further 16 governments are at various stages of considering or developing an ETS, including Türkiye, which is preparing to launch its pilot system this year. In Latin America, Brazil, Chile, and Colombia have all passed ETS legislation and are preparing for implementation, while Bolivia has begun work on a legal framework. Key legislative hurdles have also been crossed in Thailand and the Philippines.

Large and middle-sized emerging economies, mainly in Asia and Latin America, are driving the growth of new systems.

This expansion coincides with a pivotal moment in international climate governance: 2025 was the year in which all parties to the Paris Agreement were required to submit new Nationally Determined Contributions (NDC 3.0), setting national climate targets through 2035. The alignment between these two processes is increasingly explicit. Several countries - including Brazil, Türkiye, Mexico, and several Asian economies - have named their ETS or carbon pricing mechanisms as central instruments for NDC delivery, embedding carbon pricing at the heart of national climate strategies. Emissions trading is increasingly a cornerstone not just of domestic policy, but of each country's international commitment.

Large and middle-sized emerging economies, mainly in Asia and Latin America, are driving the growth of new systems. Many are moving beyond conventional cap-and-trade models to intensity-based approaches, often with innovative hybrid designs that incorporate other carbon pricing elements. New systems are also emerging across the industrialized economies of Europe, North America, and Asia. Japan's new ETS consolidates the approach of the long-established Tokyo and Saitama systems at the national level, while building on a well-established crediting framework. Momentum continues in North America at the state and provincial level - Oregon and Colorado introduced new systems last year, with New York preparing to follow. The EU's ETS 2 is also on the horizon, though the start of compliance was postponed by one year to allow more time for preparation.

Alongside the growth of new systems, established systems are also undergoing significant evolution and reforms - strengthening ambition, refining design, and expanding coverage. China has announced plans to transition its national ETS from an intensity-based approach to an absolute cap, while also expanding scope and introducing auctioning. Korea's ETS has entered a new phase with greater use of auctioning, a new market stability reserve, and a target-aligned cap trajectory. California has passed legislation to extend its system to 2045. The EU has announced a revision of the EU ETS Directive, covering updates to the market stability reserve, the long-term cap trajectory, the role of carbon dioxide removals, and the phase-out of free allocation in sectors covered by CBAM, among other things. The CBAM has itself entered the compliance phase - marking a new era of carbon pricing for international trade.

Beyond changes to system design and market rules, a parallel and equally significant trend is the expansion of existing systems to new sectors. Several systems that began by covering only the power sector - the largest and most straightforward source of emissions - are now reaching into harder-to-abate industrial and economic sectors. China's national ETS is the most prominent example: launched in 2021 covering only the power sector, it has since formally expanded to include steel, cement, and aluminum, bringing well over 1,000 additional companies under the cap and substantially deepening the system's reach across the economy. Indonesia's ETS has followed a comparable trajectory, beginning with the power sector and progressively widening its scope. These developments reflect a broader maturation of the ETS model: systems that first establish themselves in the power sector, building up MRV infrastructure and market experience, before tackling the more politically and technically complex task of covering industrial emitters.

The same logic is playing out in well-established systems, albeit in different forms. The UK ETS is in the process of expanding to domestic maritime shipping from 2026, and to waste incineration from 2028, with monitoring and reporting obligations for these sectors already under way. The EU, meanwhile, has extended its flagship ETS to maritime shipping, while simultaneously preparing the launch of an entirely new system, the EU ETS 2, specifically designed to bring the buildings and road transport sectors under a carbon price for the first time. Set to become operational in 2028, the EU ETS 2 will cover the distribution of fuels for road transport and buildings across all EU Member States. While technically a new system rather than an expansion of an existing one, EU ETS 2 embodies the same underlying principle: that a comprehensive and effective carbon price must reach as many sectors as possible to drive decarbonization

across the whole economy. Taken together, these developments mark a turning point in the ambition of emissions trading, from targeted instruments to economy-wide policy frameworks.

ETS prices showed a return to relative stability in 2025, with generally stable or moderately growing prices across most markets. Reflecting this, 2025 marks another record year for ETS revenue collection. Following a slight drop in 2024, revenues rebounded to nearly USD 80 billion in 2025, surpassing the previous record of USD 75 billion set in 2023. The EU ETS 1 and UK ETS experienced fluctuating prices with steady growth overall, as did most North American systems. In contrast, prices in California, New Zealand, and China's national ETS saw modest price declines over the year, while Korea's ETS remained relatively stable.

ETS DESIGN TRENDS FOSTER DURABILITY AMID GLOBAL UNCERTAINTY

The world is undeniably living through interesting times - populism, energy and trade wars, and affordability pressures are reshaping the political landscape for climate policy. The United States' withdrawal from the Paris Agreement and the federal rollback of climate regulations under the current administration represent the most prominent example of this trend, demonstrating how quickly the political underpinnings of climate policy can shift. Yet the resilience of sub-national systems in the US shows that an ETS, once embedded in law, can prove more durable than the political cycles that shape national priorities.

Climate policymakers are no strangers to political headwinds. Hard-won lessons are now shaping ETS design, embedding robust legislative processes to create more durable policy. One example is the ongoing integration of emissions trading within overarching climate laws and net-zero targets, anchoring it in long-term economic strategies. A second example is meaningful stakeholder consultation from the outset, fostering greater buy-in and resulting in more broadly supported policy. A third example is the early integration of communication strategies into system design, making information accessible and trade-offs transparent.

An ETS is inherently flexible, and this flexibility extends to the design process itself, enabling governments to adapt the policy to their own circumstances and development pathways, thereby making it more appealing. Policymakers are increasingly tailoring their ETS to domestic objectives - a strength of the domestic-first approach that mirrors the bottom-up nature of the Paris Agreement. One trend is the development of

Hard-won lessons are now shaping ETS design, embedding robust legislative processes to create more durable policy.

integrated policy frameworks, with market stability mechanisms, carbon taxes, offset crediting mechanisms, and CBAMs being deployed alongside ETS and sometimes built directly into the system design. Equally significant is the expansion of intensity-based systems in emerging economies with rapidly growing industrial sectors. Currently, about half of systems in force worldwide are intensity-based, representing around 75% of ETS-covered emissions globally - a figure driven largely by the sheer scale of China's national ETS, the world's largest carbon market and itself intensity-based. Yet these figures mask an important countertrend: established systems, including China's national ETS, are increasingly looking to transition to absolute caps as they mature.

With rising political discontent and affordability pressures, governments are taking proactive steps to enhance political acceptance through both system design and communication. Political acceptance becomes especially critical when ETS scope expands beyond industry to sectors where the carbon price directly impacts people's livelihoods. A key trend is the development of mechanisms for transparent revenue use - decided in advance and communicated clearly - with revenues increasingly directed towards climate initiatives and support for those disproportionately impacted by the carbon price, applying principles of equity and fairness. Communicating these positive effects is essential. Some jurisdictions are rebranding their cap-and-trade systems as "Cap-and-Invest" to make this connection explicit, a trend especially evident in Washington and California, and under discussion elsewhere. The importance of these efforts is clear in the European context: the EU ETS 2 for buildings and transport would simply not be politically feasible without the accompanying Social Climate Fund.

COMPETITIVENESS AND FLEXIBILITY: FITTING DOMESTIC SYSTEMS INTO A GLOBAL CONTEXT

The growing centrality of a domestic ETS as a climate policy instrument raises both old and new challenges for policymakers. Two key discussions are currently underway, relevant to both emerging and established systems alike, though with different emphases: how to maintain competitiveness for domestic industry as carbon costs rise, and how to harness domestic and international crediting frameworks as tools

for compliance flexibility and cost containment, ensuring that ambition remains politically and economically sustainable.

Free allocation remains the primary tool for shielding industry from carbon leakage. Yet as established systems mature and look ahead to net-zero emissions, current practices are being called into question. Free allowances will inevitably become scarcer over time, while abatement becomes more difficult and costly. The trend is towards better targeting: directing free allocation only at emissions-intensive and trade-exposed (EITE) industries that really need assistance. At the same time, as decarbonization becomes more challenging, governments are increasingly grappling with the role that removals and offsets could play in keeping compliance costs manageable for hard-to-abate industries, without compromising environmental integrity.

Alternatives to free allocation are beginning to surface. The most groundbreaking approach is the EU's CBAM, which has attracted significant international attention since its announcement. By pricing the carbon content of imports, the CBAM addresses leakage concerns more directly at the border - rather than within the system of allocation - and has sparked considerable interest globally. The UK plans to follow suit with a similar mechanism, while comparable policies are being formally considered in a growing number of jurisdictions. For many countries, the EU's CBAM has also served as a catalyst for broader carbon pricing ambitions, as trading partners weigh the implications for their own industries and policy frameworks.

The use of offset credits and the establishment of crediting mechanisms are proliferating in ETS design, particularly as emerging systems look to integrate crediting into their regulatory frameworks from the outset. Governments face important choices about how to structure these mechanisms alongside their ETS - decisions that involve careful trade-offs between competing policy objectives. Among the questions being navigated: whether to build domestic offset systems first before looking outward, or to engage with international markets early; whether credits should serve domestic compliance needs or be available for international sale; and whether the credits that deliver the greatest domestic co-benefits are the same ones that international markets value. These choices are also shaped by developments in the voluntary carbon market, which - though distinct from compliance ETS - is becoming increasingly interconnected with domestic crediting frameworks as standards converge and as Article 6 mechanisms begin to create bridges between the two. The choices governments make now will shape both the environmental integrity of their systems and their place in an increasingly interconnected global carbon market.

INTERNATIONAL COOPERATION RISES TO THE MOMENT

Momentum is building in international cooperation on ETS, most notably with the launch of the Open Coalition for Compliance Carbon Markets alongside several other existing platforms for dialogue. These platforms are particularly valuable at a moment when the domestic-first approach that has so far characterized ETS development is ready to be complemented by greater global coherence. They help address shared questions: how to compare ambition and robustness across different systems, how to ensure that international trade does not undermine domestic climate policy, and how to bring coherence to an increasingly fragmented market landscape. Such conversations are becoming essential as jurisdictions seek to tailor their systems to local contexts while also contributing to global coherence.

These efforts are further animated by progress at the international level. The finalization of rules for the Article 6 mechanisms under the Paris Agreement, providing a framework for internationally transferred mitigation outcomes and a nascent global carbon crediting mechanism, opens new possibilities for ETS jurisdictions to engage with international carbon markets. While questions of environmental integrity and governance warrant careful consideration, these developments add a significant new dimension to the landscape in which domestic ETS operate.

Behind these technical discussions lies something more fundamental: a growing community of practice built on shared experience. As ETSs expand and evolve, a steadily growing body of evidence-based good practice is forming, drawing on lessons from around the world. This creates real opportunities for policymakers in emerging systems to benefit from collective experience, avoiding common pitfalls and adopting more robust policy designs from the outset. In an era of political uncertainty, this network of practitioners - learning from each other and building on shared successes - may be one of the most important factors in ensuring the continued growth and resilience of emissions trading worldwide.

Behind these technical discussions lies something more fundamental: a growing community of practice built on shared experience.

A YEAR OF ETS DEVELOPMENTS

A BRIEF OVERVIEW OF THE KEY UPDATES FROM EACH JURISDICTION

EUROPE AND CENTRAL ASIA

Austria: Austria's national ETS launched in October 2022, covering fossil fuels not included in the EU ETS 1. In January 2025, the fixed price rose as planned. Revised legislation adopted in 2024 aligned the system with EU ETS 2 methodology, with entities now reporting under both frameworks. Following the EU's decision to postpone ETS 2 by one year, Austria's system will continue through 2027. The Regional Climate Bonus, which redistributed revenues to consumers, was discontinued as part of fiscal consolidation measures.

European Union: The EU ETS 1 remains the largest system in force in terms of trading value and volume. It currently accounts for around 35% of the bloc's total emissions, which is a decline compared to the previous year due to significant reductions in power sector emissions in 2023. In 2025, shipping companies faced their first deadline for surrendering allowances for the share of their 2024 emissions. In the aviation sector, free allowances were reduced to 50% in 2025 and are fully phased out as of 2026. The EU's Carbon Border Adjustment Mechanism (CBAM) entered the definitive stage in January 2026, with the first deadline for the surrender of CBAM certificates set for September 2027. Following the May 2025 announcement, the EU Council granted the EU Commission a negotiating mandate to start formal talks with the UK on ETS linking arrangements. Following the provisional agreement between the EU Council and the EU Parliament in December 2025, the start of a new, separate ETS for buildings, road transport and additional sectors (ETS 2) is postponed by one year, until 2028.

Germany: Germany launched its national ETS in 2021, covering heating and transport fuels not included in the EU ETS 1. In February 2025, parliament adopted legislation to transition to the EU ETS 2, though the supranational scheme was subsequently postponed by one year to 2028. The government will opt in additional sectors, but has excluded combustion emissions from agriculture. Waste incineration also remains under the national system, pending further EU-wide analysis. A second evaluation report was published in January 2025, and auction procedures for the upcoming price corridor phase were finalized.

Kazakhstan: Kazakhstan's ETS entered its 14th year of operation. In October 2025, a draft national allocation plan for the period from 2026 to 2030 was published. It proposes annual cap reductions of between 10.4% and 23% compared with the 2025 level. Benchmarking remains the main method of allowance allocation since 2021, while the introduction of auctions is under development.

Montenegro: Montenegro's national ETS was launched in 2020 and covers large installations in the power and industrial sectors. The government finalized a draft climate law in September 2025, which was adopted in December and will enter into force in May 2026. This revised legislation aligns various design elements of the national system with EU regulations, including provisions on MRV, allocation, and revenue use. Following the passage of the revised climate law, intensive work has begun on drafting a revised ETS regulation, with adoption anticipated by May 2026.

Switzerland: The Swiss ETS, established in 2008, has been linked with the EU ETS 1 since 2020. In 2025, revised legislation entered into force, aligning the system with EU reforms through stricter cap reduction factors and enabling carbon capture to count towards compliance. Free allocation for aviation will be phased out, while a new incentive mechanism will offset costs for sustainable aviation fuel. An external evaluation found that the system had little impact on emission reductions.

Türkiye: Türkiye is preparing to launch its national ETS, with a pilot phase expected in 2026. In July 2025, the government enacted its first climate law, establishing the legal basis for the system and creating a dedicated board to decide on key design features such as cap setting and allocation plans, free allowance distribution, and offset limits. A draft regulation on implementation was released for stakeholder consultation shortly after. The country submitted its NDC 3.0 in late 2025 and will host COP 31 in 2026.

Ukraine: Ukraine continues to prepare the regulatory framework for its national ETS. In February 2025, the Ukrainian government approved the Action Plan for the establishment of a national ETS. The document stipulates that the ETS pilot phase should begin in 2028, with the operational phase starting not earlier than three years after the current martial law is lifted.

United Kingdom: The UK ETS, launched in 2021, continued to mature in 2025 with the implementation of key reforms and the preparation for significant scope expansion. The UK and the EU agreed to work towards linking their respective ETSs, which would enable mutual recognition of allowances and create conditions for mutual CBAM exemptions. The UK confirmed maritime coverage from mid-2026 and announced plans to include waste incineration from 2028 and engineered greenhouse gas removals from 2029. Free allocation rules were finalized for the next allocation period starting in 2027, with allowances for sectors covered by the forthcoming CBAM set to phase out gradually. The government is legislating to introduce the UK CBAM from the start of 2027, covering sectors such as aluminum, cement, fertilizers, hydrogen, iron, and steel. The UK also extended the ETS for a second phase, running from 2031 to the end of 2040.

NORTH AMERICA

Alberta: Operational since 2007, Alberta's intensity-based industrial ETS was the first of its kind in North America, with the current iteration in effect since 2020. In 2025, the government froze the set price in response to economic concerns. It also introduced a new compliance pathway, allowing facilities to meet part of their obligations through direct investments in on-site emissions reduction technologies. The government further reaffirmed its commitment to maintaining the system, receiving strong industry support.

British Columbia: Launched in April 2024, British Columbia's OBPS covers large industrial operations. Following the elimination of the provincial carbon tax in April 2025, the system became the province's sole carbon pricing instrument. The first compliance year concluded successfully in 2025, with around 120 operations covered. The province also expanded its offset framework with two new protocols for carbon capture and refrigerant destruction. An independent review recommended extending the system to 2040.

California: California operates one of the largest compliance carbon markets worldwide, linked with Québec since 2014. In September 2025, the government adopted landmark legislation reauthorizing the program through 2045 and renaming it from "Cap-and-Trade" to "Cap-and-Invest". The new laws direct the competent authority to align emissions caps with state climate targets for 2030 and 2045, strengthen offset protocols, and set appropriation rules for program revenues. A formal rulemaking process to implement these requirements is underway, with regulatory amendments expected to take effect from 2027. Discussions about potential linkage with Washington continue.

Canada Federal Output-Based Pricing System (OBPS): The federal OBPS has been in place since 2019 as one part of the federal carbon pollution pricing 'backstop' system. Amendments to the OPBS Regulations were necessary in spring 2025 after the federal government eliminated the national federal fuel charge – the second component of the 'backstop' system – on April 1, 2025, by setting all fuel charge rates to zero. The amendments to the OBPS regulations include an update of the definition of 'on-site transportation emissions' to ensure that those emissions remain covered by national carbon pricing.

Colorado: Colorado established an ETS covering large in-state manufacturers, with the first compliance year in 2024. The system includes intensity-based and absolute emissions limits for different types of facilities. In 2025, the government issued the first emission credits to covered facilities, enabling bilateral trading and auction participation. The state held its first annual auction in mid-2025, with several entities participating as bidders and offerors.

Maryland: Maryland is exploring an economy-wide cap-and-invest program to meet its emissions reduction goals. A 2023 plan outlined how such a system could generate revenues for clean energy projects, consumer rebates, and decarbonization initiatives. The state's power sector is already regulated under RGGI. In 2025, the Maryland Commission on Climate Change recommended that the state take the next steps to evaluate and propose potential designs for an economy-wide cap-and-invest program.

Massachusetts: The Massachusetts ETS for electricity generators has been operating since 2018, complementing RGGI: electricity generators in the state must comply with both programs. All allowances are distributed through quarterly auctions, with revenues funding emissions reduction and community programs. In 2025, auction prices for current-year allowances cleared notably higher than those for future vintages, indicating that regulated entities prioritized near-term compliance needs.

New Brunswick: New Brunswick's OBPS is an intensity-based ETS in which each covered entity must surrender compliance units for emissions that exceed its annual emissions limit. It seeks to deliver incremental GHG emissions reductions at the lowest cost to industry, while supporting low-carbon growth and investment, minimizing carbon leakage, ensuring fairness, and providing clarity, administrative efficiency, accountability, and transparency. In 2025, the government published a new version of "The Reporting and Reduction of Greenhouse Gas Emissions Standard".

Newfoundland and Labrador: Newfoundland and Labrador's Performance Standards System (PSS) came into effect in 2019. It is an intensity-based ETS for large industrial emitters, in which each covered entity must surrender compliance units for emissions that exceed each facility's annual emissions limit. The price of Greenhouse Gas Reduction Fund credits increases in line with the federal minimum carbon price.

New York State: New York's Cap-and-Invest Program (NYCI) is under development to reduce statewide emissions in line with its climate legislation. The program will cover all emitting sectors, with allowances primarily distributed through auctions. In 2025, the government released a draft mandatory emissions reporting rule, which was finalized by year-end. A court ruling in late 2025 directed the state to issue emissions reduction regulations by early 2026, reinforcing obligations under its climate law. The state has appealed the decision, placing the order on hold pending further review.

Nova Scotia: Launched in 2023, Nova Scotia's intensity-based OBPS covers electricity generators and large industrial emitters, replacing the province's former cap-and-trade program. In January 2025, an equivalency agreement was reached with the federal government, recognizing the province's emissions regulations for the electricity sector through 2029. Following the elimination of the federal consumer carbon charge in April 2025, the system remains the primary carbon pricing instrument for covered facilities in the province.

Ontario: Ontario's Emissions Performance Standards (EPS) program came into effect in January 2022, replacing the federal OBPS that was operational in Ontario from 2019 to 2021. It is an intensity-based ETS for large industrial emitters, in which each covered entity must surrender compliance units for emissions that exceed its annual limit. In 2025, the "Greenhouse Gas Emissions Performance Standards Regulation" was amended to allow any facility that meets the criteria for voluntary participation at the time of the request to cancel its registration to leave the EPS program.

Oregon: Oregon's emissions trading program is designed to achieve economy-wide GHG emission reductions of 50% by 2035 and 90% by 2050, relative to a 2017–2019 baseline. The program entered into force in 2025 with the start of its first compliance period. Over the past year, the state completed key steps in operationalizing the system, including the initial issuance and distribution of compliance instruments to covered entities, and the publication of detailed guidance on monitoring, reporting, and compliance obligations.

Pennsylvania: Pennsylvania published a regulation in 2022 to establish an ETS for the power sector and link it to RGGI. The regulation faced legal challenges, and a court ruled it unconstitutional in 2023. In 2025, the legislature formally ended the state's participation in RGGI through budget legislation. Meanwhile, lawmakers reintroduced a bill proposing a state-run cap-and-invest program for fossil fuel-fired electricity generators. If implemented, auction revenues from the state-run program would fund consumer rebates, clean energy projects, workforce development, and low-income support.

Québec: Québec operates a comprehensive cap-and-trade system covering around 80% of the jurisdiction's emissions. Linked with California since 2014, the system continued operating smoothly in 2025, with joint auctions generating substantial revenues. The government published a green economy plan for the rest of the decade, funded primarily by carbon market proceeds. Regulatory amendments progressed through the year, with draft regulations expected in early 2026. Discussions about potential linkage with Washington continue.

Regional Greenhouse Gas Initiative (RGGI): In mid-2025, participating RGGI states concluded their third program review, introducing reforms effective from 2027. These include a tightened emissions cap with steeper annual reductions, an expanded cost containment reserve, a higher minimum reserve price, and a phase-out of new offset credits. Each state committed to amending its regulations accordingly. Meanwhile, Virginia's 2022 withdrawal from the program remained legally contested, with a court pausing its return pending an appeal. Pennsylvania formally ended its participation through budget legislation in late 2025.

Saskatchewan: Saskatchewan's Output-Based Performance Standards (OBPS) Program came into effect in 2019. It is an intensity-based ETS for large industrial emitters, in which regulated facilities are required to satisfy a facility specific performance standard. In 2025, the government of Saskatchewan announced that it would pause the OBPS Program effective April 1, 2025, in response to the uncertainty and increasing costs associated with ongoing global tariffs. While the accrual and fulfilment of compliance obligations is paused, regulated facilities are still required to submit their emission reports to the Ministry of Environment.

Vermont: Vermont is exploring a cap-and-invest program to help meet its climate goals. The state's power sector is already covered by RGGI. In 2024, the legislature mandated a study on expanding coverage to additional sectors. The study was completed in early 2025, and the state treasurer recommended against establishing an independent program due to the state's small size. The government is therefore monitoring developments of the New York Cap-and-Invest Program with a view of potential future linkage.

Washington: Washington's cap-and-invest program, launched in 2023, covers most of the state's emissions. In 2025, the legislature enacted new legislation directing the environmental agency to analyze market dynamics under potential linkage scenarios and establishing a fixed price ceiling of USD 80 for the coming years. The agency advanced the state's rulemaking to enable future linkage, with adoption expected in late 2026. Discussions about potential linkage with California and Québec continue.

ASIA PACIFIC

Australia: The Australian Safeguard Mechanism is a baseline-and-credit system that assigns mandatory emissions baselines to the largest facilities in the industry and transport sectors. Facilities that emit above their baselines are required to offset excess emissions, and facilities that exceed their baseline targets are issued credits. FY2024 was the first full compliance year under the reformed Safeguard Mechanism. In February 2025, the regulator issued the first Safeguard Mechanism Credits following emissions reporting for FY2024. Comprehensive compliance data published in April 2025 showed that covered emissions decreased by approximately 2%, demonstrating the system's effectiveness in driving emissions reductions.

China (national): The China National Carbon Market is an intensity-based system launched in 2021. In 2025, the compliance for 2023 was completed with a 99.98% compliance rate. The General Office of the CPC Central Committee and the General Office of the State Council jointly released the "Opinions on Advancing Green and Low-Carbon Transformation and Strengthening the Construction of the National Carbon Market", setting out a roadmap to transition from an intensity-based cap to an absolute cap. In November, the Ministry of Ecology and Environment published the allocation plan officially extending the National Carbon Market to the steel, cement, and aluminium smelting sectors for the 2024 and 2025 compliance years, adding 3 billion

tonnes of emissions to the market's coverage. Also in November, China submitted its 2035 NDC, committing to reduce economy-wide GHG emissions by 7-10% from peak levels – marking the first time China has pledged an absolute emissions reduction. The new NDC also envisages expanding market coverage and introducing auctioning in the National Carbon Market.

Chinese Pilots: All Chinese regional pilots continued trading, ensuring compliance, and updating ETS management measures. A common theme across pilots was the integration of steel, cement, and aluminium smelting entities into the National Carbon Market, which notably reduced the emissions cap in pilots such as Guangdong, where total covered emissions dropped from nearly 300 $MtCO_2$ to 94 $MtCO_2$. Shanghai issued a five-year reform plan introducing an absolute cap for sectors with stable emissions and increasing the share of auctioned allowances. Hubei, Shanghai, and Tianjin also set out plans to lower inclusion thresholds, expand sectoral coverage, and cover non-CO_2 emissions. In addition, several pilots, including Beijing, Shanghai, Fujian, and Shenzhen, advanced their carbon inclusive (Tan Pu Hui) offset mechanisms.

India: The Indian government adopted detailed regulations for the compliance mechanism under the Carbon Credit Trading Scheme (CCTS) in 2024. It takes the form of an intensity-based baseline-and-credit system, with mandatory emissions intensity targets for energy-intensive industries. The system builds on an existing energy efficiency scheme that is being gradually transitioned into a compliance carbon market. Seven industrial sectors successfully shifted to the new system in 2025, with targets notified in two phases. Entities now have legally binding emissions intensity targets for the first two compliance years (FY2026 and FY2027). Credit trading is expected to launch by mid-2026.

Indonesia: Indonesia introduced an intensity-based ETS for the power sector in 2023. In its first phase, it covered only coal-fired power plants connected to the grid. In 2025, the scope expanded to cover captive coal plants not connected to the grid and gas power plants. As a result, the total number of covered installations rose from around 150 to over 400, significantly increasing the system's reach. A presidential regulation formalized the national carbon pricing framework, establishing the legal basis for the trading system, a carbon levy that functions as a compliance backstop, and a results-based payment mechanism. Due to regulatory changes, the allocation of allowances for 2025 was postponed, and no trading took place.

Japan: Japan started its ETS as a voluntary baseline-and-credit system in 2023. In the FY2026, which starts in April 2026, the GX-ETS will transition to a mandatory baseline-and-credit system, marking a significant shift in the country's carbon pricing approach. More than 700 companies, accounting for over half of national emissions, participated in the voluntary phase. Over the course of 2025, the government held several working group meetings to consult stakeholders on various design aspects of the mandatory system, including benchmarks and grandfathering for setting baselines and price limits for emission allowances. Auctioning is planned from 2033 for high-emitting corporations in the power sector. The system is part of a broader decarbonization strategy that combines carbon pricing instruments to help meet net zero emissions by 2050.

Malaysia: Malaysia is in the process of establishing a domestic carbon market. In September 2025, the government approved a new national climate policy that identifies carbon pricing and carbon markets as key instruments to achieve climate targets. A consultation paper for climate legislation released in 2024 includes the legal basis to establish a domestic ETS. Under the national development plan for 2026 to 2030, the government announced it will introduce a carbon market policy and launch a domestic ETS to facilitate the transition towards a low-carbon economy. In October 2025, the government announced a carbon tax for iron, steel, and energy industries starting in 2026, aligned with the forthcoming carbon market policy.

New Zealand: Launched in 2008, New Zealand's ETS covers nearly half of national emissions across all sectors except agriculture. In 2025, all four quarterly auctions failed to clear as secondary market prices remained below the price floor, resulting in the permanent withdrawal of over 13 million unsold units. The government announced tight supply settings through 2030, with overall unit supply set to decline significantly. New legislation was passed restricting ETS forestry registrations on productive agricultural land. Further amendments removed the requirement for supply settings to align with the country's international climate commitments, while retaining alignment with New Zealand's legally-binding domestic net zero targets.

Philippines: Legislation to establish a carbon pricing framework advanced in 2025. In June, the House of Representatives approved the Low Carbon Economy Investment Act, which was then submitted to the Senate for deliberation. If enacted, the Act will mandate large and medium emitters from the energy, transportation, industry, agriculture, forestry and waste sectors to develop decarbonization plans. The proposed system follows an 'investment-first' approach, requiring entities exceeding their allowances to establish decarbonization funds before accessing market-based compliance options.

Republic of Korea: The Korean Emissions Trading System, launched in 2015, was East Asia's first national ETS, covering the electricity, industrial, building, waste, transport, domestic aviation, and maritime sectors. In autumn 2025, the government reformed some K-ETS elements, including streamlining the allocation rules into two broad categories: power generation and non-power generation sectors. The auctioning share for the power generation sector will gradually increase to 50% by 2030. Other sectors will receive more, and EITE sectors 100% free allocation. Excluding the K-MSR and new entrants' reserve, roughly 11% of total allowances will be auctioned. A quantity-based K-MSR will be further defined in the first half of 2026 following public consultation. The fourth allocation period (2026 to 2030) started.

Saitama: Saitama Prefecture's ETS, launched in 2011, covers commercial buildings and industrial sectors. In 2025, the fourth compliance period (FY2025 to FY2029) started and the compliance factor rose to 50% for office buildings and 48% for factories. In June, the Prefectural government announced that, in FY2023, the Saitama ETS achieved a 42% reduction in emissions below base-year levels and 448 of the 564 covered facilities (79%) achieved their targets in the second compliance period (2015 to 2019).

Taiwan, China: Taiwan, China, implemented a carbon fee of TWD 300 (USD 9.62) per tCO_2e that applies to power and manufacturing entities emitting more than 25,000 tCO_2e per year since 2025. In January 2025, the Vice Premier announced plans to accelerate the transition from the carbon fee to an ETS, with a possible pilot in the second half of 2026 and full implementation expected in 2027 or 2028, operating in parallel with the carbon fee. The Ministry of Environment is also consulting on a CBAM, with regulations expected to be piloted in the first half of 2026, initially covering cement and steel products.

Thailand: Thailand has been developing its carbon pricing framework for over a decade, building on voluntary trading pilots since 2013. In December 2025, the cabinet approved a draft Climate Change Act establishing four carbon pricing instruments: an ETS, a carbon tax, a CBAM, and a regulated carbon credit market. The bill now proceeds to Parliament, with enforcement anticipated in 2027. The proposed ETS will operate under industry-specific emissions ceilings, with a pilot system potentially launching in 2029.

Tokyo: The Tokyo Metropolitan Government Cap-and-Trade Program, Japan's first mandatory ETS, was launched in April 2010. It covers CO_2 emissions from large buildings, factories, heat suppliers, and other facilities that consume large quantities of fossil fuels. Its fourth compliance period started in April 2025 and the compliance factor rose to 50% for office buildings and 48% for factories. In addition, actual emission factors, instead of fixed emission factors, are used to calculate emissions from electricity, heat, and city gas supplied by retailers, based on contracts at the facilities. In March 2025, the TMG published the results for the fourth fiscal year of the third compliance period (FY2023), showing that emissions from covered facilities totaled 11.3 $MtCO_2$ – 31% below base-year emissions.

Vietnam: Vietnam has brought its national Pilot ETS into force, with covered emissions for the 2025 and 2026 compliance years in the power, iron and steel, and cement sectors set by regulation. The legal basis was significantly strengthened in 2025, with regulation defining core ETS design elements and compliance arrangements for the Pilot phase. The Pilot ETS applies an intensity-based approach with 100% free allocation based on output-based benchmarks, while establishing provisions for banking, limited borrowing, and the use of domestic and international offset credits. The framework also sets a pathway toward gradual auctioning and expanded coverage from 2029, following evaluation of the pilot.

LATIN AMERICA AND THE CARIBBEAN

Brazil: Brazil's ETS is a national cap-and-trade program, established in late 2024, with its core legal framework adopted and implementation activities underway. Over the past year, the government established a temporary institutional body to accelerate the development of secondary regulations, including rules on monitoring, reporting, and verification, and the design of a central registry. These actions have advanced the system from legal adoption toward operational readiness, laying the groundwork for decisions on sectoral coverage, allowance allocation modalities, and the integration of domestic crediting instruments.

Bolivia: Bolivia is considering the establishment of a national ETS under a draft law introduced to parliament in November 2025. The proposal marks a significant shift in climate policy, following recent developments that opened the door to market-based instruments, including a 2024 court ruling overturning the prohibition of environmental market mechanisms. The proposed system would set a cap on emissions from facilities exceeding a defined threshold, with a mixed allocation model combining free allocation and auctioning.

Chile: Chile's market-based climate policy is anchored in a national climate legal framework that enables the establishment of emissions limits and the use of market-based compliance mechanisms. Over the past year, the government has advanced secondary regulations to set emissions limits for methane from the waste sector and for fluorinated gases, providing a regulatory foundation for the potential use of flexible compliance and future market mechanisms. The government published a national roadmap on carbon pricing and market instruments, strengthening policy coherence between emissions limits, the existing carbon tax, and carbon crediting frameworks. In parallel, preparatory technical work continued on the design of a pilot ETS for the energy sector.

Colombia: In 2018, Colombia adopted a climate law which outlines basic provisions for the establishment of an ETS. Following a public consultation in 2024, the regulatory framework remained under development in 2025. A first or preliminary phase is expected to start in 2027, with full implementation of the system planned for 2030. The preliminary phase will test operational rules, generate information to evaluate the system's structure, and identify opportunities for improvement. Auctioning is expected to be the main allocation method, with the auction reference price aligned with the national carbon tax rate. The cap will be set annually in line with the country's climate targets.

Dominican Republic: The Dominican Republic is developing a pilot ETS aligned with its climate goals. A roadmap for designing an ETS was completed in 2020, followed by a simulation exercise with key stakeholders in 2023. Building on these foundations, an international initiative has supported the government in designing a pilot system. In 2024, terms of reference were published for consultancy services to support the pilot design. The draft design is currently under review by the national climate council. The pilot will define covered emissions, sectors, and facilities, establish a cap aligned with climate goals, and design an allocation process. It will also develop monitoring and verification procedures and create a registry and trading platform.

Mexico: The Mexico ETS, the first in Latin America, started its pilot phase in January 2020. It covers direct CO_2 emissions from fixed sources in the energy and industry sectors emitting at least 100,000 tCO_2 per year. In 2025, the government published the "2025 to 2030 Sectoral Program of Environment and Natural Resources", which contains a line of action to put into operation the first phase of the ETS, as well as ensuring the alignment with other carbon pricing instruments. Moreover, the government published its NDC 3.0, which contains a commitment to reach net zero emissions by mid-century.

02 INFOGRAPHICS

FROM LOCAL TO SUPRANATIONAL

EMISSIONS TRADING SYSTEMS OPERATE AT EVERY LEVEL OF GOVERNMENT

Emissions trading can be implemented at several levels of government. At one end of the spectrum, city-level ETSs are in operation, for example, in Shenzhen. At the other end, the EU ETS operates supranationally in all EU Member States plus Iceland, Liechtenstein, and Norway. Multiple ETSs may be in force in the same jurisdiction, such as Germany and Austria, where some emissions are covered by the EU ETS and others by the German or the Austrian National ETS. Similarly, the China National ETS currently covers power sector, steel, cement, and aluminium smelting emissions while other province- and city-level ETS pilots regulate emissions from a variety of sectors. In North America, many provincial or state-level ETSs exist, with some linked domestically or internationally. In the rest of the ICAP Status Report 2026, you can find a wealth of information about these individual systems that are already in force as well as many others that are under development or under consideration.

5 Cities

Beijing*
Chongqing*
Shanghai*
Shenzhen
Tianjin*

27 Provinces & States

Alberta
British Columbia
California
Colorado
Connecticut
Delaware
Fujian
Guangdong
Hubei
Maine
Maryland
Massachusetts
New Brunswick
New Hampshire
New Jersey
New York
Newfoundland and Labrador
Nova Scotia
Ontario
Oregon
Saitama
Québec
Rhode Island
Saskatchewan
Tokyo
Vermont
Washington

16 Countries

Australia
Austria
Canada
China
Germany
India
Indonesia
Japan
Kazakhstan
Mexico
Montenegro
New Zealand
Republic of Korea
Switzerland
United Kingdom
Vietnam

1 Supranational

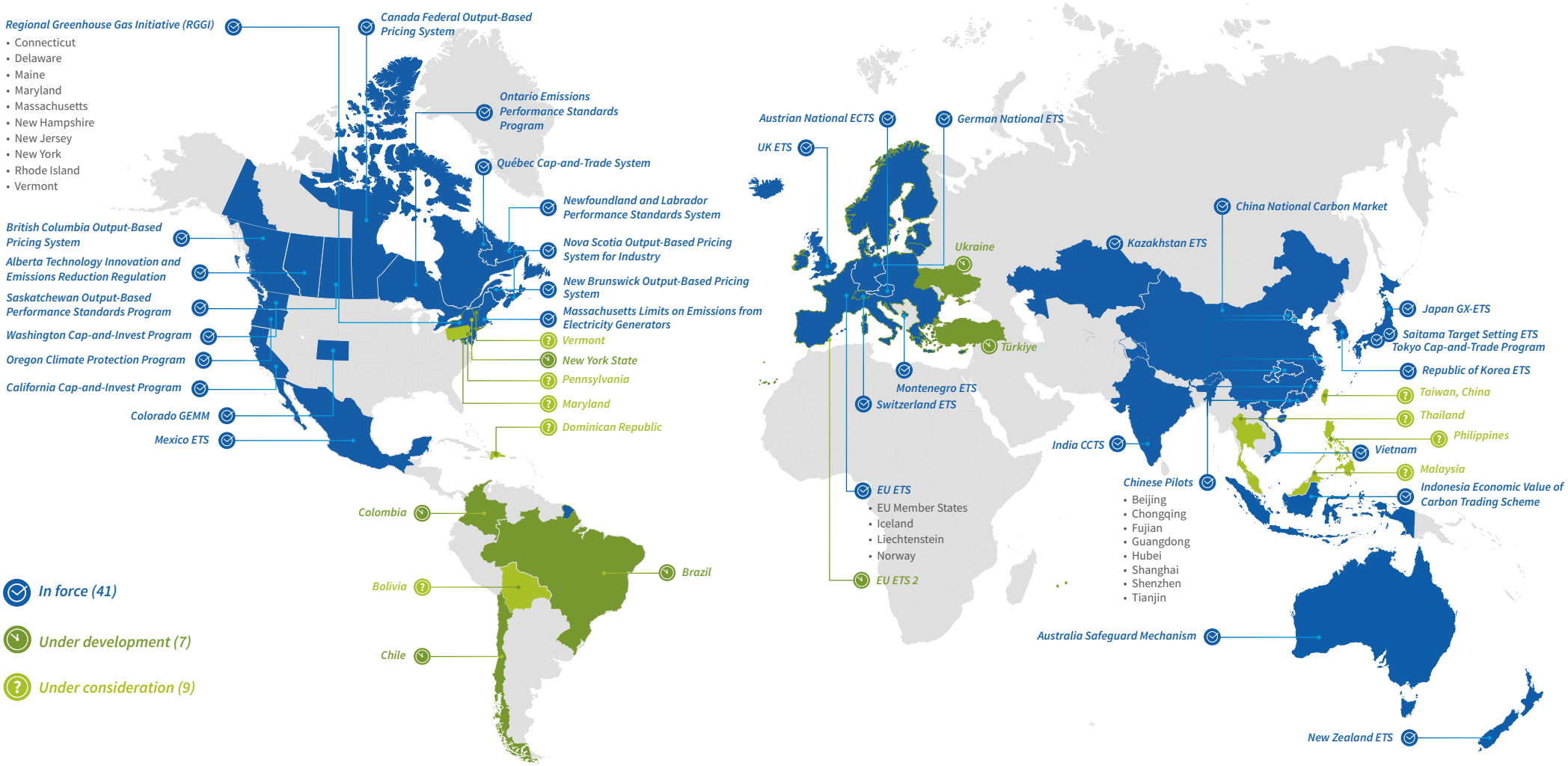
EU Member States
+ Iceland
+ Liechtenstein
+ Norway

* Beijing, Chongqing, Shanghai and Tianjin are provincial-level municipalities in the Chinese administrative system.

EMISSIONS TRADING WORLDWIDE

THE CURRENT STATE OF PLAY

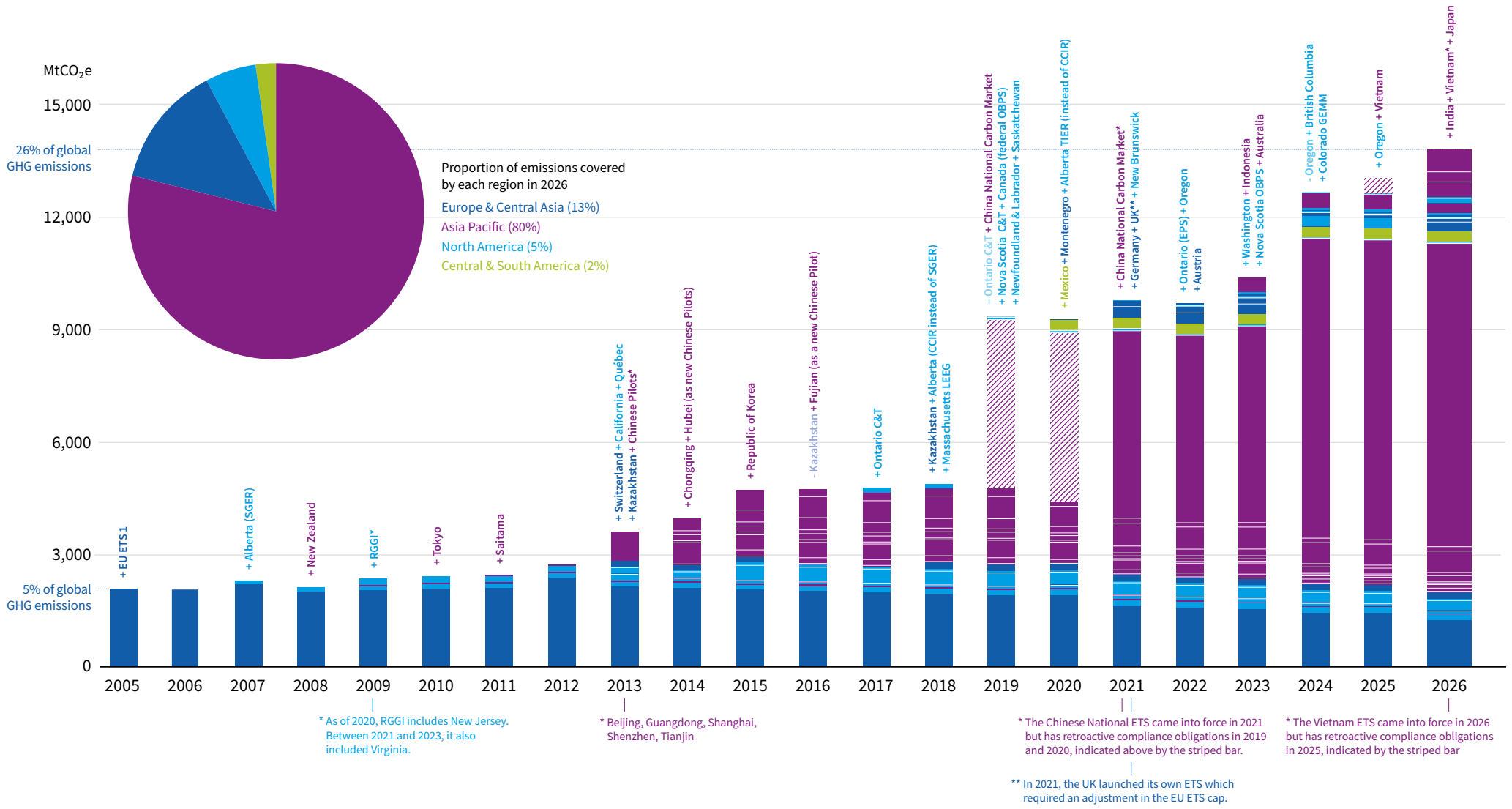
The ICAP ETS world map depicts emissions trading systems currently in force, under development, or under consideration. As of February 2026, there are 41 ETSs in force. Another 7 are under development and expected to be in operation in the next few years. These include ETSs in Colombia, Türkiye, and New York State. 9 jurisdictions are also considering the role an ETS can play in their climate change policy mix. If a jurisdiction has multiple systems in force, it is depicted in blue, with the borders of the jurisdiction representing the layered systems (e.g., Germany within the EU ETS jurisdiction and Guangdong within the China National Carbon Market jurisdiction). If, however, it has a system in force but is also developing an additional system, it is depicted in blue but also features a green border (e.g., the EU).



GLOBAL EXPANSION OF EMISSIONS TRADING

THE SHARE OF GLOBAL GHG EMISSIONS UNDER AN ETS HAS MORE THAN TRIPLED SINCE 2005

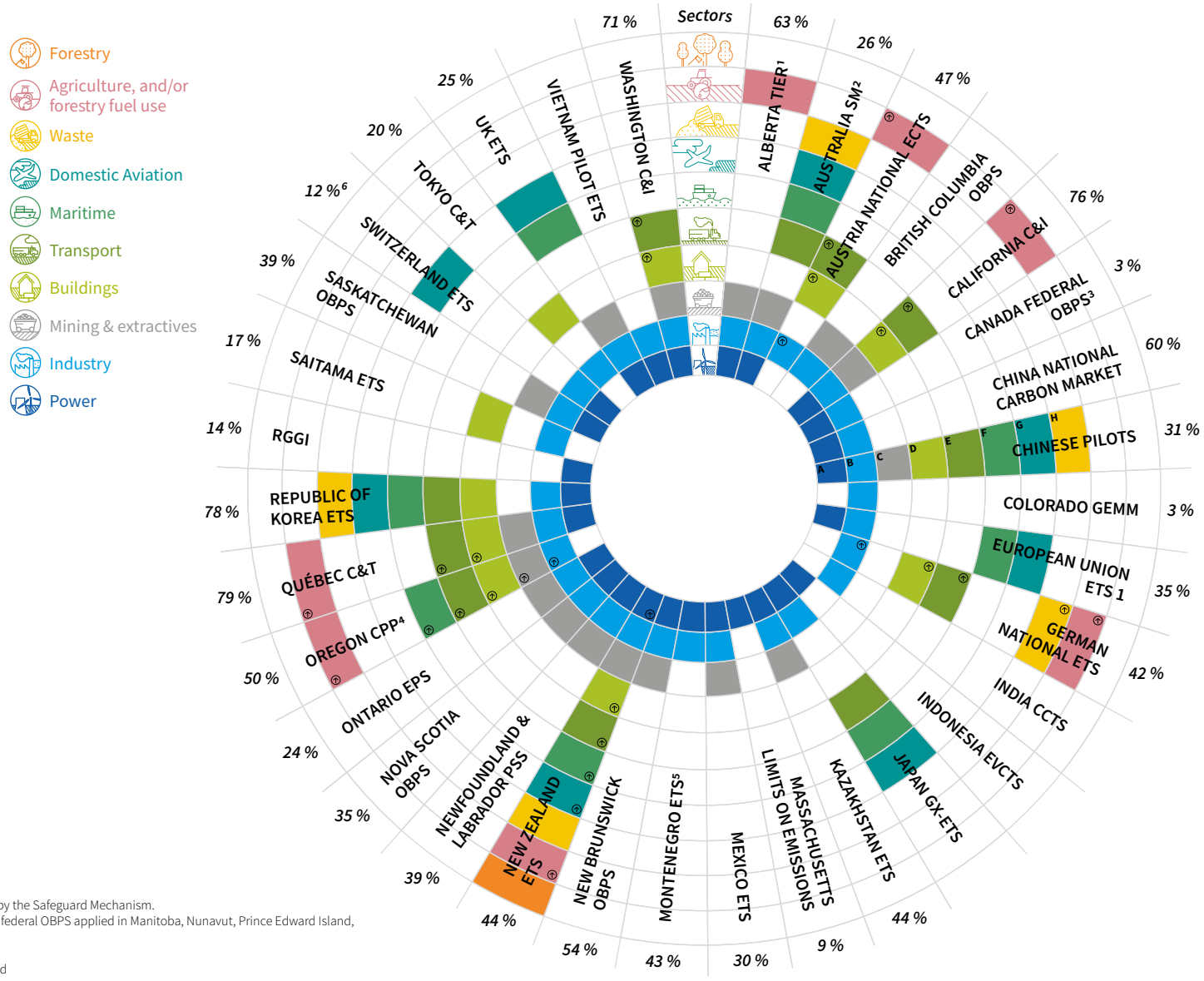
The graphic depicts the worldwide growth of emissions trading over time. The share of global GHG emissions covered by emissions trading is almost 26%, more than five times the amount when the EU ETS was launched in 2005. Changes over time are driven by the addition of new sectors and systems, as well as by the counteracting trends of declining caps in many systems and growing global emissions. See “Notes on Methods and Sources” for further details.



SECTORAL COVERAGE

SECTORS COVERED BY EMISSIONS TRADING ACROSS SYSTEMS

The graphic shows sectors (types of economic activity) covered by an ETS in force in 2026. Systems are listed clockwise alphabetically, with the numbers in the outermost ring indicating the share of aggregate emissions covered by the system as per the most recent available data. Upstream coverage in a sector is indicated with an arrow. Sectors are considered covered when at least some entities in the sector have explicit compliance obligations. Typically, not all facilities in the sector are regulated because of limits like inclusion thresholds. In addition, not all gases or processes of a given sector may be covered. The jurisdictions' respective factsheets provide more information on system coverage. The graphic includes only sectors which are covered by at least one ETS. See "Notes on Methods and Sources" for further details.



- A Beijing*, Shanghai*
- B Beijing, Chongqing, Fujian, Guangdong, Hubei, Shanghai, Shenzhen, Tianjin
- C Chongqing, Tianjin
- D Beijing, Shanghai, Shenzhen, Tianjin
- E Beijing, Shenzhen
- F Shanghai, Tianjin
- G Fujian, Guangdong, Shanghai
- H Chongqing, Shenzhen

** The Beijing ETS covers one power company. The Shanghai ETS covers oil-fired generators*

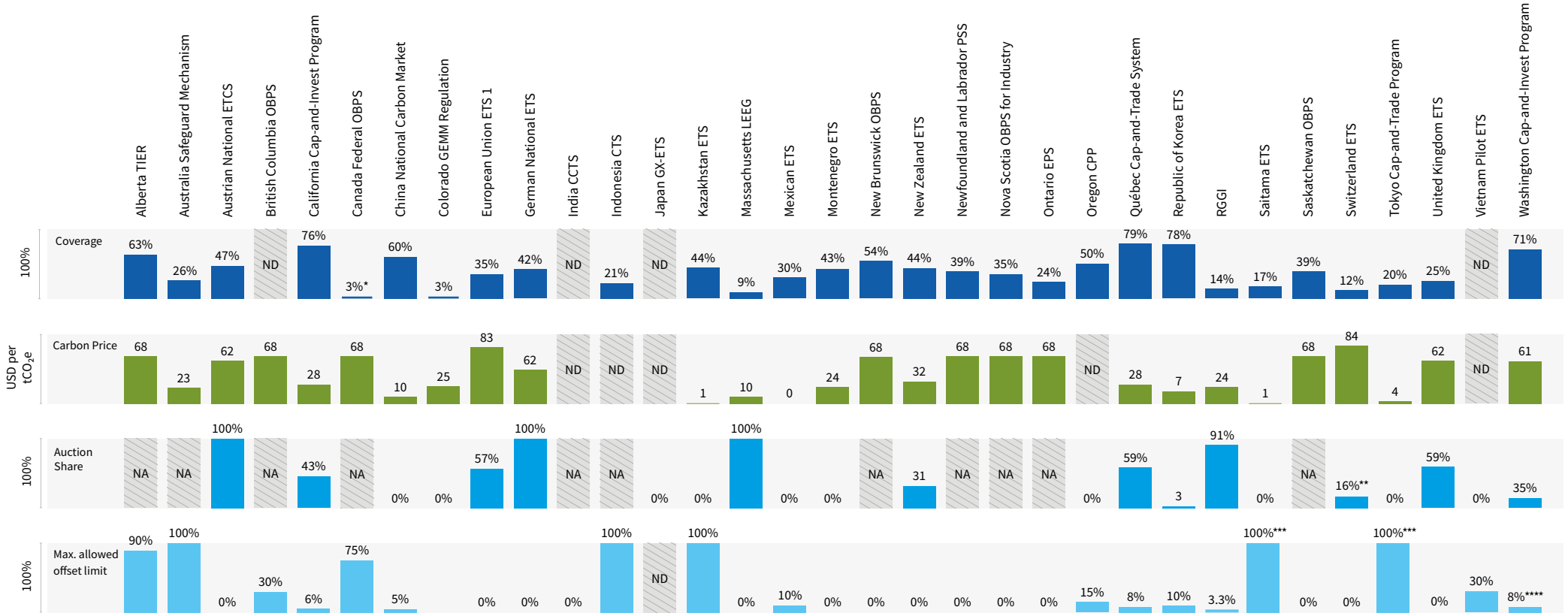
↑ indicates which sectors are covered upstream

1 The Alberta TIER system covers forestry fuel use.
2 Only a very small share of emissions (~1%) from the waste and transport sectors are covered by the Safeguard Mechanism.
3 The 2022 value is not consistent with the current application of the federal OBPS. In 2022, the federal OBPS applied in Manitoba, Nunavut, Prince Edward Island, Yukon, and partially in Saskatchewan. The federal OPBS no longer applies in Saskatchewan.
4 Emissions resulting from fuels used in petroleum and natural gas production are excluded.
5 While only one power sector entity is currently operational, Montenegro has explicitly included industrial processes within the scope of its ETS.
6 Covered emissions are calculated using overall GHG emissions with international aviation and without LULUCF.

DIFFERENT DIMENSIONS OF ETS

A COMPARATIVE LOOK AT KEY METRICS FROM CARBON MARKETS

The bars below display information on different metric across ETSs in force. **Coverage** (in dark blue) shows the share of the jurisdiction's GHG emissions covered under the ETS. **Carbon price** (in dark green) is measured in USD per metric tonne of CO_2e and averaged over 2025. **Auction share** (in blue), expressed as a share of the 2025 cap, denotes the share of allowances that have been offered for auction in the primary market. **Max. allowed offset limit** (in light blue) indicates the share of a compliance entity's obligations that can be met using approved offsets. The size of each bar represents the numerical value of the corresponding dimension. "ND" indicates that data for a given metric is not available for the system as of February 2026. "NA" indicates that the metric is not applicable for the system in question. See "Notes on Methods and Sources" for further details.



ND = No Data
NA = Not Applicable

* The coverage value refers to 2022, when the Canada Federal OBPS applied in Manitoba, Nunavut, Prince Edward Island, Yukon, and partially in Saskatchewan. The federal OBPS no longer apples in Saskatchewan.

** The figure for Switzerland displays the proportion of allowances sold at 2025 auctions, instead of offered allowances. Covered emissions are calculated using overall GHG emissions with international aviation and without LULUCF.

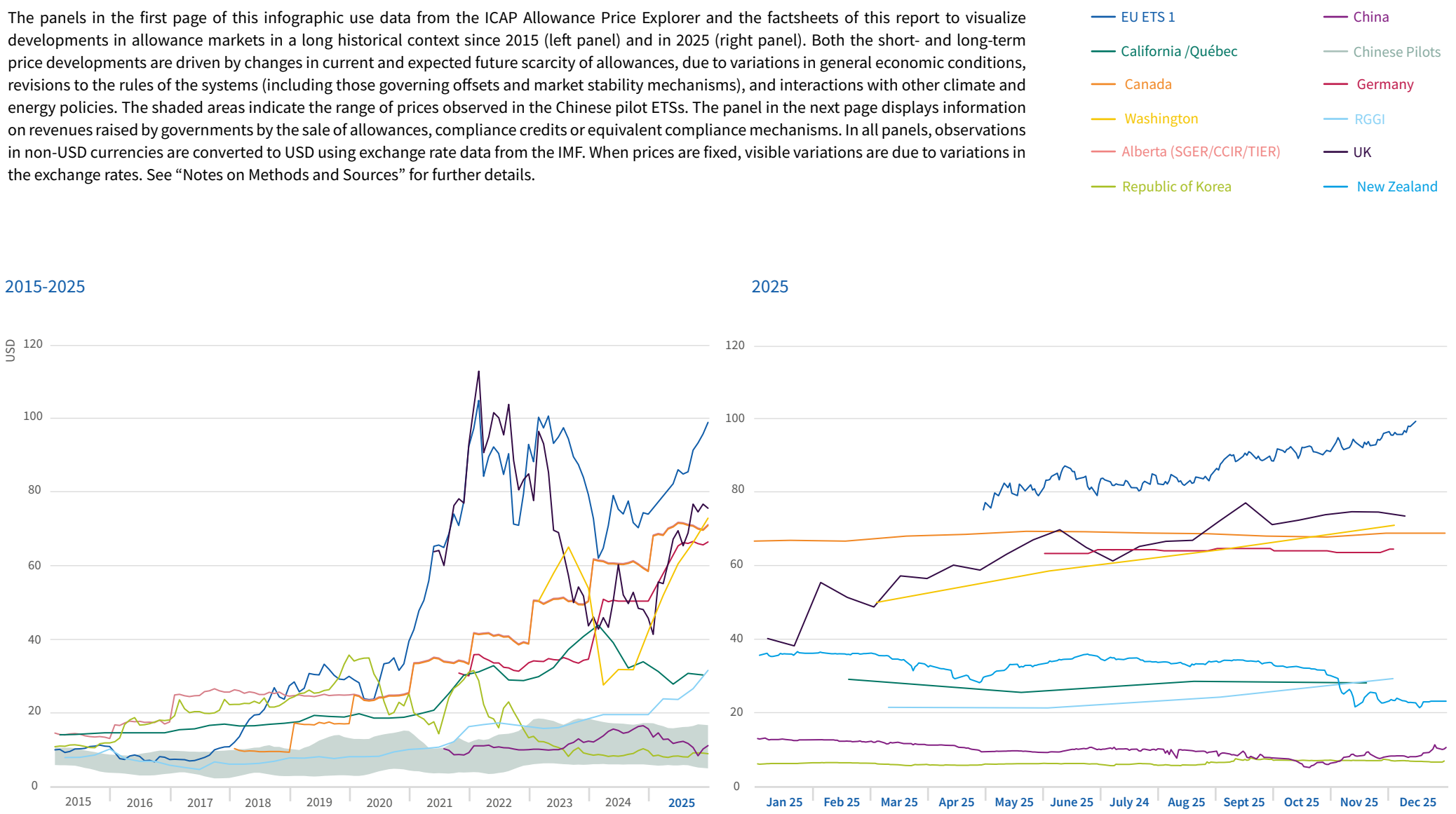
*** In Saitama, quantitative limits apply for "outside Saitama" credits. In Tokyo, quantitative limits apply for "outside Tokyo" credits.

**** Up to 8% in aggregate. Up to 5% of an entity's compliance obligation from projects not located on federally recognized tribal land. An additional 3% can be met from projects located on federally recognized tribal land.

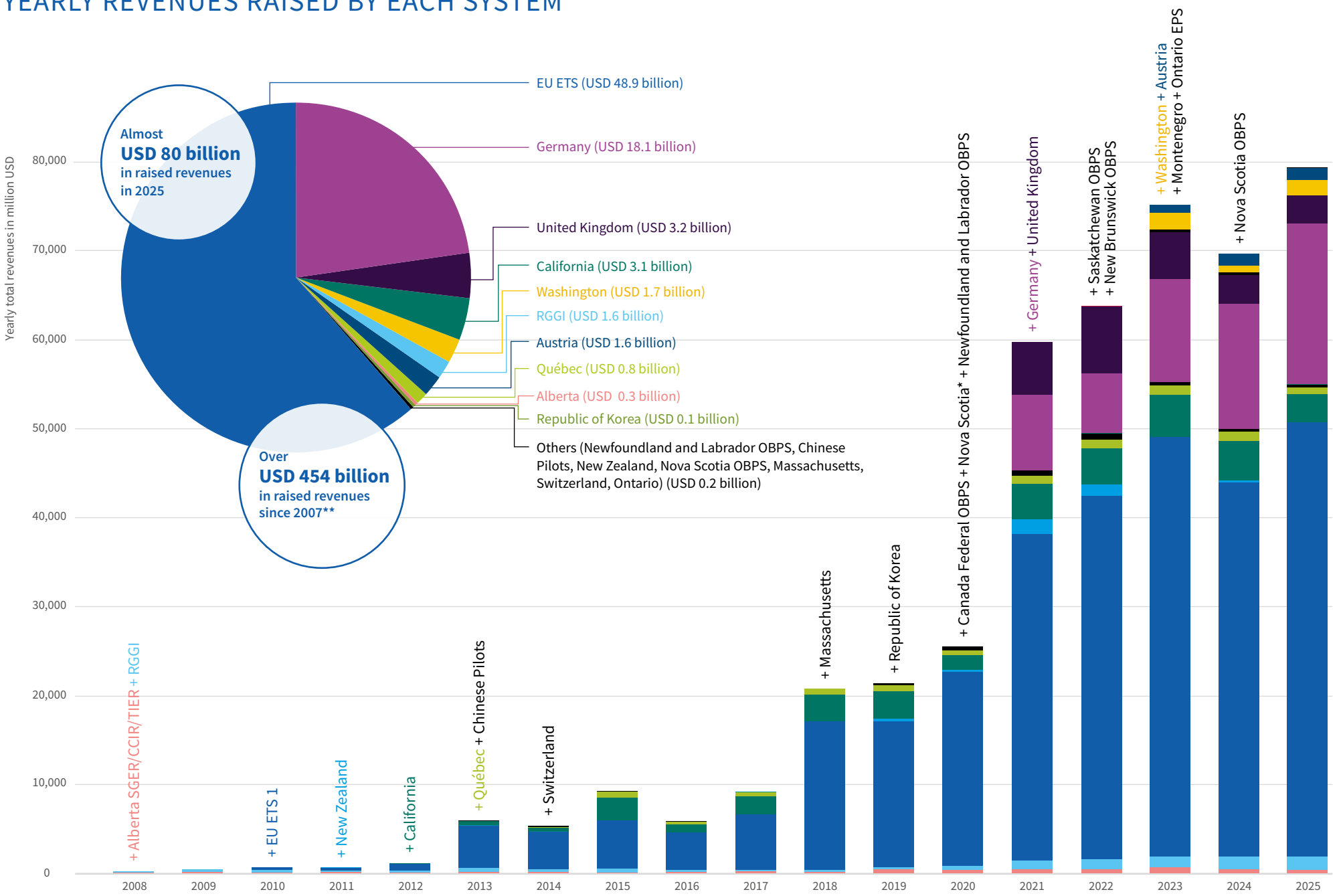
ALLOWANCE PRICES AND REVENUES

2025 IN A LONGER HISTORICAL CONTEXT

The panels in the first page of this infographic use data from the ICAP Allowance Price Explorer and the factsheets of this report to visualize developments in allowance markets in a long historical context since 2015 (left panel) and in 2025 (right panel). Both the short- and long-term price developments are driven by changes in current and expected future scarcity of allowances, due to variations in general economic conditions, revisions to the rules of the systems (including those governing offsets and market stability mechanisms), and interactions with other climate and energy policies. The shaded areas indicate the range of prices observed in the Chinese pilot ETSs. The panel in the next page displays information on revenues raised by governments by the sale of allowances, compliance credits or equivalent compliance mechanisms. In all panels, observations in non-USD currencies are converted to USD using exchange rate data from the IMF. When prices are fixed, visible variations are due to variations in the exchange rates. See “Notes on Methods and Sources” for further details.



YEARLY REVENUES RAISED BY EACH SYSTEM



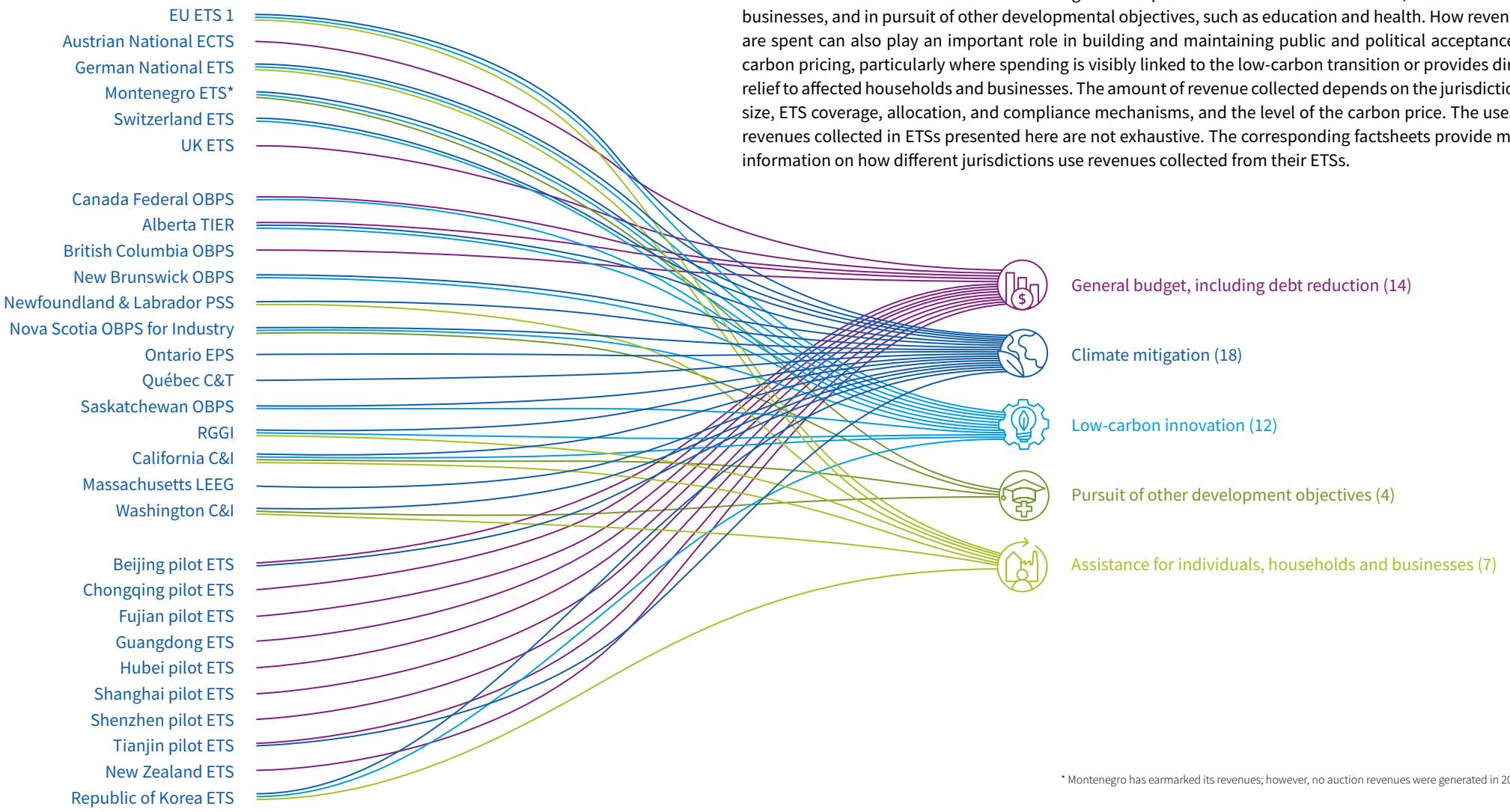
* Revenues under the cap and trade program. Last auctions in the program took place in 2023

** Revenues collected by the Canada federal OBPS are reported only until 2023. Data for New Brunswick is reported through 2024. Data for Saskatchewan and Ontario are only reported until 2024-2025 (reported here as 2024). Note that the graph displays revenues when they were collected, instead of the compliance year to which they correspond.

USE OF ETS REVENUE

EMISSIONS TRADING REVENUES FULFILLING SOCIETAL OBJECTIVES

ETSs collect revenue by the auction of allowances, selling of credits, or collection of payments into funds. This revenue can and is being used in a number of ways, reflecting jurisdictional priorities, as shown by the infographic. Each line in the graphic connects each ETS to one or more categories of revenue use, with multiple lines indicating that revenues are directed to more than one category. The infographic reflects jurisdictions' committed revenue use categories rather than the proportion of revenues allocated to each. Some jurisdictions channel collected revenues towards their general budget, while others earmark revenues for specific uses. This includes jurisdictions that use auction revenues to fund climate mitigation and low carbon innovation. Revenues are also being used to provide assistance to individuals, households and businesses, and in pursuit of other developmental objectives, such as education and health. How revenues are spent can also play an important role in building and maintaining public and political acceptance of carbon pricing, particularly where spending is visibly linked to the low-carbon transition or provides direct relief to affected households and businesses. The amount of revenue collected depends on the jurisdiction's size, ETS coverage, allocation, and compliance mechanisms, and the level of the carbon price. The uses of revenues collected in ETSs presented here are not exhaustive. The corresponding factsheets provide more information on how different jurisdictions use revenues collected from their ETSs.

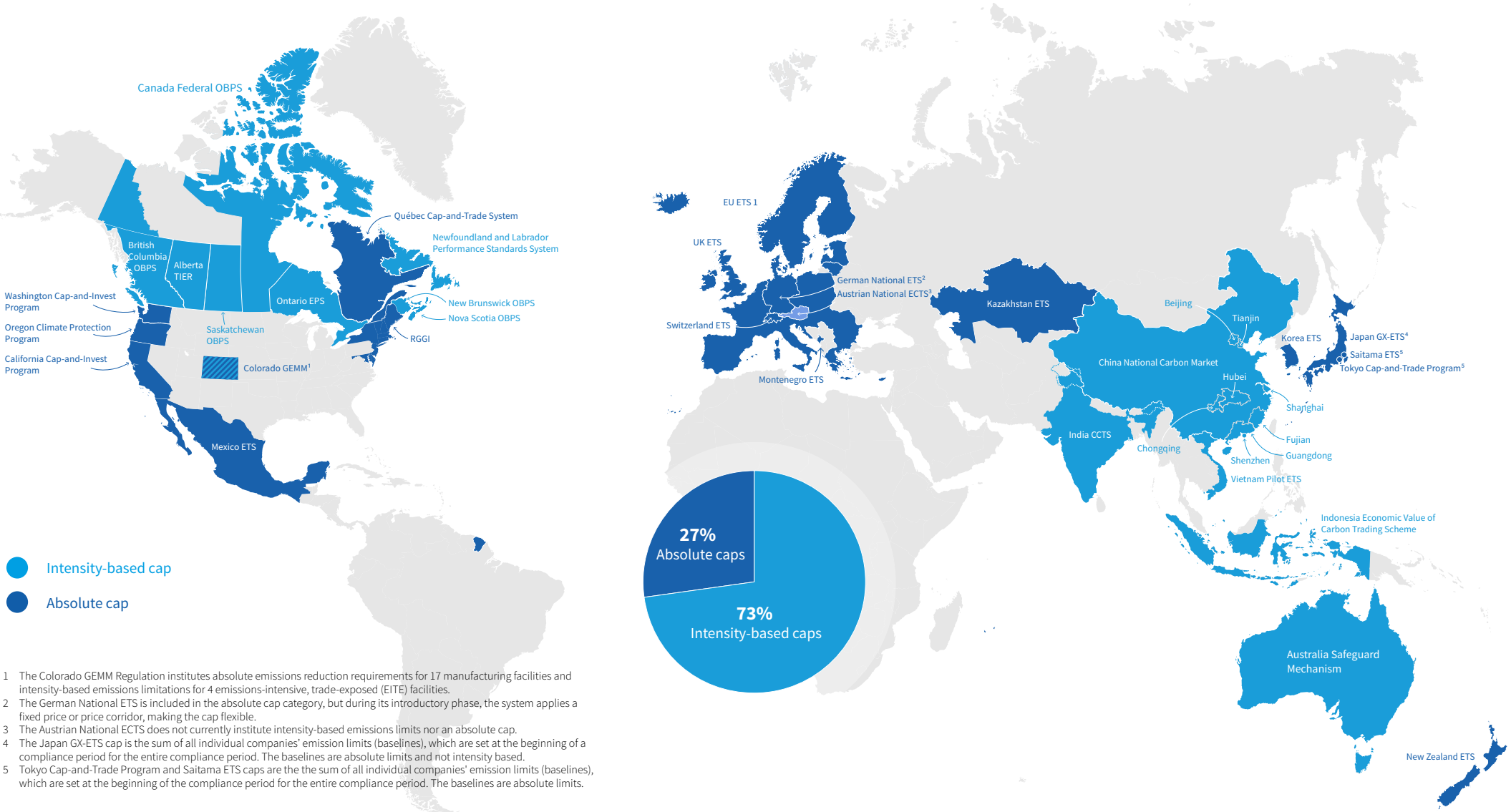


* Montenegro has earmarked its revenues; however, no auction revenues were generated in 2025.

INTENSITY-BASED VS ABSOLUTE CAPS

EMISSIONS TRADING SYSTEMS DIVERSIFY IN CAP SETTING

The graphic groups ETSs currently in force by their approach to cap setting. If a jurisdiction institutes an absolute cap on emissions, it is depicted in dark blue. The jurisdictions that apply intensity-based compliance requirements, where emissions targets are set relative to output or activity levels rather than as a fixed ceiling, are colored light blue. The pie chart displays the proportion of global covered ETS emissions accounted for by each cap type. See “Notes on Methods and Sources” for further details.

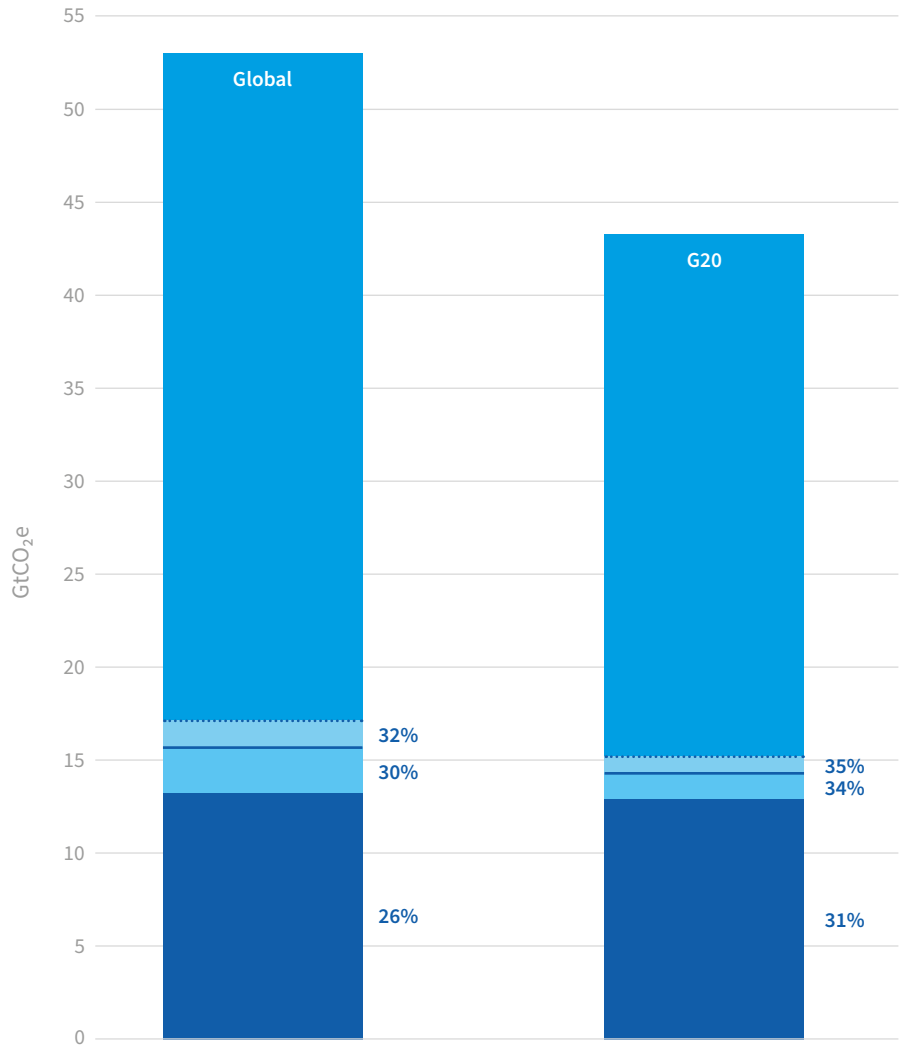


1 The Colorado GEMM Regulation institutes absolute emissions reduction requirements for 17 manufacturing facilities and intensity-based emissions limitations for 4 emissions-intensive, trade-exposed (EITE) facilities.
2 The German National ETS is included in the absolute cap category, but during its introductory phase, the system applies a fixed price or price corridor, making the cap flexible.
3 The Austrian National ECTS does not currently institute intensity-based emissions limits nor an absolute cap.
4 The Japan GX-ETS cap is the sum of all individual companies’ emission limits (baselines), which are set at the beginning of a compliance period for the entire compliance period. The baselines are absolute limits and not intensity based.
5 Tokyo Cap-and-Trade Program and Saitama ETS caps are the the sum of all individual companies' emission limits (baselines), which are set at the beginning of the compliance period for the entire compliance period. The baselines are absolute limits.

UPTAKE OF ETS IN G20 COUNTRIES

AN INCREASINGLY CENTRAL TOOL FOR DECARBONIZATION IN KEY GLOBAL ECONOMIES

This infographic depicts the uptake of emissions trading systems across G20 countries in comparison to global uptake. The height of each bar corresponds to total GHG emissions in the assessed jurisdictions. Within each bar, three reference areas indicate the share of emissions covered by an ETS in force, as well as the estimated coverage of systems currently under development and under consideration or expanding in scope,[1] shown as a low and a high estimate. Percentages next to the first bar represent a proportion of total global emissions, and percentages next to the second bar represent a proportion of total G20 emissions. Coverage in systems in force, under consideration, and under development depend on a wide variety of factors, including policy commitments by the jurisdiction, its emissions profile, emissions mitigation and abatement opportunities, and the role that the ETS could play in the jurisdictions' policy portfolios. See "Notes on Methods and Sources" for further details, including assumptions on coverage of systems under development or under consideration.



Non-ETS covered emissions

Estimated coverage of systems under development and under consideration (high)

Estimated coverage of systems under development and under consideration (low)

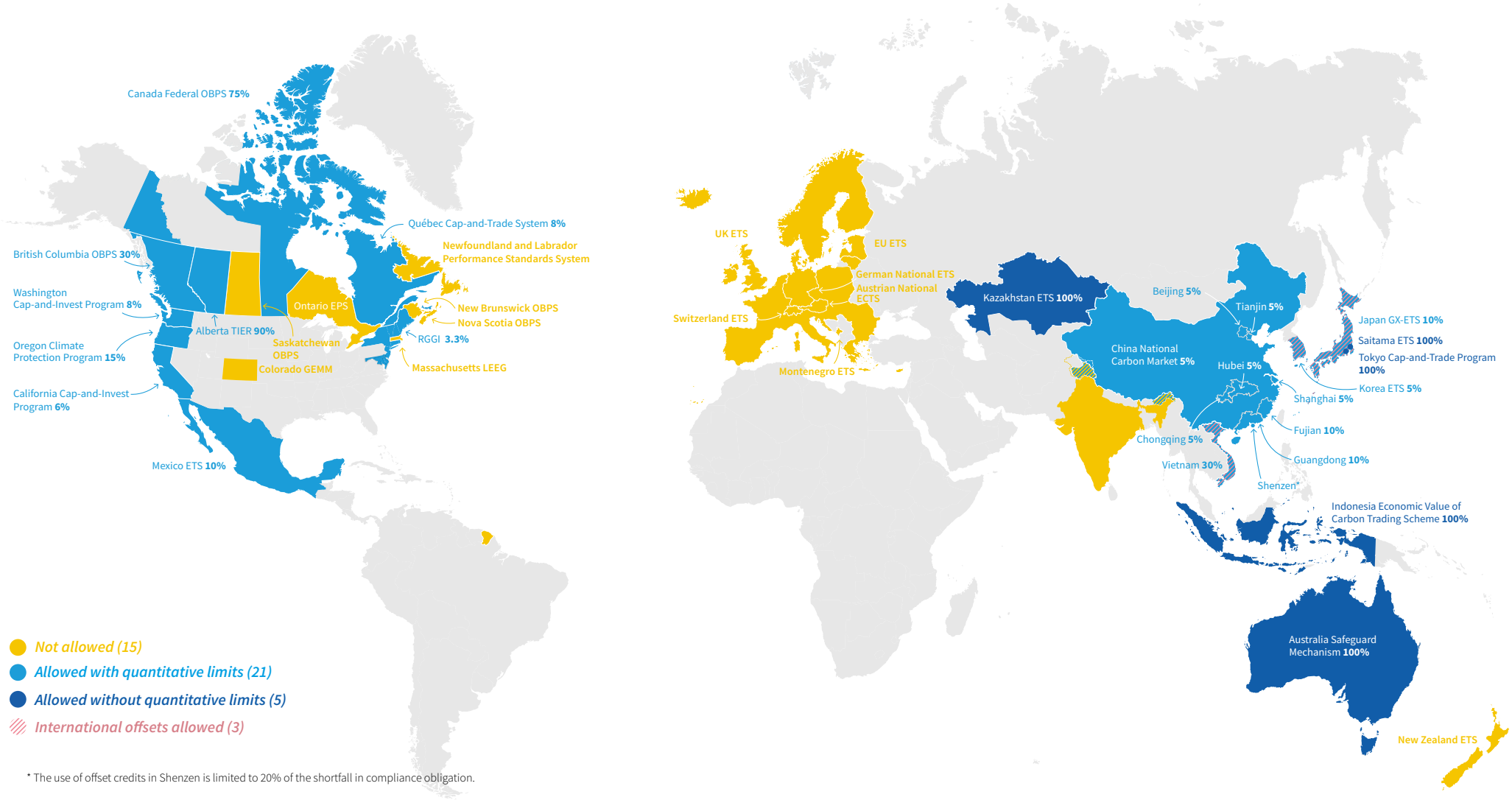
Currently covered by an ETS

1 The projected emissions element of the graphic includes estimated emissions coverage for the India Carbon CTS scope expansion to iron and steel sector emissions, which is expected later in 2026.

OFFSET CREDIT ELIGIBILITY IN EMISSIONS TRADING SYSTEMS

EMISSIONS TRADING SYSTEMS INCREASINGLY FEATURE DOMESTIC OFFSET CREDITS

The graphic groups ETSs currently in force by their approach to offset credit use. Jurisdictions that do not allow offset credits for compliance are depicted in yellow, those allowing the use of offset credits with quantitative limits in light blue, and those allowing unlimited offset credits in dark blue. Overlaid pink stripes indicate that international offset credits are also permitted. The percentages next to each system name indicate the share of compliance obligations that can be met using offsets. See “Notes on Methods and Sources” for further details.

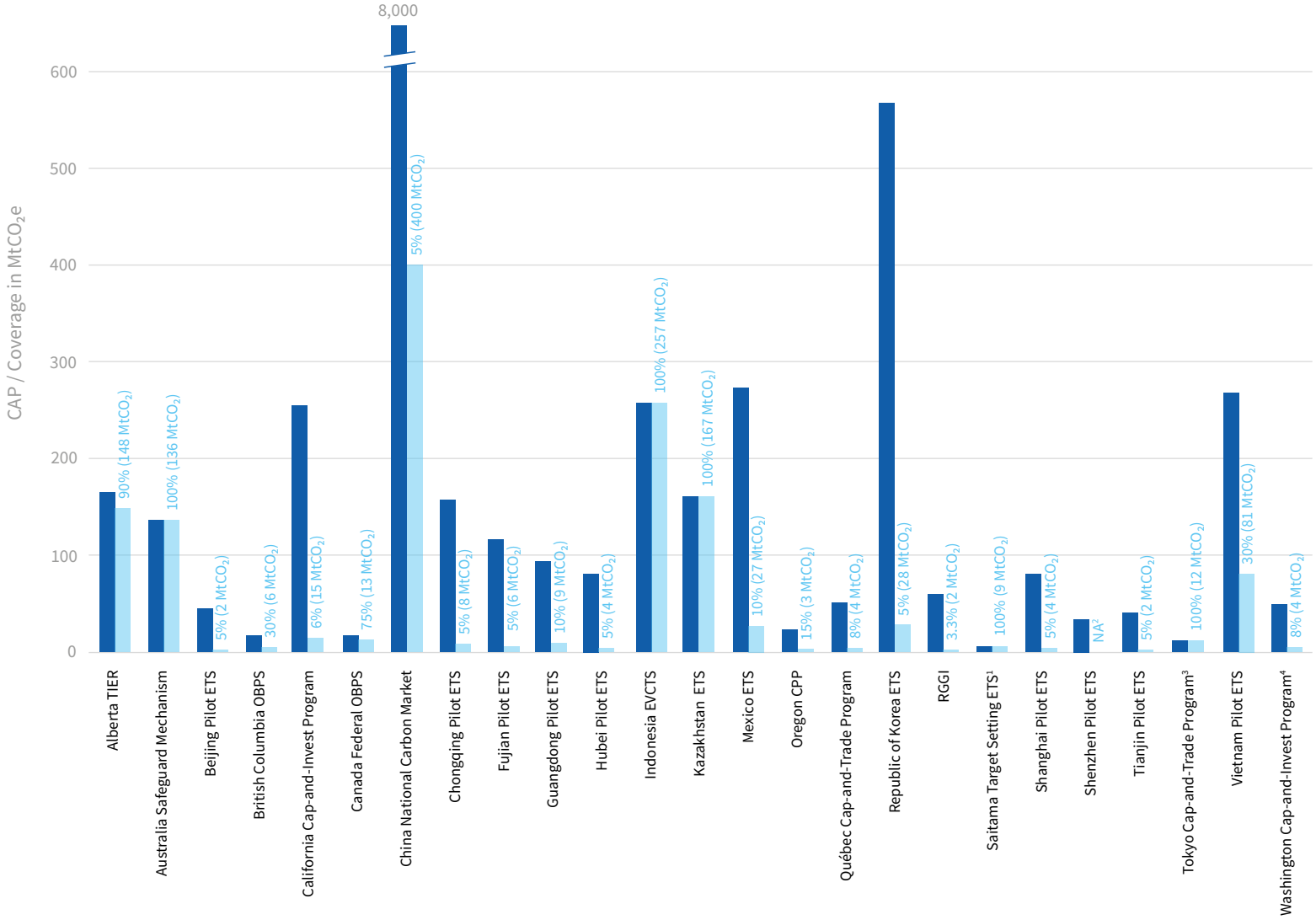


* The use of offset credits in Shenzen is limited to 20% of the shortfall in compliance obligation.

OFFSET CREDIT DEMAND POTENTIAL IN EMISSIONS TRADING

A COMPARATIVE LOOK AT OFFSET CREDIT DEMAND POTENTIAL

The graphic depicts the maximum amounts of offset credits allowed in ETSs that permit offset credit use for compliance in 2026. The dark blue bars represent the cap or emissions coverage of each system. The light blue bars indicate the maximum permitted percentage of those emissions that could be covered using offset credits. The absolute values next to the percentages indicate the credit demand potential of each ETS. This is a theoretical demand potential, not actual use. Actual shares or amounts met using offset credits are not shown.



1 In Saitama, quantitative limits apply for "outside Saitama" credits.
2 The use of offset credits in Shenzen is limited to 20% of the shortfall in compliance obligation.
3 In Tokyo, quantitative limits apply for "outside Tokyo" credits.
4 Up to 5% of the compliance obligation can be met with offsets. An additional 3% can be met from projects located on federally recognized tribal land.

03 FACTSHEETS

03 FACTSHEETS

Europe and Central Asia

North America

Latin America & the Caribbean

Asia-Pacific

03 FACTSHEETS

Europe and Central Asia

AUSTRIA

AUSTRIAN NATIONAL EMISSIONS CERTIFICATE TRADING SYSTEM

- National carbon pricing introduced in 2022, covering fuel consumption upstream
- Fixed price per tonne CO_2e from 2022 to 2027
- Replacement of the national ETS by EU ETS 2 foreseen for January 2028

ETS DESCRIPTION

Austria launched its national emissions certificate trading system (*Nationales Emissionszertifikatehandelsgesetz* – NEHG) for fossil fuels not already covered by the EU ETS in October 2022.

Although the NEHG does not establish a carbon tax, the carbon pricing instrument follows in central parts the logic of existing energy taxes (fuel tax, coal tax, and natural gas tax). Thus, if a certain event is taxable under the existing energy taxes regime, an obligation to buy allowances arises under the NEHG. Taxable events are the production, import, or release of energy products from a tax warehouse in Austria or the supply of coal and natural gas to consumers. In practice, only a limited number of energy distributors and oil companies are subject to the NEHG, while the majority of (end) consumers are not directly liable.

The NEHG covers emissions outside the EU ETS 1, encompassing predominantly emissions in the buildings and transport sectors. Between 2022 and 2027, the system will operate with an annually increasing fixed price and without a cap.

The NEHG will end in December 2027 and be replaced by the EU ETS for buildings and road transport (EU ETS 2) from January 2028, constituting a one-year extension following the postponement of the EU scheme to January 2028.

YEAR IN REVIEW

In June 2024, Austria revised its NEHG (BGBl. I Nr. 60/2024) to prepare for the EU ETS 2, which will replace the national ETS. From 2025 onwards the EU ETS 2 methodology (MRV) is applicable for the national NEHG.

The previously planned market phase in 2026 is no longer foreseen. During the transition phase from 2025 onwards, entities report under both NEHG and EU ETS 2, with synchronized reporting requirements, deadlines, and calculation methods.

Austria enhanced relief measures in June 2024, merging carbon leakage and hardship provisions to support energy-intensive companies. The total relief budget is capped at EUR 736 million.

In January 2025, the fixed price was increased to EUR 55 (USD 62) per tonne of CO_2e as provided for in the statutory price path. The Regional Climate Bonus was discontinued from 2025 onwards as part of fiscal consolidation measures. In 2024, approximately EUR 1.96 billion was redistributed to consumers via this mechanism.

In November 2025, the EU ETS 2 was postponed by one year to January 2028. As a result, Austria's NEHG will continue through 2027. During the extended transition period, entities will continue reporting under both systems. Reporting requirements, deadlines, and calculation methods for the NEHG and EU ETS 2 have been synchronized to streamline compliance.

In force
Under development
Under consideration

SECTORS

- INDUSTRY
- BUILDINGS
- TRANSPORT
- FUEL USE IN AGRICULTURE AND/OR FORESTRY

CAP OR TOTAL EMISSIONS LIMIT

No cap

GREENHOUSE GASES

CO_2

OFFSET CREDITS:

Not allowed

ALLOCATION

Fixed price until 2027

AVERAGE 2025 PRICES

Fixed price: EUR 55 (USD 62)

TOTAL REVENUE

EUR 3.4 billion (USD 3.8 billion) since the beginning of the program
EUR 1.4 billion (USD 1.6 billion) in 2025

EMISSIONS & TARGETS OF AUSTRIA

OVERALL GHG EMISSIONS (including indirect CO_2, excluding LULUCF), **2023**
(in $MtCO_2e$, share of total in %)

Energy	44.5	65%
Industrial processes	15.5	23%
Agriculture	7.5	11%
Waste	1.3	2%
Total	**68.7**	

Energy industries	7.3	11%
Manufacturing industries and construction	9.6	14%
Transport	19.8	29%
Commercial, institutional, and residential	6.3	9%
Other energy	1.4	2%

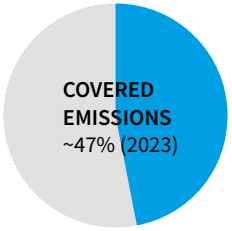
GHG REDUCTION TARGETS

By 2030: 48% reduction from 2005 ("EU Regulation 2023/857")
By 2040: Climate neutrality (foreseen to be established in the current legislative program; not legally binding)

ETS COVERAGE & PHASES

COVERED EMISSIONS 2023

Verified ETS emissions: 32 $MtCO_2e$



PHASES

PHASE 1: Six years (2022 to 2027), including:
Introduction phase (2022 to 2024)
Transition phase (2024 to 2027)

CAP OR TOTAL EMISSIONS LIMIT

There is no cap foreseen in the NEHG.

SECTORS AND THRESHOLDS

TYPES OF FUELS COVERED: The NEHG covers all distributors (producers/importers) of fossil fuels used in transport, buildings, and agriculture, as well as in small industries. This essentially concerns the following fossil fuel sources: petrol, gasoil (diesel), heating oil, natural gas, liquefied gas, coal, and kerosene. Fuels blended with biogenic ones receive a lower emissions factor than purely fossil fuels.

Aviation and navigation in international waters as well as certain fuels like sustainable LNG are exempt from the surrender of allowances during the fixed-price phase.

Provisions are in place to avoid unnecessary double burdens for installations covered by the EU ETS 1. Emissions that arise from fuel delivered to and used in an EU ETS-covered installation must be reported by said installation and can then be exempted from the NEHG. Exemption can be granted in advance, although a subsequent refund is also possible.

The NEHG also foresees compensatory measures for economic sectors that are at particular risk of relocating their production to countries with less stringent climate policies (carbon leakage) and for firms facing additional costs in the agricultural and forestry sectors. In June 2024, Austria enhanced relief measures for industries, merging carbon leakage and hardship provisions to support energy-intensive companies. Applications for 2022 and 2023 were accepted until November 2024, and for 2024 until June 2025.

INCLUSION THRESHOLDS: Trading participants that emit less than one tCO_2e emissions per year are exempt from the obligations.

POINT OF REGULATION

Upstream

TYPE OF ENTITIES

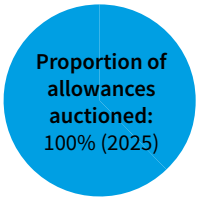
Entities releasing fuels for consumption (e. g., fuel distributors)

NUMBER OF ENTITIES

280 entities (2025)

ALLOWANCE ALLOCATION & REVENUE

ALLOWANCE ALLOCATION



Introduction and transition phases (2022 to 2027): The number of available allowances is unlimited. Allowances are sold for an annually increasing fixed price:
2022: EUR 30 (USD 32.47)
2023: EUR 32.50 (USD 35.18)
2024: EUR 45 (USD 48.70)
2025: EUR 55 (USD 62.15)
2026: EUR 55[1] (USD 62.15)[2]
2027: EUR 55[1] (USD 62.15)[2]

USE OF REVENUES

General budget

Revenues were recycled to consumers via the Regional Climate Bonus from 2022 to 2024 (EUR 1.96 billion redistributed in 2024). The Climate Bonus was abolished in 2025; revenues now flow into the general federal budget.

FLEXIBILITY & LINKING

BANKING AND BORROWING

Banking is not allowed during the introduction and transition phases.
Borrowing is not allowed.

OFFSET CREDITS

The use of offset credits is not allowed.

LINKS WITH OTHER SYSTEMS

The Austrian National Emission Certificate Trading System is not linked with any other system.

The NEHG will be replaced by the EU ETS 2 from 2028 (see the 'EU ETS 2' factsheet for more).

OTHER CARBON PRICING INSTRUMENTS IN THE JURISDICTION

ETS (supranational): EU ETS 1

COMPLIANCE

COMPLIANCE MECHANISM

Covered entities must surrender one compliance unit (NEHG national emission allowance) per tCO_2e emitted for all their covered emissions.

COMPLIANCE PERIOD

One calendar year. Covered entities have until the end of July to surrender allowances to cover the reported emissions of the previous year.

MRV

FRAMEWORK: The "*Nationales Emissionszertifikatehandelsgesetz 2022* (NEHG 2022), BGBl. I Nr. 10/2022", which established Austria's national emissions trading system, sets out MRV obligations including monitoring plans, annual emissions reporting, verification requirements, and compliance deadlines. The system is administered by the Federal Ministry of Finance with the competent authority "Office for National Emissions Allowance Trading" at the Austria Customs Office.

MONITORING: The emissions report must be based on a previously approved monitoring plan. Every modification to the monitoring plan must be communicated to the competent authority by the end of each calendar year. During the introductory phase, a simplified registration and emissions reporting regulation applied. In this phase, no monitoring plan needed to be submitted.

REPORTING: Annual self-reporting in the form of an emissions report ("*Treibhausgas-emissionsbericht*") based on electronic templates is to be submitted by the end of June. During the introductory phase, a simplified emissions report, which is based on the already available data of the energy tax declarations, was submitted.

VERIFICATION: The emissions report must be accompanied by a verification report by an independent verifier, a requirement which was absent during the introductory phase.

1 The price for 2026 and 2027 has not been legally established. Under the current legal framework, the 2025 price will therefore remain in effect until the start of EU ETS 2 in January 2028.
2 USD conversion based on 2025 IMF exchange rate; actual future exchange rates may differ.

PENALTIES AND ENFORCEMENT

Entities must pay an increased certificate price for each tCO_2e for which no allowance has been surrendered, set at two times the fixed price, in addition to a financial penalty.

For other instances of non-compliance, e. g., misreporting, or late reporting, entities can be fined.

MARKET REGULATION

MARKET DESIGN

The NEHG will no longer enter into a market phase. Hence no provisions are expected for market design.

MARKET STABILITY PROVISIONS

PRICE STABILITY MECHANISM

Instrument type: Price-based instrument

Functioning: Introduced as an accompanying measure for the introduction of the national ETS. If the average energy price increases by more than 12.5% within one calendar year, the allowance price increase for the next year will be half of the initially planned increase. Likewise, if the average energy price decreases by more than 12.5%, the allowance price increase will add 50% in the following year.

Triggers: In 2022 the trigger was hit and therefore the price in 2023 changed to EUR 32.50 instead of EUR 35. In 2024 and 2025, the changes in energy prices did not trigger the price stability mechanism. Thus, allowance prices remained on their foreseen path.

OTHER INFORMATION

INSTITUTIONS INVOLVED

Austrian Federal Ministry of Finance (BMF): Responsible for establishing the regulatory framework of the ETS.

Office for National Emissions Allowance Trading at the Austria Customs Office: Implementing authority, e. g., responsible for receiving emissions reports.

EVALUATION/ETS REVIEW

The NEHG has already been amended and aligned with the EU ETS 2 to ensure a smooth transition. However, adjustments to the corresponding regulations are still forthcoming.

The current framework ensures that the market phase is aligned with Austria's climate targets and supports the transition to the EU ETS 2, covering the buildings and road transport sectors. Additionally, provisions regarding exemptions for certain sectors are addressed within the existing legislative framework.

Compared to the 2019 baseline, the sectors covered by the NEHG achieved cumulative emissions savings of 7.1 $MtCO_2e$ over the period 2020 to 2024.

For the calculations, energy-related GHG emissions in the non-ETS sectors of transport, buildings, energy use in agriculture, energy and industry were compared to the 2019 baseline year.

However, this reduction cannot be attributed solely to the NEHG, as it is influenced by multiple causal factors.

REGULATORY FRAMEWORK

→ **National Emissions Trading Act 2022 – NEHG 2022**
→ **Amendments to National Emissions Trading Act 2022 adopted in 2024**
→ **Eco-social tax reform 2022**

EUROPEAN UNION

EUROPEAN UNION EMISSIONS TRADING SYSTEM (EU ETS 1)

- The oldest ETS in force and the largest, in terms of trading volume and value
- By 2024, covered emissions were around 50% below 2005 levels
- Covered emissions are on track to achieve the 2030 target of a 62% cut
- Annual emission reduction from stationary ETS installations in 2024 of 5.7%

ETS DESCRIPTION

Operational since 2005, the European Union Emissions Trading System (EU ETS 1) is the oldest cap-and-trade system in force and the largest in terms of the trading volume and value. It remains a cornerstone instrument of the EU's policy framework to combat climate change and reduce GHG emissions cost-effectively.

Until 2023, the EU ETS 1 covered emissions from electricity and heat generation plants, manufacturing installations in Europe, and aircraft operators flying between airports in the European Economic Area (EEA) and from the EEA to Switzerland and to the UK. In January 2024, it was extended to cover emissions from maritime transport and in aviation, emissions from most flights to and from the EU's nine outermost regions as well as departing flights from these outermost regions to Switzerland and the UK. Overall, the EU ETS 1 covers around 35%[6] of the bloc's total emissions, with coverage declining compared to the previous year as a result of significant emissions reduction in the power sector in 2023.

The EU ETS 1 is currently in its fourth trading phase (2021 to 2030). Every year, covered entities must surrender allowances for their emissions under the EU ETS 1. Auctioning is the main method of distributing allowances, with free allocation, based on benchmarks, used to address the risk of carbon leakage.

The EU ETS 1 was revised in 2023 in the context of the "European Green Deal" to align the system with the EU's 2030 climate target of at least a 55% net emissions reduction compared to 1990 levels. The revision is now in force and included:

- an increased ambition and expanded scope of the EU ETS 1, to maritime transport, and introduced a new, separate emissions trading system for buildings, road transport and additional sectors[7] (EU ETS 2, to start in 2028)[8];
- a strengthened the Market Stability Reserve (MSR);
- an update to the EU ETS 1 regarding aviation;
- updated rules for monitoring and reporting of emissions from maritime transport;
- the creation of the Social Climate Fund (starting in 2026) to complement the new EU ETS 2; and
- the establishment of a Carbon Border Adjustment Mechanism (CBAM) to address the risk of carbon leakage from specific sectors under the EU ETS 1 (to gradually replace free allocation).

1 The list of activities to which the EU ETS Directive (2003/87/EC) applies, and their respective thresholds, is provided in Annex I of Directive 2003/87/EC.
2 Within the European Economic Area (EEA) and on routes from the EEA to Switzerland and to the UK.
3 Emissions from maritime transport (ships of 5,000 gross tonnage and above) occurring between two EEA ports and when ships are in EEA ports, as well as half of emissions from voyages to or from EEA ports that start or end outside the EEA.
4 Includes revenues from Iceland, Liechtenstein, Norway, and the UK (until 2020), as well as of the Innovation and Modernisation Funds funded by the EU ETS.
5 Includes revenues from Iceland, Liechtenstein, Norway, and Northern Ireland, as well as of the Innovation and Modernisation Funds funded by the EU ETS
6 Based on 2023 data. Preliminary data for 2024 suggest a further decrease to 33%.
7 Mainly industry sectors not covered under the existing EU ETS.
8 See EU ETS 2 factsheet.

SECTORS[1]

POWER
AVIATION[2]
INDUSTRY
MARITIME[3]

CAP OR TOTAL EMISSIONS LIMIT

Absolute cap
1,185.4 $MtCO_2e$ (2026, electricity and heat generation, manufacturing and maritime transport)
26.2 $MtCO_2e$ (2026, aviation)

GREENHOUSE GASES

CO_2, N_2O, HFCs, PFCs, CH_4

OFFSET CREDITS

Not allowed

ALLOCATION

Free Allocation: Fixed Benchmarking
Auctioning

AVERAGE 2025 PRICES

Average auction price: EUR 73.43 (USD 82.97)
Average secondary market price: EUR 74.35 (USD 84.01)

TOTAL REVENUE

EUR 265.7 billion[4] (USD 297.1 billion) since the beginning of the system
EUR 43.2 billion[5] (USD 48.9 billion) in 2025

MEMBER STATES

All EU Member States, plus Iceland, Liechtenstein and Norway (plus power generators in Northern Ireland)

Since June 2023, EU Member States are obliged to use all relevant ETS revenue (or an equivalent financial value) to support climate action and energy transformation. By the end of 2025, the EU ETS 1 has raised a cumulative total of EUR 265.7 billion (USD 297.1 billion) since its inception.

YEAR IN REVIEW

The EU ETS 1 in 2024 saw a 5.7% year-on-year reduction in emissions from stationary sources. This reduction was largely driven by the power sector, where renewable electricity production (primarily from wind and solar) increased substantially, coupled with the decrease in both coal and gas. With this development, emissions from installations at the start of 2025 were around 50% below 2005 levels and well on track to achieve the 2030 target of a 62% reduction. Emissions from aviation under the EU ETS 1 continued to increase in 2024, partially due to broader geographic coverage.

In 2025, the compliance obligation for maritime transport operators commenced. Shipping companies must surrender allowances equal to 40% of their verified 2024 CO_2 emissions and 70% for 2025. From 2026 onwards, the scope of covered emissions in the sector expands to include CH_4 and N_2O.

In aviation, free emission allowances for operators were down to 50% in 2025 and are fully phased out as of 2026. In parallel, a per-tonne financial support for sustainable aviation fuels (SAF) was introduced to incentivise uptake while free allocations are phased out.

Since 2020, the EU ETS 1 is linked with the Swiss ETS. In May 2025, the EU and the UK announced their intention to link their respective ETSs. Subsequently, the EU Council granted the Commission a negotiating mandate, authorising it to start formal talks with the UK on an ETS linking agreement.

From 2026, the definitive stage of the EU's CBAM starts. The mechanism is introduced gradually alongside the phase-out of free allowances in CBAM-covered sectors in the EU ETS 1. By September 30, 2027, EU importers will have to surrender CBAM certificates for 2.5% of the GHG emissions embedded in relevant goods imported in 2026.

EMISSIONS & TARGETS OF THE EUROPEAN UNION

OVERALL GHG EMISSIONS (including indirect CO_2, excluding LULUCF), **2023**[9]

(in $MtCO_2e$, share of total in %)

Energy	2364.0	76%
Industrial processes	264.8	9%
Agriculture	364.9	12%
Waste	108.5	3%
Other (indirect CO_2)	3.4	0%
Total (EU-27)	**3,105.6**	

Energy industries	699.6	23%
Manufacturing industries and construction	363.4	12%
Transport	794.4	26%
Commercial, institutional, and residential	370.2	12%
Other energy	136.4	4%

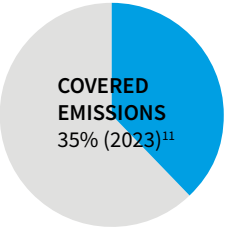
GHG REDUCTION TARGETS

By 2030: Reduce net emissions to at least 55% below 1990 GHG levels ("European Climate Law")
By 2040: Reduce net emissions to 90% below 1990 GHG levels (European Climate Law, amended)[10]
By 2050: Net-zero (European Climate Law)

ETS COVERAGE & PHASES

COVERED EMISSIONS 2023

Verified ETS emissions: 1,115 $MtCO_2e$



PHASES

PHASE 1: 3 years (2005 to 2007)
PHASE 2: 5 years (2008 to 2012)
PHASE 3: 8 years (2013 to 2020)
PHASE 4: 10 years (2021 to 2030)

9 National emissions for the EU-27 reported to the UNFCCC and to the EU in May 2025 under the "EU Governance Regulation".
10 Includes a contribution of high-quality international credits under Article 6 of the Paris Agreement.
11 Share calculated based on overall GHG emissions for EU-27 plus Lichtenstein, Iceland, and Norway.

CAP OR TOTAL EMISSIONS LIMIT

An absolute cap limits the total emissions allowed in the system and is fixed ex-ante. It is set to reduce covered sectors' emissions by 62% compared to 2005 levels by 2030.

PHASE 1 and PHASE 2: The cap was calculated bottom-up, based on the aggregation of the national allocation plans of each Member State. Phase 1 started with a cap of 2,096 $MtCO_2e$ in 2005; Phase 2 with a cap of 2,049 $MtCO_2e$ in 2008.

PHASE 3:
Installations: A single EU-wide cap was calculated based on emissions monitoring and set at 2,084 $MtCO_2e$ in 2013. It was reduced annually by a linear factor of 1.74% (applied to the midpoint of 2008 to 2012 baseline emissions). This translated into a year-on-year reduction of around 38 million allowances and resulted in a cap of 1,816 $MtCO_2e$ in 2020.

Aviation: Included in the EU ETS 1 in 2012, with a cap calculated separately. Legally, the system covers all outgoing and incoming flights to the EEA. The 2012 cap for aviation amounted to 221 $MtCO_2e$ (95% of 2004 to 2006 emissions). In 2013, however, the EU temporarily limited ETS obligations to flights within the EEA to support the development of a global market-based measure to reduce aviation emissions by the International Civil Aviation Organization (ICAO). The number of aviation allowances put into circulation in 2013 to 2016 was reduced to 38 million allowances annually. This 'stop-the-clock' limited scope of the EU ETS for aviation was extended until the end of 2026.

PHASE 4:
From Phase 4, the linear reduction factor applies annually to the overall cap. The factor is set at 2.2% per year (of 2008 to 2012 baseline emissions) for the period 2021 to 2023, 4.3% for 2024 to 2027 and 4.4% from 2028. In addition, the cap is also reduced in two steps, by 90 million allowances in 2024 and 27 million allowances in 2026.

Installations: A single EU-wide cap reduced annually. Following the 2023 ETS revision, the cap in 2026 is determined to be 1,185 $MtCO_2e$. From 2021, the UK was no longer part of the EU ETS (except for electricity generators in Northern Ireland).

Maritime: The 2026 cap was increased by 2.4 million allowances to reflect the inclusion of CH_4 and N_2O emissions into the EU ETS scope.

Aviation: The aviation cap in 2026 amounted to 24.9 $MtCO_2e$.

From Phase 4, a Member State may cancel allowances from their auction share if they take additional policy measures that result in a closure of electricity generation capacity. The quantity of allowances cancelled shall not exceed the average verified emissions of the installation from five years preceding the closure.

SECTORS AND THRESHOLDS

The EU ETS 1 scope in terms of activities and GHGs is specified in Annex I and Annex II of the "ETS Directive".

PHASE 1: Power stations and other combustion installations with >20 MW thermal rated input (except hazardous or municipal waste installations), industry (various thresholds) including oil refineries, coke ovens, and iron and steel plants, as well as production of cement, glass, lime, bricks, ceramics, pulp, paper, and cardboard.

PHASE 2: Several countries included NOx emissions from the production of nitric acid. The EU ETS 1 also expanded to include Iceland, Liechtenstein, and Norway.

Aviation: Emissions from international aviation were included in the EU ETS 1 in 2012 (>10,000 tCO_2/year for commercial aviation; >1,000 tCO_2/year for non-commercial aviation since 2013). However, the EU temporarily limited the scope of the EU ETS 1 for aviation to flights within the EEA. Exemptions for operators with low emissions were introduced.

PHASE 3: Carbon capture and storage installations, production of petrochemicals, ammonia, nonferrous and ferrous metals, gypsum, aluminum, as well as nitric, adipic, and glyoxylic acid (various thresholds) were added to the scope.

Aviation: In 2017, the limited scope for aviation was extended until 2023 to support the development of a global measure for aviation emissions under ICAO. Under the "Linking Agreement" between the EU and Switzerland, from 2020, the EU ETS 1 covers emissions from outgoing flights to Switzerland.

PHASE 4: Amendments introduced in view of the UK's departure from the EU and in the 2023 revision of the EU ETS 1.

Power and industry: The scope of ETS and benchmarks used for free allocation was broadened from 2024 to remove barriers for the deployment of new technologies such as green hydrogen or hydrogen-based steel.

Aviation: Under the "Trade and Cooperation Agreement" between the EU and the UK, the EU ETS 1 applies to emissions from flights departing from the EEA to the UK from 2021 (the UK ETS applies to flights departing to EEA airports).

Emissions from most flights to and from the EU's nine outermost regions as well as from departing flights from these regions to Switzerland and the UK were added to the scope from 2024.

Maritime: From 2024, emissions from all large ships (of 5,000 gross tonnage and above) entering EU ports are covered by the EU ETS 1, regardless of the flag they fly, covering:
- 50% of emissions from voyages starting or ending outside the EU;
- 100% of emissions that occur between two EU ports and when ships are in EU ports.

Initially, the scope extension to maritime transport covers only CO_2 emissions. From 2026, CH_4 and N_2O emissions will also be covered.

The obligation for maritime companies to surrender allowances for their emissions is being gradually phased in.
- 2025: for 40% of emissions reported in 2024;
- 2026: for 70% of emissions reported in 2025;
- 2027 onward: for 100% of emissions reported in 2026 and later years.

To ensure environmental integrity during the phase-in, Member States will cancel the number of allowances equivalent to the difference between the surrendered allowances and the verified emissions in 2024 and in 2025.

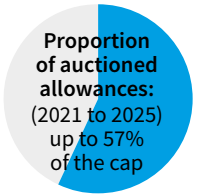
POINT OF REGULATION
Point source

TYPE OF ENTITIES
Installations (energy and industry); companies (aviation and maritime transport)

NUMBER OF ENTITIES
8,704 stationary installations, 393 aircraft operators, 3,313 shipping companies (2024)

ALLOWANCE ALLOCATION & REVENUE

ALLOWANCE ALLOCATION



PHASE 1: Allocation was based on Member States' national allocation plans. Allowances were allocated through grandparenting. Some Member States used auctioning and some used benchmark-based allocation.

PHASE 2:
Auctioning: Eight Member States (Germany, United Kingdom, the Netherlands, Austria, Ireland, Hungary, Czechia, and Lithuania) held auctions corresponding to ~3% of the total allowance allocation.

Free allocation: ~90% of allowances were allocated for free.

PHASE 3:
Auctioning: The main method of distributing allowances was via auction, accounting for up to 57% of the cap. Of the share of allowances to be auctioned, 88% were distributed to Member States based on verified 2005 or average 2005 to 2007 emissions; 10% were allocated among 16 lower-income Member States under the solidarity provision; and the remaining 2% were allocated between the Member States that had reduced their emissions by at least 20% compared to the applicable base year under the Kyoto Protocol.

Free allocation: A significant volume of allowances was allocated for free to address the risk of carbon leakage, based on sector-specific performance benchmarks. As the demand for free allowances exceeded the volume of allowances available, the free allocation of each installation was subject to a uniform cross-sectoral correction factor — which was revised in 2017.

Power: Auctioning, with an optional transitional free allocation for the modernisation and diversification of electricity generation in ten lower-income Member States. At the end of Phase 3, eligible Member States could decide to continue using this option in Phase 4, monetize remaining allowances, or transfer them to the Modernisation Fund, created under the EU ETS 1 in 2018.

Industry: Free allocation based on sector-specific performance benchmarks, which reflect an average emissions intensity per unit of product of the most efficient 10% of installations in each sector. The European Commission established 54 benchmarks in 2011, using 2007 and 2008 activity data and literature sources (when data was missing). Sectors deemed at risk of carbon leakage received free allocation at 100% of the relevant benchmark. Sub-sectors deemed not at risk of carbon leakage had free allocation reduced gradually from 80% of the respective benchmark in 2013 to 30% by 2020.

The carbon leakage risk was assessed against emissions intensity and trade exposure:
- direct and indirect cost increase >30%; or
- non-EU trade intensity >30%; or
- direct and indirect cost increase >5% and trade intensity >10%.

Cost intensity was determined by the formula:
[Carbon price × (direct emissions × auctioning factor + electricity consumption × electricity emission factor)]/ gross value added

Trade intensity was determined by the formula:
(imports + exports)/(imports + production)

New Entrants' Reserve (NER): 5% of the cap for Phase 3 was set aside to assist new installations or to cover installations whose capacity significantly increased since their free allocation had been determined. 300 million allowances from the reserve were allocated to the NER300, a large-scale funding program for innovative low-carbon energy demonstration projects.

Aviation: 15% of allowances were auctioned and 82% were allocated to aircraft operators for free. The remaining 3% constituted a special reserve for new entrants and fast-growing airlines. The number of allowances put into circulation for the aviation sectors was reduced to reflect the temporary limitation of the scope of the EU ETS 1 to flights within the EEA.

PHASE 4:
Auctioning: The main method of distributing allowances remains auctioning, accounting for up to 57% of the cap. Of the share of allowances to be sold, 90% are distributed to Member States based on their share of verified emissions, with 10% distributed among the lower-income Member States under the solidarity provision.

Free allocation: A significant volume of allowances is allocated for free to address the risk of carbon leakage, based on sectors-specific performance benchmarks. Benchmark values are updated twice in Phase 4 to reflect technological progress in different sectors. In 2021, the European Commission updated benchmark values for the first time[12] and they applied for 2021 to 2025. The values are adjusted for technological progress on a yearly basis. An annual reduction rate is determined for each benchmark. For the steel sector, which faces high abatement costs and leakage risks, a fixed reduction rate applies.

The uniform cross-sectoral correction factor for the adjustment of free allocation is one for 2021 to 2025.

The Phase 4 cap includes a buffer of more than 450 million allowances, earmarked for auctioning, which can be made available if the initial free allocation volume is fully absorbed (thereby avoiding the need to apply the cross-sectoral correction factor).

In 2026, a second allocation period of the Phase 4 starts.

Free allocation for 2026 to 2030 will become conditional on the implementation of energy efficiency measures (based on audits or energy management systems) and of carbon neutrality plans for the worst performing installations, in order to incentivize decarbonization.

Power: Auctioning, with an optional transitional free allocation for the modernization and diversification of electricity generation in ten lower-income Member States. Three of the eligible Member States decided to continue using this option in Phase 4, which could have been used until the end of 2024. After this time, any leftover allowances were either added to a Member State's share of allowances to be auctioned or its share of the Modernisation Fund.

Industry: Updated benchmark values that apply for 2021 to 2025 were calculated based on activity data for installations over 2016 to 2017, supplied by Member States. The updated values were compared to the original benchmarks to determine the reductions to be applied over the 15-year period between 2007/08 and 2022/23. Benchmarks could be reduced between 3% and 24% over this period. In total, 31 out of 54 benchmarks have been reduced by the maximum rate of 24%.

The update to the benchmarks for the period from 2026 to 2030 is based on increased annual reduction rates, which are intended to stimulate further industrial transformation. As of 2026, the minimum rate increases from 0.2% to 0.3% per year, and the maximum rate from 1.6% to 2.5%.

There are revised rules covering adjustments to free allocation when an installation makes a significant change to its production. These rules apply from Phase 4. The threshold for adjustments is a 15% increase or decrease in production. Adjustments to free allocation are issued based on yearly production data reports that operators submit to national competent authorities. Adjustments to the level of free allocation are made from the New Entrants' Reserve.

Carbon leakage rules: The third carbon leakage list, adopted in February 2019, applies for 2021 to 2030. The list includes a reduced number of sectors classified at risk of carbon leakage. Free allocation for other sectors will be discontinued by 2030 (except for district heating).

Carbon leakage is assessed against a composite indicator of trade intensity and emissions intensity, according to the following criteria:

Trade intensity x emissions intensity > 0.2

Trade intensity x emissions intensity > 0.15 but < 0.2; qualitative assessment will follow based on abatement potential, market characteristics, and profit margins.

12 Revised **benchmark values** for free allocation of emission allowances for 2021 to 2025.

Emissions intensity is determined by:
[direct emissions + (electricity consumption x electricity emission factor)]/ gross value added

Trade exposure is determined by:
(imports + exports)/(imports + production)

Carbon Border Adjustment Mechanism: Free allocation to specific sectors will be gradually phased out from 2026 to 2034, in parallel to the phase-in of the EU's CBAM for third-country imports. Those sectors are iron and steel, cement, aluminum, fertilizers and hydrogen. The mechanism applies equally to imports from all countries outside the EU (except Liechtenstein, Iceland and Norway as they are participating in the EU ETS; and Switzerland which has an ETS that is linked with the EU ETS 1).

The transitional, data-collection phase of CBAM started in October 2023, with only reporting obligations but no charges due.

The phase-out of free allocation to sectors covered by the CBAM will take place by applying a 'CBAM factor', which will decrease gradually from 97.5% in 2026, to 51.5% in 2030 and down to 14% in 2033.

The CBAM will also apply to electricity imports.

New Entrants' Reserve (NER): The initial volume of the NER at the start of Phase 4 amounted to 331.3 million allowances. This included unallocated allowances from Phase 3 and 200 million allowances from the MSR.

Aviation: Phase 3 breakdown applied until 2023. Free allocation to aviation will be phased out gradually – reduced to 75% in 2024, 50% in 2025 and to 0% from 2026 onward.

USE OF REVENUES

- Climate mitigation
- Low-carbon innovation
- Assistance for individuals, households, and businesses
- International use

Revenue from the auctioning of allowances under the EU ETS 1 accrues primarily to national budgets. As of June 2023, countries are required to use all ETS revenue (or an equivalent financial value) to support climate action and energy transformation.

EU Member States can also use their EU ETS 1 revenue as aid to certain electricity-intensive industries, to compensate for the additional electricity costs they face as a result of the carbon price pass through. They do so under State aid schemes that are approved by the European Commission. Every year, countries must publish the total compensation amounts paid out, including a breakdown by recipient sector and subsector. The overall spending under a scheme should not exceed 25% of collected EU ETS 1 revenue.

EU Member States report annually to the European Commission on how they used their auction revenue in a preceding year. Of the EUR 16.4 billion spent in 2024, Member States reported having supported projects in energy supply, grids and storage (20%), public transport and mobility (22%), social support and just transition (9%), energy efficiency, cooling and heating in buildings (20%), industry decarbonisation (5%), and road transport (3%) as well as other things (17%), that included international purposes and climate finance supporting climate action in vulnerable third countries.

A share of EU ETS 1 allowances is auctioned to supply the Innovation and Modernisation Funds, which were established to support decarbonization and modernization investments in ETS sectors.

Innovation Fund: One of the world's largest funding programmes for rolling out low- and zero-carbon innovative solutions and technologies in energy, industry and net-zero mobility, funded entirely by the EU ETS 1. The fund provides grants for projects aimed at commercialising innovative low-carbon technologies and bringing industrial solutions to market to decarbonize Europe and support the transition to climate neutrality. It has an estimated budget of EUR 40 billion (USD 45.2 billion) until 2030 (dependent on the carbon price).

Modernisation Fund: A solidarity programme financed by the EU ETS 1. The fund supports lower-income Member States in financing projects that modernize energy systems, improve energy efficiency and help advance a socially just transition to climate neutrality. It has an estimated budget of EUR 56 billion (USD 63.3 billion) from 2021 to 2030 (allocated among the beneficiary Member States according to a fixed key).

FLEXIBILITY & LINKING

BANKING AND BORROWING

Banking is allowed (since 2008).
Borrowing is not allowed.

OFFSET CREDITS

PHASE 1: The use of CDM and Joint Implementation (JI) credits was allowed without limitation. In practice, no offset credits were used in Phase 1.

PHASE 2: The use of offset credits was allowed. 1,058 $MtCO_2e$ of international credits were used.

Qualitative limits: Most categories of CDM/JI credits were allowed, except for LULUCF and nuclear power. Strict requirements applied for large hydropower projects exceeding 20 MW.

Quantitative limits: In Phase 2, operators were allowed to use JI and CDM credits up to a certain percentage limit determined in the respective country's National Allocation Plan. Unused entitlements were transferred to Phase 3.

PHASE 3:
The use of offset credits was allowed with strict limitations.

Qualitative limits: Newly generated international credits (post-2012) had to originate from projects in least developed countries. Credits from CDM and JI projects from other countries were eligible only if registered and implemented before the end of 2012. Projects from industrial gas credits (projects involving the destruction of HFC-23 and N_2O) were excluded regardless of the host country. Credits issued for emission reductions that occurred in the first commitment period of the Kyoto Protocol (2008 to 2012) were no longer accepted after March 2015.

Quantitative limits: The total use of credits for Phase 2 and Phase 3 was capped at 50% of the overall reduction under the EU ETS in that period (~1.6 $GtCO_2e$).

PHASE 4:
The use of offset credits is not allowed.

LINKS WITH OTHER SYSTEMS

The EU ETS 1 and the Swiss ETS have been linked since 2020. A direct link was created between the registries of both systems. It allows regulated entities to transfer allowances from an account in one system to an account in the other system. Allowances that can be used for compliance purposes in one system are recognised for compliance purposes of the other system.

In May 2025, the EU and the UK announced their intention to link their respective ETSs. Subsequently, the EU Council granted the Commission a negotiating mandate, authorising it to start formal discussions with the UK on a linking agreement.

OTHER CARBON PRICING INSTRUMENTS IN THE JURISDICTION

Fuel ETS (national): in Austria and Germany, to be replaced by the EU ETS 2 (see 'EU ETS 2 factsheet').
Carbon tax (national): in Denmark, Estonia, Finland, France, Hungary, Latvia, Netherlands, Norway, Poland, Slovenia, Spain, and Sweden.

COMPLIANCE

COMPLIANCE MECHANISM

Covered entities must surrender one allowance per tCO_2e emitted for all their covered emissions.

COMPLIANCE PERIOD

One calendar year.

MRV

FRAMEWORK: A harmonized framework of MRV and accreditation requirements underpins the EU ETS 1 functioning. Every year, Member States report on implementation of this framework:

- "Monitoring and Reporting Regulation (2018/2066)"
- "Accreditation and Verification Regulation (2018/2067)"
- "Monitoring and Reporting Regulation for maritime transport (2015/757)"

MONITORING: Each installation, aircraft operator and shipping company is required to have an emission monitoring plan, approved by a national competent authority.

REPORTING: Emission reports are submitted annually by the end of March for the preceding calendar year using templates.

Installations for the incineration of municipal waste (above a threshold of 20 MW rated thermal output) must monitor and report their emissions under the EU ETS 1 since January 1, 2024, with no surrender obligation.

VERIFICATION: Emission reports are verified by independent accredited verifiers before the end of March of the following year. Once verified, operators must surrender the equivalent number of allowances by the end of September. Verifiers must be accredited by national accreditation bodies of Member States in accordance with the Accreditation and Verification Regulation (EU) 2018/2067, which is based on the ISO/IEC 17029 and ISO 14065 international standards for GHG validation and verification bodies.

In addition, a dedicated MRV framework for non-CO_2 aviation effects has started to apply from January 2025.

PENALTIES AND ENFORCEMENT

Regulated entities must pay an excess emissions penalty of EUR 100 (USD 113), adjusted for inflation with 2013 as the base year, for each tCO_2e emitted for which no allowance has been surrendered, in addition to buying and surrendering the equivalent number of allowances. The name of the non-compliant operator is also made public. Member States may enforce different penalties for other forms of non-compliance.

MARKET REGULATION

MARKET DESIGN

MARKET PARTICIPATION: Compliance entities and non-compliance entities.

MARKET TYPES:

Primary: Uniform price auctions with single rounds and sealed bids, conducted daily by EEX. Germany has opted out of the common auctioning platform, instead running national auctions through the EEX. Poland has also opted out but continues to participate on the common auction platform at the EEX until further notice.

Secondary: Spot, futures, options, and forward contracts are traded on the secondary markets, both on exchange and over the counter. Besides the EEX, futures are traded on ICE, ENDEX, and Nasdaq.

LEGAL STATUS OF ALLOWANCES:

Classified as financial instruments. The associated derivatives can hence be traded on secondary markets.

MARKET STABILITY PROVISIONS

MARKET STABILITY RESERVE (MSR)

Instrument type: Quantity-based instrument

Functioning: The MSR was created in 2015 as a long-term measure to address a growing surplus of allowances in the EU ETS 1. It adjusts auction volumes according to pre-defined thresholds of the total number of allowances in circulation (TNAC), fostering balance in the EU carbon market and resilience to demand shocks. The MSR started operating in 2019.

Triggers: The Commission publishes the TNAC communication every year.

- If the TNAC is above 1,096 million, 24% of its volume is withdrawn from future auctions and placed into the MSR over a period of 12 months.
- If the TNAC is between 833 million and 1,096 million, to mitigate threshold effects a smaller share of allowances is deducted from auction volumes and placed in the MSR.
- If the TNAC is less than 400 million allowances, 100 million allowances are released from the MSR and auctioned.

Invalidation: From 2023, allowances in the MSR above a certain threshold are invalidated annually. In 2023, the applicable threshold was the 2022 auction volume. From 2024 onward, the applicable threshold is fixed at 400 million allowances.

OTHER INFORMATION

INSTITUTIONS INVOLVED

European Commission: Responsible for establishing the regulatory framework of the EU ETS 1 and centralized administration of the system, e. g., the EU registry.

Competent authorities of all EU Member States as well as Iceland, Liechtenstein, and Norway: implementation, e. g., verifying compliance with MRV and surrender obligations.

EVALUATION/ETS REVIEW

The European Commission publishes annual reports on the functioning of the European carbon market.[13]

The ETS Directive stipulates that the system is kept under review in light of the implementation of the Paris Agreement and the development of carbon markets in other major economies. Three major EU ETS 1 reviews — before Phase 3, before Phase 4, and in the context of increasing the EU 2030 climate target — have been conducted to date.

By the end of July 2026, the European Commission will assess:

- how negative emissions (removals) could be accounted for and covered under the EU ETS 1;
- the feasibility of lowering the 20 MW total rated thermal input thresholds for the activities covered under the EU ETS 1;
- effective accounting and avoidance of double counting of CCU products under the EU ETS 1;
- the feasibility of including municipal waste incineration under the EU ETS 1; and
- the functioning of the EU ETS 1 for aviation, including the functioning of CORSIA.

REGULATORY FRAMEWORK

→ **Directive 2003/87/EC of the European Parliament and of the Council establishing a scheme for GHG emission allowance trading within the Community and amending Council Directive 96/61/EC.**

→ **Decision concerning the establishment and operation of a market stability reserve for the Union GHG emission trading scheme and amending Directive 2003/87/EC (6 October 2015).**

→ **Consolidated Auctioning Regulation: Commission Delegated Regulation 2023/2830 supplementing Directive 2003/87/EC**

→ All other legislation and documentation can be found **here**.

13 The **latest report** was published in 2025, on the EU ETS functioning in 2024.

EUROPEAN UNION

EUROPEAN UNION EMISSIONS TRADING SYSTEM 2 (EU ETS 2)

- New separate ETS due to start in 2028
- Monitoring and reporting of emissions started in 2025
- Part of the revenues to be directed to newly-created Social Climate Fund

ETS DESCRIPTION

In July 2021, the European Commission proposed the "Fit for 55" package of reforms to align EU climate and energy policy with the objectives of the "European Green Deal", most importantly the ambitious 2030 climate target of reducing net emissions to at least 55% below 1990 levels. The package included important amendments to the EU ETS framework, including a proposal to extend emissions trading to new sectors.

A new, separate emissions trading system (EU ETS 2) will be established to cover emissions from fuels used for combustion in buildings, road transport and additional sectors (mainly small industrial emitters not covered by the existing EU ETS 1). The EU ETS 2 will complement other policies of the European Green Deal in the covered sectors, helping Member States achieve their emission reduction targets under the "Effort Sharing Regulation" (Regulation (EU) 2018/842).

The EU ETS 2 is based on the 'cap-and-trade' principle. It will cover emissions upstream, meaning the obligation to surrender allowances will fall on the fuel suppliers rather than end-consumers. The EU ETS 2 cap will be set to bring emissions down by 42% by 2030, compared to 2005 levels. Monitoring and reporting obligations for emissions from the covered sectors started in 2025.

The EU ETS 2 was originally due to become fully operational in 2027. Following a decision by the EU Council and the European Parliament in March 2026, the start date was postponed for one year, to 2028. The decision is pending formal adoption by the co-legislators, which is expected for spring 2026.

Allowances in the EU ETS 2 will be distributed exclusively via auctioning. In the first compliance year, additional auction volume will be front-loaded to ensure a smooth start of the system. The EU ETS 2 will also operate with a dedicated, rule-based market stability reserve (MSR) to mitigate insufficient or excessive supply of allowances to the market. The Commission proposed further changes to the MSR in November 2025 to support a smooth start of the EU ETS 2 and accelerate early investments into sectoral decarbonization (see 'Market Stability Provisions' section). Member States and the European Parliament will have to approve those changes before they come into force.

The EU ETS 2 also has an opt-in option, allowing Member States to unilaterally extend the system to sectors not covered by the Directive in their jurisdiction (such as fuel use in agriculture and forestry), with the Commission's approval. In 2024, the Commission adopted delegated acts to approve individual requests for extension.

A share of revenues from the EU ETS 2 will be used to support vulnerable households and micro-enterprises through a dedicated Social Climate Fund, created as part of the Fit for 55 package. Member States will be required to use the remaining EU ETS 2 revenues for climate action and social measures.

In force

Under development

Under consideration

SECTORS

BUILDINGS

TRANSPORT

INDUSTRY[1]

CAP OR TOTAL EMISSIONS LIMIT

Absolute cap

GREENHOUSE GASES

CO_2

ALLOCATION

Auctioning

MEMBER STATES

All EU Member States, plus Iceland, Liechtenstein and Norway

1 CO_2 emissions from combustion for industries not covered by the existing EU ETS.

The full transposition of the provisions for the new system into EU Member States' law was required for mid-2024. As several countries have yet to finalize the transposition, the Commission is actively collaborating with Member States to support and ensure completion of this process.

EMISSIONS & TARGETS OF THE EUROPEAN UNION

OVERALL GHG EMISSIONS (including indirect CO_2, excluding LULUCF), **2023**[2]
(in $MtCO_2e$, share of total in %)

Energy	2,364.0	76%
Industrial processes	264.8	9%
Agriculture	364.9	12%
Waste	108.5	3%
Other (indirect CO_2)	3.4	<1%
Total (EU-27)	**3,105.6**	

Energy industries	699.6	23%
Manufacturing industries and construction	363.4	12%
Transport	794.4	26%
Commercial, institutional, and residential	370.2	12%
Other energy	136.4	4%

GHG REDUCTION TARGETS

By 2030: Reduce net emissions to at least 55% below 1990 levels ("European Climate Law")
By 2040: Reduce net emissions to 90% below 1990 GHG levels (European Climate Law, amended)[3]
By 2050: Net-zero (European Climate Law)

ETS COVERAGE & PHASES2 3

SECTORS AND THRESHOLDS

The EU ETS 2 covers the emissions from the consumption of fuels used for combustion in the road transport and buildings sectors, as well as in small industrial emitters. This essentially concerns the following fossil fuel sources: petrol, gasoil (diesel), heating oil, natural gas, liquefied gas, and coal.

POINT OF REGULATION

Upstream

TYPE OF ENTITIES

Entities releasing fuels for consumption (e. g., fuel distributors)

ALLOWANCE ALLOCATION & REVENUE

ALLOWANCE ALLOCATION

Allowances in the EU ETS 2 will only be auctioned. A share of EU ETS 2 revenues will be allocated to the Social Climate Fund. All remaining EU ETS 2 allowances will be distributed among Member States to be auctioned, based on the average distribution of emissions in the covered sectors over 2016 to 2018.

USE OF REVENUES

Climate mitigation

Assistance to vulnerable households, transport users and microenterprises

The Social Climate Fund was created alongside the EU ETS 2 to help EU Member States in financing structural measures and investments in energy efficiency and renovation of buildings, clean heating and cooling and integration of renewable energy, as well as in zero- and low-emission mobility solutions. Member States will also have the option of spending part of the resources on temporary direct income support.

All measures and investments will be compiled in national Social Climate Plans. The Fund will pool resources from the auctioning of allowances in the EU ETS 2 as well as of 50 million allowances from the EU ETS 1. Together with a mandatory 25% contribution of the Member States to their Social Climate Plans, the Fund should mobilize at least EUR 86.7 billion (USD 98.0 billion) between 2026 and 2032.

Member States will be required to use their remaining EU ETS 2 revenues for climate and social purposes.

FLEXIBILITY & LINKING

OTHER CARBON PRICING INSTRUMENTS IN THE JURISDICTION

ETS: EU ETS 1
Fuel ETS (national): in Austria and Germany, to be replaced by the EU ETS 2 from 2028.
Carbon tax (national): in Denmark, Estonia, Finland, France, Hungary, Latvia, Netherlands, Norway, Poland, Slovenia, Spain, and Sweden

2 National emissions for the EU-27 reported to the UNFCCC and to the EU in May 2025 under the "EU Governance Regulation".
3 Includes a contribution of high-quality international credits under Article 6 of the Paris Agreement. For more information, see Factsheet on the EU ETS 1.

COMPLIANCE

COMPLIANCE MECHANISM

Covered entities must surrender one compliance unit (allowance) per tonne of CO_2 emitted for all their verified emissions in a compliance period.

COMPLIANCE PERIOD

One year. Deadline for surrendering allowances is end of May in the year following the compliance period.

MRV

FRAMEWORK: A harmonized framework of MRV and accreditation requirements underpins the EU ETS 2 functioning. Key documents are:

- "Monitoring and Reporting Regulation (2018/2066)"
- "Accreditation and Verification Regulation (2018/2067)"

Monitoring and reporting obligations for covered entities started in 2025.

MONITORING: The monitoring approach is to use scope factors to distinguish final consumption sectors[4] and emission factors for fuel types. Covered entities must have approved monitoring plans in place as part of their GHG permits.

REPORTING: By the end of April 2025, covered entities submitted their first emission reports for their 2024 covered emissions. From 2026, covered entities will report verified emissions.

VERIFICATION: Verification of emission reports by an independent accredited verifier is required from 2026 (for 2025 emissions). Verifiers must be accredited by national accreditation bodies of Member States in accordance with the Accreditation and Verification Regulation (EU) 2018/2067, which is based on the ISO/IEC 17029 and ISO 14065 international standards for GHG validation and verification bodies.

PENALTIES AND ENFORCEMENT

Covered entities must pay an excess emissions penalty of EUR 100 (USD 113), adjusted for inflation with 2013 as the base year, for each tCO_2 emitted for which no allowance has been surrendered, in addition to buying and surrendering the equivalent number of allowances. The name of the non-compliant entity is also made public. Member States may enforce different penalties for other forms of non-compliance.

MARKET REGULATION

MARKET STABILITY PROVISIONS

EU ETS 2 MARKET STABILITY RESERVE (MSR)

Instrument type: Quantity-based instrument

Over the course of the first compliance year, a 30% higher volume of allowances will be auctioned to provide market liquidity. The EU ETS 2 was originally set to operate with a dedicated, rule-based MSR until 2030 to mitigate insufficient or excessive supply of allowances to the market, and with measures in the event of an excessive price increase.

Functioning: The reserve will be initially endowed with 600 million allowances. During the first three years of the EU ETS 2's operation, additional allowances may be released from the MSR if the price of allowances exceeds EUR 45 (USD 50.8) (in 2020 prices, i.e., adjusted for inflation), in order to address excessive price increases. Allowances may also be released from this reserve if the price increases too rapidly, according to specific rules and conditions. The changes to the instrument proposed by the EU Commission in November 2025[5] include doubling the number of allowances to be injected if the carbon price exceeds EUR 45, while also extending the instrument's validity beyond 2030.

OTHER INFORMATION

INSTITUTIONS INVOLVED

European Commission: Responsible for implementing and administering the EU ETS 2, including centralized elements such as the EU registry. The overall regulatory framework is adopted by the European Parliament and the Council, whose legislative decisions guide and constrain the Commission's role.

Competent authorities of all EU Member States as well as Iceland, Liechtenstein, and Norway: implementation, e. g., verifying compliance with MRV and surrender obligations.

REGULATORY FRAMEWORK

- → **Directive 2003/87/EC of the European Parliament and of the Council of 13 October 2003 establishing a system for greenhouse gas emission allowance trading within the Union**
- → **Regulation (EU) 2023/955 of the European Parliament and of the Council establishing a Social Climate Fund and amending Regulation (EU) 2021/1060**
- → **Decision (EU) 2015/1814 of the European Parliament and of the Council of 6 October 2015 establishment and operation of MSR for EU's GHG ETS**
- → All other legislation and documentation can be found **here.**

4 To exclude activities that do not fall under the scope of the system, such as agricultural use of fuel.
5 The changes pending the final decision by the European Parliament and the Council.

GERMANY

GERMAN NATIONAL EMISSION TRADING SYSTEM

- German ETS introduced in 2021 covering upstream heating and transport fuels
- Fixed price per tonne CO_2 from 2021 to 2025, price corridor in 2026
- When EU ETS 2 comes fully into force, it will largely replace the national ETS

ETS DESCRIPTION

Germany launched its national ETS (nETS, *Nationales Emissionshandelssystem*) for heating and transport fuels in 2021, bringing a wide range of sectors in Germany under a carbon price.

The nETS covers all fuel emissions not covered by the EU ETS 1 and operates upstream. It is being phased in gradually, with an increasing fixed price per tCO_2 from 2021 to 2025. In 2026, certificates are auctioned within a price corridor of EUR 55 (USD 62.15) to EUR 65/tCO_2 (USD 73.45/tCO_2), with no free allocation.[2] After completion of the auctioning period, certificates are sold at a fixed price of EUR 68/tCO_2 (USD 76.84/tCO_2) in 2026.[2] All main fuel types (gasoline, diesel, heating oil, natural and liquid gases) have been covered from the outset, while solid fuels such as coal were included in 2023 and waste incineration in 2024. During the fixed price and price corridor phases, the cap is flexible.

The nETS was established through the 2019 "Fuel Emissions Trading Act" and amended in 2020, 2022, 2023, and 2025. In February 2025, legislation was adopted to transition most nETS coverage to EU ETS 2. Due to the postponement of the obligation to surrender allowances in the EU ETS 2 by one year, the nETS will continue until 2028. When the EU ETS 2 starts, nETS will not apply to those sectors covered by the supranational system or which are opted in.

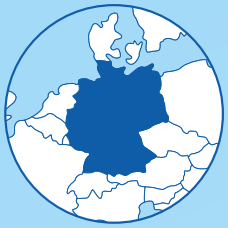
The Act forms part of the "Climate Action Program 2030", adopted to reach the country's 2030 climate targets and aim for climate neutrality by 2045.

YEAR IN REVIEW

In January 2024, Germany's national ETS expanded to include waste incineration.

In February 2025, the German parliament adopted a law to transition from the nETS to the EU-wide ETS 2. The EU ETS 2 was originally set to start on 1 January 2027, but in November 2025, the EU agreed to postpone this by one year to 2028. According to the law, Germany's system will end when the EU ETS 2 fully applies. The law foresees making use of the "opt-in" option, which allows Member States to add sectors not covered in the European system. In addition to fuels used in transport, buildings, and small industries, Germany plans to opt in additional sectors (into EU ETS 2). The coalition agreement states that combustion emissions from agriculture will not be opted in EU ETS 2. Also, the law does not extend the opt-in option to waste incineration, as the government is awaiting further EU-wide analysis on the effectiveness of carbon pricing in the waste sector. As a result, both will remain under the nETS unless new provisions are introduced by then.

1 In the introductory phase, with fixed price or price corridor, the cap is flexible.
2 USD conversion based on 2025 IMF exchange rate; actual future exchange rates may differ.



In force
Under development
Under consideration

SECTORS

- INDUSTRY
- WASTE
- BUILDINGS
- FUEL USE IN AGRICULTURE AND/OR FORESTRY
- TRANSPORT

CAP OR TOTAL EMISSIONS LIMIT

Absolute cap[1]
~255 $MtCO_2$ (2026)

GREENHOUSE GASES

CO_2

OFFSET CREDITS

Not allowed

ALLOCATION

Fixed price until 2025
Auctioning with a price corridor for 2026

AVERAGE 2025 PRICES

Fixed price: EUR 55 (USD 62.15)

TOTAL REVENUE

EUR 53.3 billion (USD 60.2 billion) since the beginning of the program
EUR 16 billion (USD 18.1 billion) in 2025

Between August and September 2025, the government adopted and brought into force a second amendment to the Fuel Emissions Trading Ordinance (BEHV), specifying the auction procedures for 2026 within the price corridor.

EMISSIONS & TARGETS OF GERMANY

OVERALL GHG EMISSIONS (including indirect CO_2, excluding LULUCF), 2023

(in $MtCO_2e$, share of total in %)

Energy	564.6	84%
Industrial processes	47.2	7%
Agriculture	54.8	8%
Waste	5.5	1%
Total	**672.0**	

Energy industries	198.1	29%
Manufacturing industries and construction	105.8	16%
Transport	146.1	22%
Commercial, institutional, and residential	102.1	15%
Other energy	12.6	2%

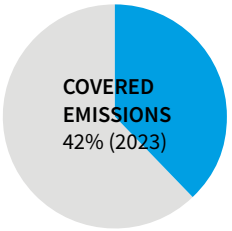
GHG REDUCTION TARGETS

By 2030: 65% reduction from 1990 GHG levels ("Climate Change Act")
By 2045: Climate neutrality ("Climate Change Act")

ETS COVERAGE & PHASES

COVERED EMISSIONS 2023

Verified ETS emissions: 282.6 $MtCO_2$



PHASES

PHASE 1: Ten years (2021 to 2030)

CAP OR TOTAL EMISSIONS LIMIT

An absolute cap limits the total emissions allowed in the system and is fixed ex-ante.

PHASE 1: The cap is set in line with Germany's reduction targets for the non-EU ETS sectors as defined by the "European Effort Sharing Regulation" (ESR). Given the revision of the ESR as part of the EU's "Fit for 55" legislative package, the German government has set a revised cap for the nETS that decreases yearly in accordance with reduction targets.

During the fixed-price period from 2021 to 2025, and as long as a price corridor is deemed necessary, the cap is flexible. If emissions (and therefore the demand for allowances) within the German ETS exceed the cap, additional allowances will be available for covered entities.

These flexibility provisions will become void as soon as price determination is left solely to the market. The cap will also be binding at this point.

SECTORS AND THRESHOLDS

TYPES OF FUEL COVERED: All fuels used in the transport sector, for the production of heat and other sectors such as fuels in agriculture, rail transport and waste incineration, e. g., fuel oil, LPG, natural gas, coal, gasoline, and diesel.

Biomass used as fuel in the transport sector and for heating purposes generally also falls under the scope of the system. However, emissions from biogenic fuels that meet the sustainability criteria as set out in national regulations transposing the "European Renewable Energy Directives 2029/28/EC" and "2018/2001" do not face compliance obligations.

The system started with a limited scope in 2021 and 2022, including fuel oil, LPG, natural gas, gasoline, and diesel. Coal was added in 2023. Fuels used in waste incineration were covered from 2024 onwards.

Provisions have been put in place to avoid double compliance burdens for installations covered by the EU ETS 1. Emissions that arise from a fuel delivered to and used in an EU ETS 1 installation must be reported by the installation in all cases. These emissions may then be deducted from the reported emissions of the fuel distributor under the German ETS if:

A) evidence can be provided that the emissions have been reported by the receiving EU ETS 1 installation; and
B) no carbon price has been passed through.

If no such evidence can be provided or if carbon costs were passed through from the supplier under the system to the EU ETS 1 installation, the supplier is obligated to report and surrender allowances to cover the emissions. In such a case, the EU ETS 1 installation, upon application, receives full compensation for the price that has been passed through.

POINT OF REGULATION

Upstream

TYPE OF ENTITIES
Entities releasing fuels for consumption (e. g., fuel distributors)

NUMBER OF ENTITIES
2,070 (2024)

ALLOWANCE ALLOCATION & REVENUE

ALLOWANCE ALLOCATION
PHASE 1:
Fixed price phase (2021 to 2025): Allowances are sold for a fixed price. The price schedule is as follows:
- **2021:** EUR 25 (USD 27.06)
- **2022:** EUR 30 (USD 32.47)
- **2023:** EUR 30 (USD 32.47)
- **2024:** EUR 45 (USD 48.71)
- **2025:** EUR 55 (USD 62.15)

Proportion of auctioned allowances: 100%

Generally, the yearly fixed price only applies to allowances acquired in the respective calendar year. However, up to 10% of allowances needed for compliance obligations for year X can be acquired until the end of September of year X+1 at the fixed price of year X.

Auctioning phase (from 2026): The auction volume is set at 100% of the annual cap, adjusted by adding the cap increment (to account for double-counting with the EU ETS 1) and deducting the cumulative additional allowance sales from the fixed-price phase (2021–2025). A price corridor with a minimum price of EUR 55 (USD 62.15) and a maximum price of EUR 65 (USD 73.45) per tCO_2 will apply in 2026. If the cap is exceeded an additional unlimited amount of allowances can be bought at a price of EUR 68 (USD 76.84) after the auctioning period.

CARBON LEAKAGE RULES: The German ETS is accompanied by a compensation mechanism to avoid carbon leakage for emission-intensive trade-exposed sectors. Regulations were released in July 2021 and applied retroactively to companies in emission-intensive sectors that face international competition. Industries eligible for compensation are those on the carbon leakage list of the EU ETS 1 Phase 4. Therefore, firms from the same industrial sector regulated under the nETS and EU ETS 1 should be treated equally.

Additional sectors/sub-sectors may qualify upon request if they meet thresholds for emissions and trade intensity. In contrast to the EU ETS 1, the German ETS does not use free allocation, but compensation based on sectoral fuel benchmarks and fixed compensation levels.

USE OF REVENUES
- Climate mitigation
- Low-carbon innovation
- Assistance for individuals, households, and businesses

All revenues from the national ETS go into the Government's "Climate and Transformation Fund" (*Klima- und Transformationsfonds* – KTF). This fund is used to support measures under the climate protection program. These include GHG reduction programs – e.g., incentivizing climate-friendly transport and energy-efficient buildings – as well as support for industrial decarbonization and the hydrogen economy, and energy cost relief for industry and households.

FLEXIBILITY & LINKING

BANKING AND BORROWING
Banking is not allowed during the fixed price and the corridor phase.
Borrowing is not allowed.

OFFSETS AND CREDITS
The use of offset credits is not allowed.

LINKS WITH OTHER SYSTEMS
The nETS is not linked with any other system.

OTHER CARBON PRICING INSTRUMENTS IN THE JURISDICTION
ETS (supranational): EU ETS 1

COMPLIANCE

COMPLIANCE MECHANISM
Covered entities must surrender one compliance unit (national emissions certificate, nEZ) per tCO_2 emitted for all their covered emissions.

COMPLIANCE PERIOD
One calendar year. Entities have until the end of September to surrender allowances to cover the reported emissions of the previous year.

MRV

FRAMEWORK: The Fuel Emissions Trading Act (BEHG) establishes MRV obligations (monitoring plan, annual emissions reporting, surrender, deadlines, enforcement), supported by the Emissions Reporting Ordinance 2030 (EBeV 2030) for methods/report content and BEHV for registry/sales procedures.

MONITORING: Monitoring is upstream and calculation-based using quantities of fuels placed on the market and standard emission factors. A DEHSt approved monitoring plan is required from 2023 onward.

REPORTING: Annual emissions reports must be submitted electronically by July 31 for the previous calendar year.

Emissions data are recorded in a national registry and are publicly available.

VERIFICATION: Verification of the annual emissions by accredited independent third-party verifiers has been mandatory since 2023. As with the monitoring plan requirement, the verification requirement was waived for 2021 and 2022.

PENALTIES AND ENFORCEMENT

During the fixed-price phase, entities must pay an excess emissions penalty for each tCO_2 emitted for which no allowance has been surrendered, set at two times the fixed price. Payment of the penalty does not release the entity from the obligation to surrender allowances to cover the emissions; entities remain obliged to purchase and surrender the outstanding allowances.

For 2026, entities must pay an excess emissions penalty of EUR 100 for each tCO_2 emitted[3] for which no allowance is surrendered.

For other instances of non-compliance, e.g., misreporting or late reporting, entities can be fined.

MARKET REGULATION

MARKET DESIGN

MARKET PARTICIPATION: Trading accounts can be held by any domestic or international natural or legal person. Compliance entities (upstream fuel distributors) can buy allowances directly from the trading platform or via intermediaries.

MARKET TYPES:

Primary: EEX is the German ETS's sales and auction platform. During the fixed-price phase, allowances are issued at the predetermined price. Auctioning starts in 2026 within a price corridor and is conducted according to the BEHV and EEX auction procedures.

Secondary: Allowances can be purchased on the secondary market throughout the year. Secondary trading is over the counter.

LEGAL STATUS OF ALLOWANCES: Allowances or their derivatives do not have the status of financial instruments according to the "German Banking Act" or the "Securities Trading Act".

MARKET STABILITY PROVISIONS

FLEXIBLE CAP PROVISIONS

Instrument type: Quantity-based instrument

Functioning: To maintain the fixed price in the introduction phase, additional allowances exceeding the cap can be acquired by entities if the demand exceeds the cap. This was the case in 2021, where sold allowances exceeded the cap by 4.6 $MtCO_2$ and again in 2023 when reported emissions were about 2.4 $MtCO_2$ above the target, while in 2022, the sold volume was 4 $MtCO_2$ lower than the cap.

In 2026, allowances will be auctioned within a price corridor.

OTHER INFORMATION

INSTITUTIONS INVOLVED

German Federal Ministry for the Environment, Climate Action, Nature Conservation and Nuclear Safety (BMUKN): Responsible for establishing the regulatory framework of the nETS.
German Emissions Trading Authority (DEHSt) at the German Environment Agency (UBA): Implementing authority, e.g., responsible for the registry and receiving emission reports.

EVALUATION/ETS REVIEW

The German government published its first evaluation report in December 2022.[4]

A second evaluation report has been published in January 2025.[5] From 2025 onwards, the German ETS will be evaluated every four years.

REGULATORY FRAMEWORK

- → **Fuel Emissions Trading Act**
- → **Emissions Reporting Regulation 2030**
- → **Fuel Emissions Trading Regulation**
- → **Carbon Leakage Regulation**

3 For 2025, the inflation-adjusted penalty is €131 (USD 148).
4 The 2022 report is available (German only) at **https://dserver.bundestag.de/btd/20/048/2004861.pdf**.
5 The 2024 report is available (German only) at **https://dserver.bundestag.de/btd/20/144/2014488.pdf**.

KAZAKHSTAN

KAZAKHSTAN EMISSIONS TRADING SYSTEM

- ETS in force since 2013, entered Phase 6 in 2026
- Full transition to benchmarking in 2021
- Plans to introduce auctioning

ETS DESCRIPTION

Kazakhstan launched its ETS (KAZ ETS) in January 2013. It covered around half of Kazakhstan's CO_2 emissions in 2024, stemming from 229 installations in the power, centralized heating, extractive industries, and manufacturing sectors. Covered entities must surrender compliance units (allowances or domestic offset credits) for all their covered emissions, and allowances are distributed for free.

The KAZ ETS cap is based on historical data on installations' production volumes and established benchmarks. A reserve of allowances, on top of the cap, is available to covered entities in case they increase their production volume as well as for new entrants. In 2024, a total of 11.5 $MtCO_2$ allowances from the reserve were issued to 102 installations.

Since 2021, all allowances have been allocated via benchmarking. There is no quantitative limit to the offset credits that covered entities can use for compliance. Domestic offset projects in all economic sectors that are not covered by the ETS can generate credits. In 2023, a domestic offsetting standard, the Qazaq Green Certificate Program, was developed. However, credits certified under this standard are currently not eligible under the KAZ ETS.

Previously, groundwork for the development of the ETS was laid out in 2011 through amendments to Kazakhstan's existing environmental legislation. The system was briefly suspended in 2016 and 2017 to tackle operational issues and reform allocation rules, although MRV obligations still applied.

YEAR IN REVIEW

A draft national allocation plan for the period from 2026 to 2030 was published in October 2025. It envisages annual reductions of the cap in this period of 10.4- 23%, compared with the 2025 level. The introduction of auctioning is currently under development.

In force
Under development
Under consideration

SECTORS

MINING AND EXTRACTIVES

POWER

INDUSTRY

CAP OR TOTAL EMISSIONS LIMIT

Absolute cap
167.4 $MtCO_2$ including reserve (2025)

GREENHOUSE GASES

CO_2

OFFSET CREDITS

Domestic offset credits, unlimited

ALLOCATION

Free Allocation: Output-based Benchmarking

AVERAGE 2025 PRICES

Average secondary market price: KZT 455.48 (USD 0.87)

EMISSIONS & TARGETS OF KAZAKHSTAN

OVERALL GHG EMISSIONS (including indirect CO_2, excluding LULUCF), **2023**
(in $MtCO_2e$, share of total in %)

Energy	278.5	80%
Industrial processes	26.8	8%
Agriculture	33.4	10%
Waste	7.1	2%
Total	**345.8**	**100%**

Energy industries	140.3	41%
Manufacturing industries and construction	23.2	7%
Transport	27.5	8%
Commercial, institutional, and residential	35.0	10%
Other energy	52.5	15%

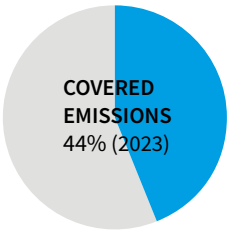
GHG REDUCTION TARGETS

By 2035: 17% (unconditional) to 25% (conditional) reduction from 1990 GHG levels (updated NDC)
By 2060: Carbon neutrality ("Strategy on achieving carbon neutrality by 2060")

ETS COVERAGE & PHASES

COVERED EMISSIONS 2023

Verified ETS emissions: 152.9 $MtCO_2$



PHASES

PHASE 1: One year (2013)
PHASE 2: Two years (2014 to 2015)
(2016 and 2017: System suspended)
PHASE 3: Three years (2018 to 2020)
PHASE 4: One year (2021)
PHASE 5: Four years (2022 to 2025)
PHASE 6: Five years (2026 to 2030)

CAP OR TOTAL EMISSIONS LIMIT

An absolute cap limits the total emissions allowed in the system and is fixed ex-ante.

PHASE 1: 147 $MtCO_2$ (plus new entrants' reserve of 20.6 $MtCO_2$). This equaled a stabilization of the capped entities' emissions at 2010 levels.
PHASE 2:
2014: 154.9 $MtCO_2$ (plus a reserve of 18 $MtCO_2$)
2015: 152.8 $MtCO_2$ (plus a reserve of 20.5 $MtCO_2$)

This represented reduction targets of 0% and 1.5% respectively, compared to the average CO_2 emissions of capped entities in 2011 to 2012.

PHASE 3: 485.9 $MtCO_2$ (plus a reserve of 35.3 $MtCO_2$). The cap was set at a 5% reduction by 2020 from 1990 levels. The cap was allocated for the overall compliance period of 2018 to 2020; there was no annual cap.

PHASE 4: 159.9 $MtCO_2$ (plus a reserve of 11.5 $MtCO_2$)

PHASE 5: 650.1 $MtCO_2$ for the overall period, with declining annual caps.
2022: 166.1 $MtCO_2$ (plus a reserve of 11.8 $MtCO_2$)
2023: 163.7 $MtCO_2$ (plus a reserve of 11.6 $MtCO_2$)
2024: 162.1 $MtCO_2$ (plus a reserve of 9.3 $MtCO_2$)
2025: 158.2 $MtCO_2$ (plus a reserve of 9.2 $MtCO_2$)

PHASE 6: The absolute cap on GHG emissions for 2026 to 2030 has not yet been established, as the National Allocation Plan for Phase 6 is under consideration by the Ministry of Ecology and Natural Resources of the Republic of Kazakhstan.

SECTORS AND THRESHOLDS

PHASE 1: Power sector and centralized heating; extractive industries and manufacturing: oil and gas, mining, metallurgy, chemicals industry.
PHASE 2: Same as Phase 1.
PHASE 3: Same as Phase 1 plus processing industries (production of building materials: cement, lime, gypsum, and brick).
PHASE 4: Same as Phase 3.
PHASE 5: Same as Phase 3.
PHASE 6: Same as Phase 4.

INCLUSION THRESHOLDS: Facilities emitting more than 20,000 tCO_2/year.

POINT OF REGULATION

Point source

TYPE OF ENTITIES

Installations

NUMBER OF ENTITIES
155 companies (229 installations) (2024)

ALLOWANCE ALLOCATION & REVENUE

ALLOWANCE ALLOCATION
PHASE 1: Free allocation (grandparenting), based on emissions data from 2010.

PHASE 2: Grandparenting (0% and 1.5% below 2011 to 2012 average emissions).

PHASE 3: Grandparenting or product-based benchmarking, chosen by each company (149 installations chose benchmarking and 76 chose grandparenting). Additionally, there was a reserve of 35.3 million allowances for new entrants, new stationary emission sources, and changes in output for those which chose benchmarking.

PHASE 4: Benchmarking. A reserve contained 11.5 million allowances for the same purposes as in Phase 3.

PHASE 5: Benchmarking. A reserve contains 41.9 million allowances for new entrants, new stationary emission sources, changes in output and for (planned) auctioning.

PHASE 6: The National Allocation Plan for the period is under consideration by the Ministry of Ecology and Natural Resources of the Republic of Kazakhstan.

FLEXIBILITY & LINKING

BANKING AND BORROWING
Banking is allowed within each phase, but not between phases.
Borrowing is not allowed.

OFFSET CREDITS
The use of offset credits is allowed.

QUALITATIVE LIMITS: Domestic offset credits in all sectors (GHG reduction or absorption activities) outside the scope of the ETS are allowed. Project applicants can submit their projects for consideration to the Ministry of Ecology and Natural Resources for approval and issuance of offset credits. These are carried out in accordance with IPCC methodologies and rules developed by the ministry.

QUANTITATIVE LIMITS: None.

In 2024, 86,707 offset credits were surrendered for compliance.

LINKS WITH OTHER SYSTEMS
The Kazakhstan ETS is not linked with any other system.

COMPLIANCE

COMPLIANCE MECHANISM
Covered entities must surrender one compliance unit (allowances or offset credit) per tCO_2 emitted for all their covered emissions.

COMPLIANCE PERIOD
One year, surrendering is due by April 15 of the year following the reporting period.

MRV
FRAMEWORK: "Environmental Code of the Republic of Kazakhstan 2021".

MONITORING: Reporting is required annually for installations emitting above the 10,000 tCO_2/year threshold. Reporting is required for CO_2, CH_4, N_2O, and PFC emissions. Monitoring plans are required for operators emitting >20,000 tCO_2 per annum.

REPORTING: Emission reports must be submitted by April 15 of the year following the reporting year.

VERIFICATION: Emissions reports and their underlying data require third-party verification by an accredited auditor. Operators of installations with emissions between 10,000 and 19,999 tCO_2/year are not required to participate in the ETS or to verify their annual emission reports.

Accreditation of verifiers is carried out in accordance with the legislation of the Republic of Kazakhstan and the following international standards: ISO 14064-3, ISO 14065, ISO 14066, ISO 17029.

PENALTIES AND ENFORCEMENT
The non-compliance penalty equals five monthly standard units for each tCO_2. This was KZT 19,660 (USD 37.73) in 2025.

MARKET REGULATION

MARKET DESIGN

MARKET PARTICIPATION: Compliance entities; individuals, and legal entities involved in the implementation of offset projects. Brokers, banks or other financial institutions are not allowed to trade.

MARKET TYPES:

Primary: While domestic legislation allows for the establishment of a primary market through auctioning, to date all allowances have been distributed for free through grandparenting or benchmarking.

Secondary: Pure spot market, no forward contracts or other derivatives. In the beginning of the system, trades had to be executed via the Caspy Commodity Exchange JSC. From Phase 3 onwards, several additional exchange platforms that signed an agreement with the operator of the state registry – JSC "Zhasyl Damu" – were made available for trading. Over-the-counter trading has been allowed since Phase 3. Since 2022, trading of carbon units on commodity exchanges has been suspended.

LEGAL STATUS OF ALLOWANCES: In accordance with the Environmental Code, a carbon unit (emissions allowance or offset credit) is a commodity permitted for transfer among the subjects of the carbon market in the Republic of Kazakhstan.

OTHER INFORMATION

INSTITUTIONS INVOLVED

Ministry of Ecology and Natural Resources: Responsible for establishing the ETS regulatory framework.

JSC Zhasyl Damu: Implementing authority, responsible for the registry and reserve management.

EVALUATION/ETS REVIEW

On an annual basis, JSC Zhasyl Damu prepares a report on the carbon units trading in the Republic of Kazakhstan.

REGULATORY FRAMEWORK

- → **Environmental Code of the Republic of Kazakhstan (2021)**
- → **Rules of State Regulation of Emissions and Absorption of GHGs (2022)**
- → **Rules for GHG Emissions Trading (2021)**

MONTENEGRO

MONTENEGRO EMISSIONS TRADING SYSTEM

- ETS in force since 2020, as part of the EU accession process
- Revised Climate Law aligns the national ETS design with the EU ETS 1
- Full readiness for EU ETS implementation targeted by 2028
- ETS Decree currently under revision, anticipated to be in force from May 2026

ETS DESCRIPTION

In December 2019, the "Law on Protection from the Negative Impacts of Climate Change" (Climate Law) entered into force in Montenegro. The law mandates the development of a comprehensive set of climate policies including a GHG inventory, a low-carbon development strategy, and a national MRV system. It further provides the legal basis for a national ETS covering emissions from the industrial and power sectors.

A bylaw specific to the ETS, the "Decree on Activities for which a GHG Permit is Issued" (ETS Decree), was adopted in February 2020. This regulation determines sectoral coverage and inclusion thresholds, rules governing trading of allowances, allocation rules, and a market stabilization reserve. It further includes provisions for banking allowances, a minimum reserve price of EUR 24 (USD 27.12), and a linear reduction factor for the emissions cap of 1.5% annually in the period from 2020 to 2030.

Montenegro has been an EU candidate country since 2010. It is required to bring its environmental and climate policy in line with the EU as part of accession talks that began in late 2018. Establishing a national ETS is a requirement to ensure that Montenegro has the climate policy framework in place to take part in the EU ETS 1 and 2 should it join the bloc. The country aims to have its legal framework fully aligned for implementation of the EU ETS 1 and EU ETS 2 by 2028.

The ETS formally began operations in February 2020 and initially applied to three installations: the Pljevlja coal plant (TPP), the KAP aluminium plant, and the Tosčelik steel mill. Only the Pljevlja coal plant is still operating as of 2025. Covered entities must surrender allowances for all their covered emissions, and allocation is based on auctions or free allocation.

YEAR IN REVIEW

The operation of the Montenegro ETS was negatively affected by several changes of government since 2022, which caused major delays in the adoption of the yearly allocation plans. In addition, two of the three covered installations shut down in 2022 in response to rapidly rising energy prices. This is still the case as of January 2026, leaving the Pljevlja coal plant as the only operational covered entity.

The Montenegro government set up a working group in mid-2022 to review the country's climate legislation, including the ETS. In September 2025, the "Draft Climate Change Law" was finalized and sent to the Legislative Secretariat for an opinion.

1 No auctions took place in 2025.

In force
Under development
Under consideration

SECTORS

POWER

INDUSTRY

CAP OR TOTAL EMISSIONS LIMIT

Absolute cap
3.1 $MtCO_2e$ (2024)

GREENHOUSE GASES

CO_2

OFFSET CREDITS

Not allowed

ALLOCATION

Free Allocation: Grandparenting
Free Allocation: Fixed Benchmarking (for new installations)
Auctioning

AVERAGE 2025 PRICES

Average auction price: EUR 24 (USD 27.12)[1]

TOTAL REVENUE

EUR 22.1 million (USD 25 million) since the beginning of the program

The Draft Law on Climate Change was adopted in December 2025 and will enter into force from May 2026. This revised Climate Law will align various design elements of the Montenegro system with EU ETS regulations, including provisions on MRV, allocation of allowances, and the use of revenues. The law and accompanying bylaws, which are already in preparation, are key to the alignment of the MRV system with EU ETS 1 rules.

Following the adoption of the revised Climate Change Law, intensive work has begun on drafting a revised ETS Decree, with adoption anticipated by May 2026.

EMISSIONS & TARGETS OF MONTENEGRO

OVERALL GHG EMISSIONS (including indirect CO_2, excluding LULUCF), 2022

(in $MtCO_2e$, share of total in %)

Energy	2.7	78%
Industrial processes	0.2	4%
Agriculture	0.3	7%
Waste	0.4	10%
Total	**3.5**	

Energy industries	1.5	43%
Manufacturing industries and construction	0.2	6%
Transport	0.9	27%
Commercial, Institutional, and Residential	0.1	2%

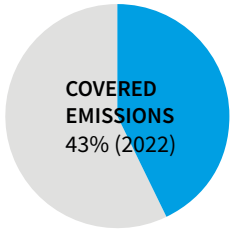
GHG REDUCTION TARGETS

By 2030: 55% reduction below 1990 levels excl. LULUCF (NDC)
By 2035: 60% reduction below 1990 levels excl. LULUCF (updated NDC)
By 2050: Climate neutrality (aspirational, “Sofia Declaration”)

ETS COVERAGE & PHASES

COVERED EMISSIONS 2022

Verified ETS emissions: 1.5 $MtCO_2e$



CAP OR TOTAL EMISSIONS LIMIT

An absolute cap limits the total emissions allowed in the system and is fixed ex-ante.
2020: 3.3 $MtCO_2e$
2021: 3.3 $MtCO_2e$
2022: 3.2 $MtCO_2e$
2023: 3.2 $MtCO_2e$
2024: 3.1 $MtCO_2e$
2025: 3.1 $MtCO_2$
Annual reduction factor: 1.5%

SECTORS AND THRESHOLDS

SECTORS: Industries listed under Appendix 1 of the ETS Decree must participate in the system. These include power plants, oil refineries, coke production, the production or processing of iron and steel, non-ferrous metals, cement clinker, glass, ceramic products, and paper (pulp).

INCLUSION THRESHOLDS:

- Power plants with a capacity in excess of 20 MW
- Installations for the production of pig iron or steel (primary or secondary fusion) including continuous casting, with a capacity exceeding 2.5 tonnes per hour
- Installations for the production of cement clinker in rotary kilns with a production capacity exceeding 500 tonnes per day or lime in rotary kilns with a production capacity exceeding 50 tonnes per day or in other furnaces with a production capacity exceeding 50 tonnes per day
- Installations for the manufacture of glass including glass fibre with a melting capacity exceeding 20 tonnes per day
- Installations for the manufacture of ceramic products by firing, in particular roofing tiles, bricks, refractory bricks, tiles, stoneware or porcelain, with a production capacity exceeding 75 tonnes per day, and/or with a kiln capacity exceeding 4 m^3 and with a setting density per kiln exceeding 300 kg/m^3

POINT OF REGULATION

Point source (power, industry)

TYPE OF ENTITIES

Installations

NUMBER OF ENTITIES

Three, out of which only one is currently operational (2025)

ALLOWANCE ALLOCATION & REVENUE

ALLOWANCE ALLOCATION

Proportion of auctioned allowances: 0% (2025)

2020 to 2022: Free allocation of allowances (Grandparenting)
2023: The government appointed the auctioning committee in December 2022 and auctioning took place in early 2023.

- **Auction share:** 19% (385,657 allowances)
- **Free allocation share:** 222,515 allowances
- **Auction volume:** 600,000 allowances

2024: The government appointed the auctioning committee in May 2024 and auctioning took place in June 2024.

- **Auction share:** 19% (535,310 allowances)
- **Free allocation:** 875,242 allowances
- **Auction volume:** 600,000 allowances

For the years 2023 and 2024, the total amount of allowances allocated in the Montenegro ETS was significantly below the cap for the respective year. This is a result of two of the three covered installations having ceased operations in 2022 and the corresponding reduction in demand for allowances.

2025: Due to a temporary closure of the only remaining installation in the ETS (TPP) and a corresponding reduction in demand for allowances, no auctions took place in 2025.

- **Auction share:** 0%
- **Free allocation:** 831,480 allowances (all to TPP)

USE OF REVENUES

- Climate mitigation
- Low-carbon innovation
- Pursuit of other development objectives, such as education and health

Auction revenues go to Montenegro's Environmental Protection Fund (*Eko Fond*) to finance low-carbon innovation, renewable energy, and environmental protection.

FLEXIBILITY & LINKING

BANKING AND BORROWING

Banking is allowed.
Borrowing is not allowed.

OFFSET CREDITS

The use of offset credits is not allowed.

LINKS WITH OTHER SYSTEMS

The Montenegro ETS is not linked to any other system.

COMPLIANCE

COMPLIANCE MECHANISM

Covered entities must surrender one compliance unit (emission allowance) per tCO_2e emitted for all their covered emissions.

COMPLIANCE PERIOD

One year.

Participants are obliged to submit a verified report on GHG emissions to the Environmental Protection Agency (EPA) by the end of March of the year following the reporting period. The date for surrendering allowances is not fixed in existing legislation.

MRV

FRAMEWORK: The legal basis for MRV obligations in Montenegro is defined in the "Law on Protection from the Negative Impacts of Climate Change" and the "Regulation on the Content of the Plan for Monitoring Greenhouse Gas Emissions from Facilities". The latter determines the methodologies and procedures required to measure GHG emissions from stationary plants.

MONITORING: Covered entities must submit, together with the allowance application, a plan for monitoring GHG emissions from the installation. The content of the Monitoring Plan, the procedures, processes and the methodology for monitoring GHG emissions are laid down by the bylaws. The entity is also obliged to improve the methodology for monitoring GHG emissions and amend the Monitoring Plan on the request of the administration authority (EPA).

REPORTING: Participants are obliged to submit an annual verified report on GHG emissions to the EPA by the end of March of the year following the reporting period. If the covered entity fails to submit the verified report, the EPA makes a conservative estimate of the level of GHG emissions. The costs of making the estimate are to be paid by the entity.

The form and content of the report, procedures and method of making a conservative estimate are prescribed by the bylaws.

VERIFICATION: Verification of the GHG reports may be performed only by an accredited legal entity that fulfils the requirements regarding personnel and equipment for report verification.

PENALTIES AND ENFORCEMENT

Penalties as stipulated by the Climate Law range from EUR 2,000 (USD 2,260) to EUR 40,000 (USD 45,199) and can be imposed against legal entities and responsible natural persons in the legal entity.

MARKET REGULATION

MARKET DESIGN

MARKET PARTICIPATION: Due to the very small size of the Montenegro ETS, participation of non-compliance entities (intermediaries) is not possible.

MARKET TYPES:
Primary: Allowance auctions are organized by the government.
Secondary: There is no established secondary market. Due to only one entity remaining in the market, there is no trading activity as of January 2026.

LEGAL STATUS OF ALLOWANCES: Allowances are considered financial instruments under Montenegrin law.

MARKET STABILITY PROVISIONS

INSTRUMENT NAME: Price floor
Instrument type: Price-based instrument
Functioning: There is a (permanent) minimum price of EUR 24/tCO_2 (USD 27.12) for auctions.

OTHER INFORMATION

INSTITUTIONS INVOLVED

Ministry of Ecology, Spatial Planning, Urbanism and State Property: Responsible for environmental and climate policy, including the national ETS.
Environmental Protection Agency (EPA): Responsible for allowance issuance and monitoring of verification reports.

REGULATORY FRAMEWORK

- → **Decree promulgating the Law on Climate Change (2025)**
- → **Decree on Activities for which a GHG Permit is Issued (2020)**
- → **Regulation on the Content of the Plan for Monitoring Greenhouse Gas (GHG) Emissions from Facilities (2022)**
- → **Law on Protection from the Negative Impacts of Climate Change (2019)**

SWITZERLAND

SWITZERLAND EMISSIONS TRADING SYSTEM

- Entered a new ten-year trading phase in 2021
- Linked with the EU ETS 1 since January 2020
- Important ETS regulatory revisions implemented in 2025 and 2026

ETS DESCRIPTION

The Switzerland (Swiss) ETS started in 2008 with a five-year voluntary phase. Thereafter, participation was mandatory for large, energy-intensive entities and voluntary for medium-sized entities. The Swiss ETS covered about 12% of the country's total GHG emissions in 2022 (including aviation). Participants in the ETS are exempt from the national CO_2 levy.

The Swiss ETS covers electricity generation, industrial entities (largely comprising companies from the cement, chemicals, pharmaceuticals, paper, refining, and steel sectors), domestic aviation, and flights to the European Economic Area and the United Kingdom. Allowances are allocated through benchmarking and auctioning. Auctioning volumes may be reduced if the total number of allowances in circulation exceeds a certain threshold.

The Swiss ETS has been linked with the EU ETS 1 since January 2020. In January 2025, Switzerland implemented reforms to align its ETS with the 2023 EU ETS 1 revisions, adopting the same linear reduction factors and phasing out free allocation for aviation to ensure continued compatibility between the two systems. The same benchmarks as in the EU ETS 1 apply to stationary entities covered by the Swiss ETS.

The system is mandated by the Federal Act on the Reduction of CO_2 Emissions ("CO_2 Act") and regulated through an implementing regulation ("CO_2 Ordinance").

YEAR IN REVIEW

On January 1, 2025, the revised CO_2 Act entered into force, aligning the Swiss ETS with the revised EU ETS 1.

For stationary installations and aviation, the same linear reduction factors as in the EU ETS 1 now apply to reduce the respective caps for 2024 to 2030: 4.3% for 2024 to 2027 and 4.4% for 2028 to 2030. Additionally, carbon capture and storage, and under certain conditions foreign biogas use, can now be accounted for in the ETS. In aviation, free emission allowances for operators are phased out by 2026, in accordance with the rules in the EU ETS 1.

In November, the Swiss Federal Council adopted further partial revisions to the CO_2 Ordinance, effective January 1, 2026, including further reductions in free emission allowances for industrial installations and a new incentive mechanism providing free emission allowances to aircraft operators to partially offset costs for sustainable aviation fuel (SAF) uptake.

SECTORS

POWER

INDUSTRY

AVIATION

CAP OR TOTAL EMISSIONS LIMIT

Absolute cap
3.75 $MtCO_2e$ (2026, power and industry)
1.06 $MtCO_2e$ (2026, aviation)

GREENHOUSE GASES

CO_2, N_2O, CH_4, HFCs, NF_3, SF_6, PFCs[1]

OFFSET CREDITS

Not allowed

ALLOCATION

Free Allocation: Fixed Benchmarking
Auctioning

AVERAGE 2025 PRICES

Average auction price: EUR 74.18 (USD 83.82)

TOTAL REVENUE

EUR 258 million (USD 373.5 million) since the beginning of the program
EUR 77 million (USD 87.1 million) in 2025

1 In principle, all these gases are covered in accordance with the CO_2 Ordinance. In practice, only CO_2, N_2O, and PFCs require monitoring, as the share of the other gases is negligible.

EMISSIONS & TARGETS OF SWITZERLAND

OVERALL GHG EMISSIONS (including indirect CO_2, excluding LULUCF), **2023**

(in $MtCO_2e$, share of total in %)

Energy	30.4	75%
Industrial processes	3.3	8%
Agriculture	6.0	15%
Waste	1.1	3%
Others	0.01	0%
Total	**40.8**	**(100%)**

Energy industries	3.2	8%
Manufacturing industries and construction	3.9	9%
Transport	13.6	33%
Commercial, institutional, and residential	9.1	22%
Other energy	0.7	2%

GHG REDUCTION TARGETS

By 2030: At least 50% reduction from 1990 GHG levels, to be implemented as an emission budget covering 2021 to 2030 (updated first NDC and revised CO_2 Act)

By 2035: At least 65% reduction from 1990 GHG levels, to be implemented as an emission budget covering 2031 to 2035 (NDC 2.0)

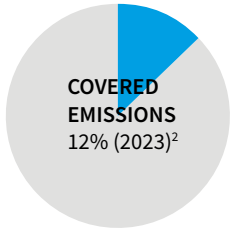
By 2040: At least 75% reduction from 1990 GHG levels ("Climate and Innovation Act")

By 2050: Net zero GHG emissions (NDC and "Climate and Innovation Act")

ETS COVERAGE & PHASES

COVERED EMISSIONS 2023

Verified ETS emissions: 5.4 $MtCO_2e$



PHASES

VOLUNTARY PHASE: Five years (2008 to 2012)

SECOND TRADING PERIOD: Eight years (2013 to 2020)

THIRD TRADING PERIOD: Ten years (2021 to 2030)

CAP OR TOTAL EMISSIONS LIMIT

An absolute cap limits the total emissions allowed in the system and is fixed ex-ante.

VOLUNTARY PHASE: Each participant received its own entity-specific reduction target.

SECOND TRADING PERIOD:

Stationary installations: Overall top-down cap of 5.6 $MtCO_2e$ (2013) that was reduced annually by a constant linear reduction factor of 1.74% (of baseline emissions set by entities' historical data from 2008 to 2012) to 4.9 $MtCO_2e$ in 2020.

Aviation: 1.3 $MtCO_2$ (2020)

THIRD TRADING PERIOD: An annual linear reduction factor of 2.2% (2010 base year) applied to the cap for stationary installations and to the aviation cap from 2021 to 2023. As from 2024, the effective linear reduction factor is 4.3%, and 4.4% from 2028.

SECTORS AND THRESHOLDS

MANDATORY PARTICIPATION: Industries listed under Annex 6 of the CO_2 Ordinance must participate in the Swiss ETS. These include 25 categories, such as cement, chemicals and pharmaceuticals, refineries, paper, district heating, steel, and other sectors. Since 2020, the ETS has covered emissions from aviation (domestic and outbound flights to the EEA or the UK) and fossil-thermal power plants.

INCLUSION THRESHOLDS: Threshold values apply to most activities in terms of production capacity or total rated thermal input.

POSSIBLE VOLUNTARY OPT-IN: Industries with a total rated thermal input of ≥10 MW. A company that fulfils the participation conditions must submit the application within the following six months.

POSSIBLE OPT-OUT: Industries with a total rated thermal input greater than 20 MW but emissions below 25,000 tCO_2e in each of the past three years. If an entity's future emissions rise above the threshold in a given year, it must participate in the ETS starting from the following year and cannot opt out for the remainder of the compliance period. New entrants can apply for an opt-out with immediate effect if they can credibly report their emissions to be below 25,000 tCO_2e/year.

AVIATION: Commercial aircraft operators emitting more than 10,000 tCO_2/year or operating ≥ 243 flights in a four-month period in the preceding year. Non-commercial operators are included when emitting more than 1,000 tCO_2/year. The thresholds do not apply if the operator has obligations under the EU ETS 1.

2 Covered emissions are calculated using overall GHG emissions with international aviation and without LULUCF (45.9 $MtCO_2e$).

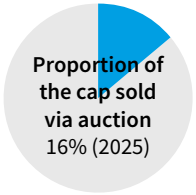
POINT OF REGULATION
Point source

TYPE OF ENTITIES
Installations (power and industry) and aircraft operators (aviation)

NUMBER OF ENTITIES
Stationary installations: 98 (2024)
Aircraft operators: 193 (2024)

ALLOWANCE ALLOCATION & REVENUE

ALLOWANCE ALLOCATION



VOLUNTARY PHASE: Participants received free allowances covering emissions up to their entity-specific emissions target.

SECOND TRADING PERIOD:
Free allocation: Free allocation was based on industry benchmarks. Free allocations for sectors not exposed to the risk of carbon leakage were phased out gradually. In 2013, these entities received 80% of their allowances for free, which was reduced to 30% by 2020.

A correction factor was implemented to reduce the allocated emissions allowances, determined by industry benchmarks and ensuring they aligned with the specified overall emissions cap.

Free allocation for aircraft operators was based on tonne-kilometer data for 2018 reported by individual aircraft operators, multiplied by the benchmark of 0.642 emissions allowances per 1,000 tonne-kilometers (same benchmark as in the EU ETS 1).

Auctioning: Allowances that were not allocated for free were auctioned. Auctions took place two or three times a year, depending on available auction volumes. Since January 2020, auctions are open to entities covered by the Swiss ETS and the EU ETS 1, as well as to non-compliance entities allowed to place bids in the EU ETS 1. In line with EU ETS 1 legislation, FOEN has the authority to cancel the auction if the clearing price is significantly below the prevailing secondary market price of the EU ETS 1. In such a situation, Swiss Emissions Allowances (CHUs) are transferred to subsequent auctions.

5% of the allowances are set aside in a reserve for new entrants and fast-growing operators.

Aviation: In line with EU ETS 1 regulations, starting in 2020, 15% of aviation sector allowances are auctioned. 3% were placed in the reserve dedicated to new and fast-growing operators. The remaining 82% was allocated according to sector-specific benchmarks

THIRD TRADING PERIOD:
Free allocation: As of 2022, the Swiss ETS applies the same allocation benchmarks as the EU ETS 1. Free allocation levels may be updated annually if production levels deviate at least 15 percentage points from the 2014 to 2018 base years. Free allocation in the aviation sector will be phased out by 2026, in line with the EU ETS 1 regulation. From 2026, a new incentive mechanism provides free emission allowances to aircraft operators to partially offset costs for SAF uplift. From 2026, further reductions in free emission allowances for industrial facilities were implemented to maintain alignment with EU ETS 1 reforms.

Auctioning: Since 2022, auction volumes have been subject to a market stability mechanism (see 'Market Stability Provisions' section).

USE OF REVENUES

Climate mitigation, Climate adaptation

Low-carbon innovation

From 2025, revenues from Swiss ETS auctions are earmarked to support *inter alia* the decarbonization of installations in the ETS and the mitigation of emissions from aviation.

FLEXIBILITY & LINKING

BANKING AND BORROWING
Banking within and across phases is allowed without limits. Banked allowances from Phase 3 of the EU ETS 1 can be used for compliance in the 2021 to 2030 trading phase.

Borrowing across phases is not allowed. Within a phase, allocated allowances from the current trading year may be used for surrender obligations of the prior year.

OFFSET CREDITS
The use of offset credits is not allowed.

QUALITATIVE LIMITS: Since 2021, offset credits cannot be used to meet compliance obligations. International offset credits were allowed up to 2020, subject to certain criteria. Most categories of credits from CDM projects in least developed countries were allowed. Credits from CDM and Joint Implementation projects from other countries were eligible only if registered and implemented before the end of 2012.

QUANTITATIVE LIMITS: During 2013 to 2020, the maximum amount of offset credits allowed into the system was set at 11% of average emissions allowances allocated in the voluntary phase, minus offset credits used in that same time period, multiplied by five.

Industries that entered the Swiss ETS in the second trading period could surrender offsets to cover up to 4.5% of their emissions. For aircraft operators, the quantitative limit was set at 1.5%.

LINKS WITH OTHER SYSTEMS

Switzerland concluded negotiations with the EU on linking their respective systems in 2015 and signed the agreement in 2017. Following legislative approval and ratification in 2019, the link entered into force in January 2020. Prior to that, revisions were made to align with the EU ETS 1 legislative framework.

Covered entities in the Swiss ETS can use EU Allowances (EUAs) for compliance, and vice versa. The two systems run separate auctions. Market participants from the EEA need an account in the Swiss Emissions Trading Registry in order to participate. From 2024, allowance transfers between the EU and Swiss registries are executed on a daily basis (Monday to Friday), with specific exceptions for certain dates. Exception dates are published in the Emissions Trading Registry.

OTHER CARBON PRICING INSTRUMENTS IN THE JURISDICTION

Carbon tax: CO_2 levy

COMPLIANCE

COMPLIANCE MECHANISM

Covered entities must surrender one compliance unit (CHUs or EUAs) per tCO_2e emitted for all their covered emissions.

COMPLIANCE PERIOD

One calendar year. Covered entities have until the end of September of the following year to surrender allowances.

MRV

FRAMEWORK: The MRV system is mandated by the CO_2 Act and regulated through the CO_2 Ordinance.

MONITORING: Monitoring plans are required for every installation and for every aircraft operator (no later than three months after the registration deadline). Monitoring plans must be approved by a competent authority. Emissions according to the Swiss CO_2 Ordinance (mainly CO_2 and N_2O) are subject to monitoring.

REPORTING: Annual monitoring report, based on self-reported information to be submitted by the end of March of the year following the compliance period.

VERIFICATION: FOEN may order third-party verification of the monitoring reports from installations and can take random samples to ensure consistency. Aircraft operators must have their monitoring reports verified by an accredited third-party verifier.

PENALTIES AND ENFORCEMENT

The penalty for failing to surrender sufficient allowances is set at CHF 125/tCO_2 (USD 150.36/ tCO_2). In addition to the fine, entities must surrender the missing allowances in the following year.

MARKET REGULATION

MARKET DESIGN

MARKET PARTICIPATION: Compliance entities, non-compliance entities (domestic and international) and individuals. Traders are subject to a holding limit of one million Swiss/EU allowances.

MARKET TYPES:

Primary: Single round sealed-bid uniform price auction, organized by the Swiss Emissions Trading Registry several times per year.

Secondary: CHUs are not traded on regulated trading platforms but may be traded over the counter. EUAs, which can be used for compliance in the Swiss ETS, are traded on multiple exchanges, including ICE Futures and EEX.

LEGAL STATUS OF ALLOWANCES:

Allowances do not qualify as financial instruments under Swiss financial market regulations. Emissions allowances may form the underlying asset of derivative contracts which are covered by the “Financial Market Infrastructure Act”.

MARKET STABILITY PROVISIONS

MARKET STABILISATION MECHANISM

Instrument type: Quantity-based instrument

Functioning: The authorities introduced a mechanism in 2022 that reduces auction volumes if the quantity of emissions allowances in circulation exceeds a certain threshold.

If the number of allowances in circulation exceeds 50% of the cap of the previous year, the market stabilization mechanism reduces the auction volume of the current year by 50%. In 2022, the mechanism reduced the auction volume from 460,000 to 230,000 and in 2023 from 580,000 to 290,000 allowances. In 2024, it reduced the auction volume from 820,000 to 410,000 allowances. In 2025, the mechanism halved the auction volume from about 700,000 to 350,000 allowances.

The unauctioned allowances lose their validity after the end of the compliance period. The mechanism is regularly reviewed against market dynamics and developments in the EU. The Swiss ETS is not subject to the EU ETS 1 Market Stability Reserve.

OTHER INFORMATION

INSTITUTIONS INVOLVED

Federal Office for the Environment (FOEN): Implementing authority, e. g., responsible for the registry, for auctioning allowances, receiving emission reports and enforcing compliance.

EVALUATION/ETS REVIEW

A revision of the CO_2 Act that covers the period from 2025 to 2030 was adopted by the Swiss Parliament in March 2024 and entered into force in January 2025. The new law provides for a linking-compatible revision of the Swiss ETS.

In July 2025, FOEN published an external evaluation of the Swiss ETS. Reviewing the period from 2013 to 2023, it found that the Swiss ETS had little impact on emission reductions.[3]

REGULATORY FRAMEWORK

→ **Federal Act on the Reduction of CO_2 Emissions** (CO_2 Act)
→ **Ordinance on the Reduction of CO_2 Emissions** (CO_2 Ordinance)

3 INFRAS (2025): **Evaluation of the Swiss Emissions Trading System (ETS)**. Part A: Evaluation Report. Commissioned by the Federal Office for the Environment (FOEN)

TÜRKİYE

TÜRKIYE NATIONAL EMISSIONS TRADING SYSTEM (TR ETS)

- First Climate Law enacted July 2025
- Carbon Market Board established
- Pilot ETS launch anticipated 2026

DESCRIPTION

In July 2025, Türkiye enacted its first Climate Law, establishing the legal basis for a national ETS (TR ETS) to support the country's net-zero target. The law created the Carbon Market Board, chaired by the Minister of Environment, Urbanization and Climate Change, which is responsible for approving national allocation plans, determining free allowance distribution, and setting offset credit limits. Day-to-day ETS management is assigned to the Directorate of Climate Change (DoCC). Energy Exchange Istanbul (EXIST) will operate the market and registry, with market oversight rules set by the Energy Market Regulatory Authority (EMRA).

Under the Climate Law, the pilot phase of the TR ETS is expected to start in 2026. Following the law's enactment, a draft ETS regulation dealing with implementation topics was published in July 2025 for stakeholder consultation.

These developments align with Türkiye's "2053 Long-Term Climate Strategy" and the "Medium-Term Program 2026 to 2028". Both documents anticipated TR ETS implementation upon completion of its legal framework while ensuring alignment with the EU's CBAM and channeling ETS revenues toward financing the green transformation. The Climate Law earmarks up to 10% of ETS revenues for just transition measures supporting vulnerable groups and sectors.

Türkiye submitted its updated Nationally Determined Contribution (NDC 3.0) in November 2025, pledging to limit emissions to 643 $MtCO_2e$ in 2035 – a reduction of 466 $MtCO_2e$ compared to the business-as-usual scenario. The country will also host COP 31 in 2026.

In force

Under development

Under consideration

SECTORS

POWER

INDUSTRY

EMISSIONS & TARGETS OF TÜRKİYE

OVERALL GHG EMISSIONS (including indirect CO_2, excluding LULUCF), **2023**

(in $MtCO_2e$, share of total in %)

Energy	395.4	72%
Industrial processes	70.9	13%
Agriculture	71.8	13%
Waste	14.1	3%
Total	**552.2**	

Energy industries	154.2	28%
Manufacturing industries and construction	61.5	11%
Transport	99.3	18%
Commercial, institutional, and residential	61.9	11%
Other energy	18.6	3%

GHG REDUCTION TARGETS

By 2030: Reduce GHG emissions by 41% relative to BAU, equivalent to 695 $MtCO_2e$ in 2030 (updated first NDC)

By 2035: Reduce GHG emissions by 42% relative to BAU, equivalent to 643 $MtCO_2e$ in 2035 (NDC 3.0)

By 2053: Net-zero GHG emissions

COMPLIANCE

MRV

FRAMEWORK: The Turkish MRV regulation establishes an installation-level system for GHG emissions for more than 800 facilities. It has operated at installation level since 2015 for the energy and industry sectors. Sector coverage includes the energy sector (e.g., total rated thermal input 20 MW or above for combustion installations) and a range of industrial activities listed in Annex-1 of the MRV regulation (e.g., oil refining, coke production, iron and steel, cement clinker, glass, ceramics, pulp and paper, nitric acid, ammonia, and other activities subject to Annex-1 capacity thresholds). The system covers about half of the country's aggregate emissions. The Climate Law assigns MRV management (for ETS purposes) to the DoCC and sets penalties linked to non-submission of verified annual emissions report.

MONITORING: Operators must monitor emissions in line with a monitoring plan which must be submitted for approval at least six months before actual monitoring starts.
MRV applies to the Annex-1 activity list of the MRV regulation and the thresholds specified therein.

REPORTING: Covered entities must submit their annual emission reports to the competent authority before the end of April 30 of the year following the reporting period.

VERIFICATION: Third-party verification is required before submission of the annual emissions report. Verification is annual (each annual emissions report must be verified). Verifiers must be accredited by the Turkish Accreditation Agency (TÜRKAK) in relevant fields according to TS EN ISO 14065. Legislation requires verifiers to be accredited in relevant fields according to ISO/IEC 17029 (with accreditation by TÜRKAK), and verification assignments to be made via MEDAS, a web-based system designed to ensure verifier independence.

PENALTIES AND ENFORCEMENT

Under the Climate Law, late submission of a verified emissions report triggers a fine of TRY 500,000-5,000,000 (USD 12,673-126,723) for MRV-regulated entities; for ETS entities, this fine is doubled and their registry accounts are restricted to surrender-only until submission. Operating without a valid GHG emissions permit results in either a fine of TRY 5 (USD 0.10) per tCO_2e (based on the highest verified annual emissions in the last five years) or TRY 1,000,000–10,000,000 (USD 25,346–253,455) if no verified report exists. Failure to surrender is fined at two times the higher recent primary/secondary price per missing allowance. Persistent shortfalls (<80% for three years) lead to GHG emissions permit cancellation and a temporary ban. The cap per infringement is TRY 50,000,000 (USD 1,267,273). Fines are discounted by 80% during the pilot phase.

OTHER INFORMATION

INSTITUTIONS INVOLVED

Carbon Market Board: Approves the national allocation plan and decides on free allocation, auction volumes, offset-use rates, and core ETS and international carbon market policies. Consists of relevant ministries and other public authorities.

Advisory Board: Takes advisory decisions for Carbon Market Board's consideration. Consists of business associations and NGOs.

Directorate of Climate Change (DoCC): The Competent Authority which administers ETS implementation and MRV. It manages allocation processes, runs the MRV process, regulates offsetting and the use of carbon credits in ETS compliance, develops policy on importing/exporting carbon credits, coordinates cooperation with other ETS, and supports arrangements for mutual recognition.

Energy Exchange Istanbul (EXIST): The ETS market operator, organizing and operating ETS trading, conducting financial settlement and related financial processes, maintaining the transaction registry system, and reporting market abuse.

The Energy Market Regulatory Authority (EMRA): Oversees and regulates market surveillance and supervision rules against market-distorting behavior in the ETS market, taking the Capital Markets Board's opinion.

Turkish Accreditation Agency (TÜRKAK): Accredits GHG verification bodies required for MRV, including accreditation to TS EN ISO 14065 for verification activities.

REGULATORY FRAMEWORK

- → Climate Law No. 7552 (2025)
- → Regulation on Monitoring and Reporting of GHGs (2014)
- → Regulation on the Verification of Greenhouse Gas Emission Reports and the Accreditation of Verification Bodies (2017)
- → Regulation on the DoCC (2022)
- → Presidential Decree establishing DoCC
- → Long-Term Climate Strategy (2025)
- → 2026 to 2028 Medium-Term Program (2025)

UNITED KINGDOM

UK EMISSIONS TRADING SCHEME (UK ETS)

- Began in 2021, following the UK's departure from the EU ETS 1
- Ongoing revision to develop and further expand the scheme, including integration of GHG removals and the introduction of a Carbon Border Adjustment Mechanism (CBAM) from 2027
- Agreement to work towards a link between the UK and EU ETS 1

ETS DESCRIPTION

The UK Emissions Trading Scheme (UK ETS) began operating in January 2021, following the departure of the UK (excluding power operators located in Northern Ireland) from the EU ETS 1. Verified emissions from stationary UK ETS operators currently account for around a quarter of the UK's territorial GHG emissions. The first phase of the UK ETS runs until 2030.

The UK ETS covers around 1,000 installations in the power and industrial sectors, as well as around 400 aircraft operators. Aviation activity covered includes flights within the UK as well as flights departing the UK to the European Economic Area (EEA) and Switzerland. Domestic maritime emissions will be brought under the UK ETS from July 1, 2026.

Covered entities must surrender allowances for all their in-scope emissions. Allowances are allocated primarily through auctioning, with a portion freely allocated to mitigate the risk of carbon leakage. The system has both a cost containment mechanism (CCM) and an auction reserve price (ARP), to support market stability.

The UK ETS cap trajectory and system design are consistent with the UK's target of achieving net zero by 2050. The UK ETS Authority has announced the expansion of the system to waste incineration and energy-from-waste, domestic maritime, and GHG removals, and proposed a framework to add further high emitting sectors. Additionally, the UK government is introducing a UK CBAM to begin on January 1, 2027, applying a carbon price to emissions-intensive imports. The European Commission and the UK government have announced their intention to pursue a link between their respective systems.

YEAR IN REVIEW

In 2025, the UK ETS Authority focused on implementing previously signaled reforms, preparing for scope expansion, and setting the stage for post 2030 design. It also progressed work to align free allocation reforms with the forthcoming UK CBAM. In February 2025, the Authority consulted on extending the UK ETS cap beyond 2030.

In May 2025, the UK and the EU agreed to work towards establishing a link between their ETSs. The envisaged link would enable mutual recognition of allowances for compliance, allow cross-system trading, and create the conditions for mutual CBAM exemptions. In July 2025, the Authority published interim responses to the 2024 consultations on scope expansion and greenhouse gas removals (GGRs), confirming key timelines: maritime coverage from July 2026 and a voluntary MRV-only period for waste incineration and energy from waste from January 2026 ahead of full inclusion from 2028. It also confirmed the integration of UK-based engineered removals from 2029, subject to legislation and further consultation.

1 The UK Government announced that domestic maritime emissions will be brought under the UK ETS from July 1, 2026. More details can be found in the 'Sectors and Thresholds' section.
2 In 2026, around 10 million additional allowances are expected to be auctioned from reserve pots (within the phase cap), leading to an effective cap of 87.4 $MtCO_2e$. Additional allowances will be auctioned from reserves between 2024 and 2027 to smooth the transition to the net zero cap.

SECTORS

- MINING AND EXTRACTIVES
- AVIATION
- POWER
- MARITIME[1]
- INDUSTRY

CAP OR TOTAL EMISSIONS LIMIT

Absolute cap
77.4 $MtCO_2e$ (2026)[2]

GREENHOUSE GASES

CO_2, N_2O, PFCs, CH_4

OFFSET CREDITS

Not allowed

ALLOCATION

Free Allocation: Fixed Benchmarking
Auctioning

AVERAGE 2025 PRICES

Average auction price: GBP 47.36 (USD 62.36)
Average secondary market price: GBP 50.34 (USD 66.28)

TOTAL REVENUE

GBP 19.7 billion (USD 25.9 billion) since the beginning of the program
GBP 2.4 billion (USD 3.2 billion) in 2025

In November 2025, the Authority published the main response to the maritime consultation, building on the interim response earlier in the year. This sets out the final details on the expansion to domestic maritime emissions, including cap adjustment to account for the expansion, exemptions, delay to the inclusion of offshore vessels until January 2027 and future reviews. Alongside this, the Authority also launched a consultation on bringing emissions from international maritime voyages into the UK ETS, proposing to include voyages starting or ending in the UK from 2028, covering 50% of emissions related to such journeys.

In October 2025, the UK ETS Authority launched a consultation to assess the impacts on regional air connectivity following the removal of UK ETS free allocation for aviation. The consultation sought views on the potential impact on remote domestic routes, whether government action was needed to address any negative effects, the criteria for such action, and the best way to provide support. The Authority emphasized that it was not looking to shield the aviation sector from wider market or regulatory factors. The consultation closed in December 2025.

The Authority confirmed that the second free allocation period will start in 2027, with 2026 treated as an extension of the current period, ensuring that the Free Allocation Review changes and CBAM introduction take effect together. In November 2025, the final Authority response to the Free Allocation Review also confirmed rules for the next allocation period from 2027 to 2030, maintaining carbon leakage protection for sectors most at risk, while free allocation for CBAM-covered sectors will be gradually phased out from 2027 to enable the mechanism to serve as the primary means of mitigating carbon leakage.

As announced in December 2023, and following policy consultation in 2024 and technical consultation in 2025, the government is legislating in the Finance Bill 2025-26 to introduce a CBAM from January 1, 2027. The UK CBAM will apply to goods from the following industrial sectors: aluminum, cement, fertilizers, hydrogen, iron, and steel.

In December 2025, the Authority announced the extension of the UK ETS into a second Phase running from 2031 to the end of 2040. The Authority also announced final decisions on markets policy for a standalone scheme. The Authority decided to retain and inflation-proof the Auction Reserve Price (ARP), with changes taking effect in 2026 and maintain the existing design and operation of the Cost Containment Mechanism (CCM).

EMISSIONS & TARGETS OF THE UK

OVERALL GHG EMISSIONS (including indirect CO_2, excluding LULUCF), 2023

(in $MtCO_2e$, share of total in %)

Energy	300.2	77%
Industrial processes	26.2	7%
Agriculture	41.4	11%
Waste	20.1	5%
Total	**388.0**	

Energy industries	68.7	18%
Manufacturing industries and construction	33.3	9%
Transport	109.3	28%
Commercial, institutional, and residential	74.0	19%
Other energy	14.9	4%

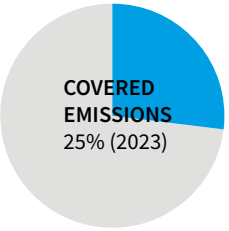
GHG REDUCTION TARGETS

By 2030: At least a 68% reduction in UK net GHG emissions from 1990 levels, including emissions from LULUCF (NDC 3.0)
By 2035: At least a 81% reduction in UK net GHG emissions from 1990 levels, including emissions from LULUCF (NDC 3.0)
Limit UK net GHG emissions to 965 $MtCO_2e$ over 2033 to 2037, representing ~77% reduction from 1990 levels, including emissions from LULUCF and international aviation and shipping ("Carbon Budget Order 2021")
By 2050: Net-zero UK GHG emissions, including emissions from LULUCF and international aviation and shipping ("Climate Change Act 2008 [2050 Target Amendment] Order 2019")

ETS COVERAGE & PHASES

COVERED EMISSIONS 2023

Verified ETS emissions: 96.8 $MtCO_2e$



PHASES

PHASE 1: Ten years (2021 to 2030)
PHASE 2: Ten years (2031 to 2040)

CAP OR TOTAL EMISSIONS LIMIT

An absolute cap limits the total emissions allowed in the system and is fixed ex-ante.

FIRST ALLOCATION PERIOD (2021 to 2026): 712 $MtCO_2e$, to be adjusted to reflect the hospital and small emitter opt-outs. The first allocation period was extended to include 2026, in order to ensure that changes to free allocation rules aligned with the introduction of the UK CBAM in 2027.

SECOND ALLOCATION PERIOD (2027 to 2030)[3]: 224 $MtCO_2e$, to be adjusted to reflect the hospital and small emitter opt-outs.

The cap was initially set at 5% below the UK's notional share of the EU ETS cap for its fourth phase. The cumulative caps for the first and second allocation periods were originally 736 $MtCO_2e$ and 630 $MtCO_2e$, respectively. However, they were reduced following a 2022 consultation on reforming the UK ETS, which included aligning the cap trajectory with the UK's net-zero emissions target. The cap for 2026 is 77.4 $MtCO_2e$. Allowances for the New Entrants' Reserve (NER) are part of the overall cap.

SECTORS AND THRESHOLDS

POWER SECTOR AND INDUSTRY: The UK ETS applies to a specified list of activities of installations in the power and industrial sectors. This includes activities involving the combustion of fuels in installations with a total rated thermal input exceeding 20 MW, as well as activities in refining, heavy industry, and manufacturing. Power generators in Northern Ireland still fall under the EU ETS, as they are part of the integrated Single Electricity Market with the Republic of Ireland.

In addition to the power sector's participation in the UK ETS, the UK's Carbon Price Support (CPS) policy imposes an additional carbon tax of GBP 18 (USD 23.70) per tCO_2 for power generators in Great Britain (excluding Northern Ireland) using fossil fuels.

From 2025, the UK ETS includes CO_2 venting from the upstream oil and gas sector, covering process emissions from extracted hydrocarbons that are vented or released through and/or unlit flare. No additional free allowances will be provided to impacted facilities.

Hospitals and Small Emitter (HSE) Scheme: Hospitals and small emitters with emissions below 25,000 tCO_2e per year and a net-rated thermal input lower than 35 MW can apply for HSE status. This allows them to monitor and report their annual emissions against individual and annual emission reduction targets, rather than surrender allowances for their emissions. This approach is similar to the UK's opt-out scheme in Phase 3 of the EU ETS.

Ultra-Small Emitter Exemption: For stationary installations emitting fewer than 2,500 tCO_2e per year, an ultra-small emitter exemption is in place. These installations are required to monitor emissions and notify the regulator if emissions exceed the threshold.

AVIATION: UK ETS obligations arise from flights within the UK, flights from the UK to a country within the EEA (excluding outermost regions) and to Switzerland, and flights between the UK and Gibraltar.[4] Commercial aircraft operators with fewer than 243 full scope flights in a four-month period for three consecutive four-month periods or total full scope annual emissions of less than 10,000 tCO_2 are exempt.

Non-commercial aircraft operators are not subject to UK ETS obligations if their annual full scope emissions fall below 1,000 tCO_2. Full scope flights are those departing from or arriving in an aerodrome in the UK, Gibraltar, an EEA state, Switzerland, or outermost regions other than an excluded flight. The UK is also considering how the UK ETS should interact with the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA). In December 2024, the UK Department for Transport launched a consultation on implementing CORSIA in the UK, in partnership with the UK ETS Authority, which includes options for how CORSIA could interact with the UK ETS on flights in scope of both schemes.

MARITIME: From July 1, 2026, the UK ETS will include domestic maritime emissions from ships of 5,000 gross tonnage or more on voyages between UK ports, including round trips. In addition, all emissions from ships of 5,000 gross tonnage or more while in a UK port will be captured by the scheme, regardless of origin or destination. Covered gases are CO_2, CH4, and N2O. Operators must prepare Emissions Monitoring Plans, appoint accredited verifiers, and submit annual emissions reports under an operator-based MRV framework. Government non-commercial vessels (e.g., military and emergency services) will be exempt. The framework will use standardized factors and zero-rate sustainable fuels on a tank-to-wake basis, with scope and thresholds subject to review as international regimes evolve.

In November 2025, the Authority launched a consultation on bringing emissions from international maritime voyages into the UK ETS, proposing to include voyages starting or ending in the UK from 2028, covering 50% of emissions related to such journeys.

WASTE INCINERATION AND ENERGY FROM WASTE: Waste incineration and energy from waste facilities are planned to enter the UK ETS from 2028, following a voluntary MRV-only period from 2026 to 2028. The scope will apply to facilities processing ≥3 tonnes/hour of nonhazardous waste or ≥10 tonnes/day of hazardous waste, including clinical waste incinerators, with high-temperature hazardous waste incinerators exempted. During the MRV period, operators must monitor, report, and verify emissions annually without compliance obligations, enabling the Authority to refine factors and policy design ahead of full inclusion.

POINT OF REGULATION

Point source

3 An Authority publication of December 2024 announced that the second allocation period would start in 2027. To effect this, a new allocation period will be created for a standalone year in 2026, however free allocations for this time will be calculated on the same basis as 2021 to 2025 free allocations.

4 Aviation activities included in the UK ETS are outlined in the "Greenhouse Gas Emissions Trading Scheme Order 2020".

TYPE OF ENTITIES

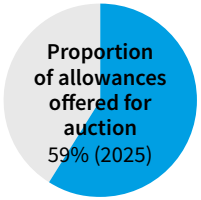
Installations, aircraft operators, maritime operators

NUMBER OF ENTITIES

A total of 1,058 entities in 2024, made up of 688 installations and 370 aircraft operators

ALLOWANCE ALLOCATION & REVENUE

ALLOWANCE ALLOCATION



AUCTIONING: Auctioning is the primary means of allowance allocation in the UK ETS. Auctions currently have a GBP 22[5] (USD 28.97) Auction Reserve Price (ARP), below which allowances will not be sold. Auctions clear even when not all allowances are sold. Unsold allowances are carried over to the next four auctions, up to a limit of 125% of allowances originally intended for sale at those auctions. If all four subsequent auctions reach the 125% limit, the remaining unsold allowances are transferred into the Market Stability Mechanism Account.

In 2025, ~51.5 million allowances were sold at auction, raising ~GBP 2.4 billion (~USD 3.2 billion). As set out in the auction calendar, ~52 million UK Allowances (UKAs) will be auctioned in 2026 across 25 auctions.

FREE ALLOCATION: A number of UKAs are allocated for free to industrial participants at risk of carbon leakage. The number of free allowances that an installation is entitled to is determined using the historical activity level, an industry benchmark, and a carbon leakage exposure factor (CLEF). The benchmarks and Carbon Leakage List (used to determine CLEFs) that have been used for the first allocation period are those used in Phase 4 of the EU ETS in the most part with an exception for the lime benchmark and malt extraction's carbon leakage status which were temporarily amended from 2024 to 2026. Historical activity levels for the first allocation period's free allocations are based on data collected under the EU ETS.

There is a maximum number of allowances allocated for free (the "industry cap"). Originally, an absolute value for the industry cap was established for each year of the first phase. This approach was changed following the 2022 consultation on reforming the UK ETS. From 2024, the industry cap is set at 40% of the total cap and reduces annually in line with the cap trajectory. If the total amount of free allocation exceeds the industry cap for a particular year, unallocated UKAs from the industry cap from the previous year, as well as allowances from a flexible reserve, can be used. As a last resort, a cross-sectoral correction factor would be applied to ensure a uniform reduction across eligible participants.

An initial allocation table, which lists the volume of free allowances for each installation for the first allocation period, was published in May 2021. Eligible installations must submit a verified Activity Level Report (see 'Compliance' section). If the data in the Activity Level Report shows an increase or decrease in activity of 15% or more from historical activity levels (calculated based on the previous two years' activity levels), their free allocation will be recalculated.

The Authority completed the Free Allocation Review, launched in 2021 and run in two phases. The final Authority Response, published in November 2025, confirms that the second allocation period will begin in 2027, with 2026 treated as an extension of the first period. This ensures that free allocation reforms take effect alongside the introduction of the UK CBAM.

Key decisions include:

- Operators able to choose to have activity data for either the years 2020 only, or 2020 and 2021 excluded for the purpose of determining historical activity level for the 2027 to 2030 allocation period;
- The retention of current benchmarks for 2027, with the intent to adopt updated EU benchmark values from 2028 to 2030;
- Retaining the current carbon leakage list;
- No introduction of tiering of free allocation for sectors at risk of carbon leakage;
- No early phase out of free allocations for sectors not on the carbon leakage list;
- No additional methodologies to be introduced in 2027, which would introduce conditions on the provision of free allocation; and
- A gradual phase out of free allocations for sectors covered by the UK CBAM beginning in 2027, with an indicative phase out trajectory of nine years.

The Authority also confirmed updated rules for ceased installations.

Free allocation for aircraft operators has been fully phased out from January 1, 2026, as previously announced.

5 The ARP will be adjusted for inflation to maintain its real value, a nominal increase from GBP 22 to GBP 28, in 2026.

CBAM: The UK CBAM will work alongside the UK ETS to mitigate the risk of carbon leakage from imports. The government confirmed that the mechanism will apply from 2027.

The CBAM will initially cover aluminum, cement, fertilizers, hydrogen, and iron and steel, and will initially account for direct (process) emissions embedded in imported goods. Indirect (electricity-related) emissions will be delayed until 2029 at the earliest.

To ensure consistency between the domestic ETS and the border measure, free allocation for sectors covered by the CBAM will be gradually adjusted from 2027. This adjustment would reflect the introduction of a carbon price on imports, reducing the need for free allocation as a carbon leakage mitigation tool. The revised Free Allocation framework ensures that CBAM alignment and free allocation phase-in/out schedules are synchronized.

NER: A reserve of free allowances is set aside for installations that become eligible for participation within Phase 1 and for covered installations that significantly increase their activity level. The number of free allowances for new entrants is determined based on their activity in the first year of operation, the industry benchmark, and CLEF.

USE OF REVENUES

General budget, including debt reduction

Revenues from UK ETS auctions accrue to the general budget and are not earmarked.

FLEXIBILITY & LINKING

BANKING AND BORROWING

Banking is allowed, and allowances remain valid in future years of the scheme.

Limited and implicit borrowing is allowed, i. e., the use of UKAs allocated for free in the current year for compliance in the previous year.

OFFSET CREDITS

The use of offset credits is not allowed.

Engineered Greenhouse Gas Removals (GGRs) are set to integrate into the UK ETS from 2029, with legislation to be finalized by 2028. In the initial phase, credits from eligible domestic projects would replace allowances one-for-one without changing the cap level. Credits will be issued ex-post after verified sequestration and must meet a minimum 200-year permanence requirement.

The Authority is considering differentiating removal allowances from regular allowances and it is assessing auction mechanisms to support market access, alongside potential future inclusion of high-quality nature-based removals.

LINKS WITH OTHER SYSTEMS

The UK ETS is not linked with any other system.

The EU and UK agreed to work towards the linking of their ETSs, as set out in the Common Understanding at the May 19, 2025 EU-UK Summit. The envisaged link would enable mutual recognition of allowances for compliance, allow cross-system trading, and create the conditions for mutual CBAM exemptions.

OTHER CARBON PRICING INSTRUMENTS IN THE JURISDICTION

Carbon tax: UK Carbon Price Support (CPS)

The CPS, introduced in 2013, is an additional GBP 18/tCO_2 (USD 23.70/tCO_2) tax on emissions from fossil fuel power generation in Great Britain (excluding Northern Ireland), on top of the UK ETS carbon price.

Domestic crediting mechanisms: UK Woodland Carbon Code and Peatland Code

COMPLIANCE

COMPLIANCE MECHANISM

Covered entities must surrender one compliance unit (UK ETS allowance) per tCO_2e emitted for all their covered emissions, and allocation is based on auctions and free allocation.

COMPLIANCE PERIOD

One year. Covered entities have until the end of April of the year following the reporting period to surrender allowances. These provisions are the same as under the EU ETS 1.

MRV

FRAMEWORK: The UK ETS has adopted the MRV framework of Phase 4 of the EU ETS 1, including discretionary changes regarding reduced frequency of improvement reporting and the simplification of monitoring plans. “UK ETS Order 2020” gives effect (with modifications) to the “Monitoring and Reporting Regulation (MRR) 2018” and the “Verification Regulation (VR) 2018”.

MONITORING: The UK ETS requires continuous, year-round monitoring under approved plans, with year-end compilation. Maritime MRV starts July 1, 2026, with operator-based EMPs and verification. Waste has a voluntary MRV-only period from 1 January 2026 ahead of 2028 inclusion. Installations with Hospital and Small Emitter (HSE) status or Ultra-Small Emitter (USE) status are still required to monitor their emissions and notify the regulator if they exceed relevant thresholds.

REPORTING: Annual self-reporting. Annual emissions report (and activity level report where applicable) due March 31 for the prior year. USEs are required to submit verified emissions reports once every five years to apply for the status.

VERIFICATION: Verification by independent accredited verifiers is required before the end of March each year. Verifiers must be accredited by the UK Accreditation Service (UKAS) in accordance with the "Verification Regulation (EU) 2018/2067", which is based on the ISO/IEC 17029 and ISO 14065 international standards for GHG validation and verification bodies.

PENALTIES AND ENFORCEMENT

Regulated entities must pay an excess emissions penalty for each tCO_2e emitted not matched by a surrendered allowance. This penalty is equal to GBP 100 per tCO_2e (USD 131.67) (March 2021 value) adjusted for inflation over time. Paying this penalty does not remove the obligation to surrender an allowance. A new deadline for any outstanding deficit can be set via issuance of a 'deficit notice', and non-compliance with this will result in a penalty of 1.5x the relevant carbon price, and may lead to escalating daily GBP 1,000 (USD 1,316) penalties if it continues to remain unmet. The names of non-compliant operators are published.

MARKET REGULATION

MARKET DESIGN

MARKET PARTICIPATION: Compliance entities, non-compliance entities (domestic and international), and individuals.

MARKET TYPES:

Primary: The majority of allowances are allocated through auctioning. Auctions are held every two weeks, with dates and allowance amounts set out in the auction calendar. Compliance entities, financial institutions, and business groupings and public bodies acting on behalf of compliance entities can participate. Auctions are managed by ICE Futures Europe.

Secondary: UKAs are traded on the ICE Futures Europe exchange. Contracts for daily futures, futures, and options on futures contracts are available. Participants may also trade allowances over the counter. Participants in the secondary market must have an account in the UK Registry. Participants trading on the exchange must meet the requirements of the ICE Futures Exchange.

LEGAL STATUS OF ALLOWANCES: The "Recognized Auction Platforms (Amendment and Miscellaneous Provisions Regulations 2021) Affirmative Statutory Instrument" establishes UKAs as financial instruments.

MARKET STABILITY PROVISIONS

COST CONTAINMENT MECHANISM (CCM)

Instrument type: Price-based instrument

Functioning: The UK ETS has a CCM to avoid price spikes by auctioning additional allowances. If the CCM is triggered, the Authority can decide on whether and how to intervene. The intervention can include: redistributing allowances between the current year's auctions; bringing forward UKA supply from future years; drawing from the Market Stability Mechanism Account; auctioning up to 25% of remaining allowances in the NER; or auctioning allowances left unallocated from the industry cap in a given year.

The CCM is triggered if, for six consecutive months, the allowance price is three times the average allowance price in effect in the UK in the two preceding years.

Following public consultation, in December 2025 the UK ETS Authority announced its decision to maintain the existing design and operation of the CCM.

AUCTION RESERVE PRICE (ARP)

Instrument type: Set price

Functioning: The ARP establishes a minimum bid price at auctions. The ARP is currently set at GBP 22 (USD 28.97).

Following public consultation, in December 2025 the UK ETS Authority announced its decision to retain and inflation-proof the ARP to maintain its real value, thus implementing an inflation-based increase since its introduction (i.e., from GBP 22 [USD 28.97] to GBP 28 [USD 36.87]) in 2026 and increase the value yearly by inflation from 2027.

SUPPLY ADJUSTMENT MECHANISM (SAM)

Following public consultation, in December 2025, the UK ETS Authority announced that it would not introduce a SAM for a standalone UK ETS.

OTHER INFORMATION

INSTITUTIONS INVOLVED

UK Climate Change Committee (CCC): An independent, statutory body established under the Climate Change Act 2008. Its primary role is to advise the UK government and devolved administrations on emissions targets and on the progress in their achievement. The CCC provides expert advice on the design and implementation of the UK ETS, on its effectiveness in reducing emissions and reports on its progress.

UK ETS Authority: Overall responsibility for designing and implementing the UK ETS. It is composed of representatives of the UK government (Department for Energy Security and Net Zero (DESNZ), HM Treasury (HMT) and Department for Transport (DfT)), Scottish government, Welsh government, and the Department of Agriculture, Environment and Rural Affairs of Northern Ireland.
Regulators (Environment Agency; Scottish Environment Protection Agency; Natural Resources Wales; Northern Ireland Environment Agency; Offshore Petroleum Regulator for Environment and Decommissioning): Responsible for enforcing compliance with the UK ETS Regulations. The Environment Agency serves as the registry administrator and is responsible for the management of accounts in the UK Emissions Trading Registry.

EVALUATION/ETS REVIEW

Phase 1 includes two mandatory whole-system reviews. The first review was published at the end of 2023, and the second must be published by the end of 2028.

The UK ETS evaluation program supports the mandatory review process. The report for Phase 1 of the UK ETS evaluation was published in December 2023.[6]

Phase 2 of the evaluation, assessing quantitative impacts of the UK ETS, is scheduled to be published in 2026.

REGULATORY FRAMEWORK

→ **The Greenhouse Gas Emissions Trading Scheme Order 2020**
→ **The Greenhouse Gas Emissions Trading Scheme Auctioning Regulations 2021**

6 The report is **available online.**

UKRAINE

- "Law on Basic Principles of State Climate Policy" mandates an ETS
- First operational phase to commence in 2028
- Action Plan for the Establishment of a National GHG ETS approved in February 2025

ETS DESCRIPTION

Ukraine plans to establish a national ETS in line with its obligations under the "Ukraine-EU Association Agreement", which entered into force in September 2017. Issues related to climate change are addressed in Article 365 (c) Title V and in Annex XXX to the agreement, which outlines steps for the implementation of a national ETS, including:

- adopting national legislation and designating a competent authority or authorities;
- establishing a system for identifying relevant installations and GHGs;
- developing a national allocation plan to distribute allowances;
- establishing a system to issue allowances to be traded domestically; and
- establishing MRV and enforcement systems, as well as public consultations procedures.

The country has since established a national MRV system, with its scope partially covering activities similar to the EU ETS, to provide a solid basis for the upcoming ETS. Since 2021, the MRV procedures have been applied by regulated installations. From 2022, due to the Russian war of aggression against the country, the MRV system was implemented on a voluntary basis. In January 2025, the Ukrainian Parliament reintroduced mandatory reporting under the MRV system. For those located in areas where military operations are taking place or in the temporarily occupied territory, some flexibility applies.

In October 2024, the Ukrainian Parliament approved the Law on the Basic Principles of State Climate Policy, mandating the establishment of an ETS. According to the law, the Ukrainian ETS will have an absolute cap on emissions for covered sectors and will be established by national law.

From 2023, work on the "Roadmap on the Introduction of a GHG ETS" has been ongoing. In February 2025, a governmental decree "On approval of Action Plan for the establishment of a national GHG trading system", was approved, following stakeholder consultation in 2024. The action plan stipulates that the first operational phase of the ETS will commence from 2028, with the launch of the second operational phase starting "not earlier than in three years after martial law will be halted or cancelled". The key design elements of the ETS should "account for national circumstances" and be aligned with the Directive 2003/87/EU.

EMISSIONS & TARGETS OF UKRAINE

OVERALL GHG EMISSIONS (including indirect CO_2, excluding LULUCF), **2023**
(in $MtCO_2e$, share of total in %)

Energy	164.0	71%
Industrial processes	21.1	9%
Agriculture	33.0	14%
Waste	14.8	6%
Total	**232.9**	

Energy industries	61.3	26%
Manufacturing industries and construction	15.8	7%
Transport	27.0	12%
Commercial, institutional, and residential	16.4	7%
Other energy	43.5	19%

GHG REDUCTION TARGETS

By 2035: Economy-wide net domestic reduction of more than 65% in GHG emissions compared to 1990 (NDC 3.0)
By 2050: Climate neutrality (Law on the Basic Principles of State Climate Policy)

OTHER CARBON PRICING INSTRUMENTS IN THE JURISDICTION

Carbon tax: CO_2 tax

COMPLIANCE

MRV

FRAMEWORK: MRV rules are set in the dedicated law and two cabinet orders (see 'Regulatory Framework' section).
MONITORING: Monitoring is required annually for CO_2 emissions from the following activities:

- fuel combustion in installations over 20 MW;
- oil refining;
- the production of coke, metal ores, pig iron, steel, ferrous alloys including ferroalloys (if the total nominal thermal capacity of combustion units exceeds 20 MW), cement clinker, lime or the calcination of dolomite or magnesite (with a production capacity exceeding 50 tonnes per day), nitric acid, ammonia, and glass production (with a production capacity exceeding 20 tonnes per day);
- N_2O emissions from the production of nitric acid.

Monitoring takes place according to Monitoring Plans, approved by the Ministry of Economy, Environment and Agriculture of Ukraine.

REPORTING: Covered entities are obliged to submit a verified annual report on GHG emissions to the Ministry of Economy, Environment and Agriculture of Ukraine by the end of March of the following year.

VERIFICATION: Emissions data reports and their underlying data require third-party verification by an accredited auditor.

OTHER INFORMATION

INSTITUTIONS INVOLVED

Ministry of Economy, Environment and Agriculture of Ukraine: Competent authority for implementing the MRV law and the upcoming ETS.
National Accreditation Agency of Ukraine: Accredits third-party verifiers.
State Ecological Inspection of Ukraine: Controlling compliance with MRV requirements.
National Center for GHG Emissions: Authorized institution empowered to perform certain functions in the field of MRV delegated by the Ministry of Economy, Environment and Agriculture of Ukraine.

REGULATORY FRAMEWORK

- → **Law on the Basic Principles of State Climate Policy**
- → **Law on the principles of monitoring, reporting and verification of greenhouse gas emissions** (MRV law)
- → **Order of the Cabinet of Ministers on approval of the procedure for monitoring and reporting on GHG emissions**
- → **Association Agreement between the European Union and its Member States, of the one part, and Ukraine, of the other part**
- → **Order of the Cabinet of Ministers on approval of an action plan for the national GHG ETS development**

03 FACTSHEETS

North America

ALBERTA

TECHNOLOGY INNOVATION AND EMISSIONS REDUCTION REGULATION

- Compliance obligations based on emissions intensity benchmarks for each regulated facility
- Six different means of compliance, including emissions performance credits and paying a set price
- First industrial carbon pricing emission reductions system in North America, beginning in 2007

ETS DESCRIPTION

The Alberta Technology Innovation and Emissions Reduction (TIER) Regulation is the province's industrial carbon pricing and emissions trading system. The "Technology Innovation and Emissions Reduction Implementation Act" paved the way for the system, which was implemented in January 2020, replacing former regulations for carbon pricing that had been in place since 2007. It aims to help industrial facilities identify innovative ways to reduce emissions and invest in clean technology, supporting competitiveness and resource efficiency.

The TIER Regulation applies to: (1) large emitters, defined as those that have emitted at least 100,000 tCO_2e in 2016, or any subsequent year, or those that have imported more than 10,000 tonnes of hydrogen in 2023 or any subsequent year; (2) opted-in facilities with emissions under 100,000 tCO_2e/year but more than 2,000 tCO_2e/year; and (3) opted-in aggregate facilities that include two or more small conventional oil and gas facilities.

Covered entities must reduce their emissions intensity (emissions per unit of production) by a set percentage each year, based on one of two benchmarks. Under the facility-specific benchmark methodology, a facility is required to reduce emissions intensity relative to its historical production-weighted average emissions intensity. High performance benchmarks are set based on the average emissions intensity of the most efficient facilities. In most cases, a covered entity is subject to the less stringent of the two benchmarks, and both benchmarks tighten annually.

Covered entities must fulfil a compliance obligation for emissions that exceed their annual emissions limit, determined by their production levels and emissions intensity benchmark. Entities that outperform their targets are granted emission performance credits (EPCs), which can be sold or used in future years. Those that exceed their limits are required to provide compensation by either:

(1) purchasing EPCs from other regulated facilities;
(2) paying into the TIER fund to purchase a fund credit for each tonne of excess emissions produced at the prescribed TIER Fund Price, set at CAD 95 [USD 67.95] per tonne from 2025 onward;
(3) purchasing emissions offset credits generated within Alberta under an approved offset protocol;
(4) making direct investments in on-site emissions reduction technologies; or
(5) using capture recognition tonnes or sequestration credits.

In 2023, TIER covered 164.7 $MtCO_2e$ of emissions, which represents about 63% of Alberta's total emissions for the year. The total emissions limit under the Alberta TIER Regulation is the sum of the annual emissions limits based on emissions intensity benchmarks for all covered entities. The limit is therefore not set ex-ante and is only known after the compliance period ends.

In force
Under development
Under consideration

SECTORS

- MINING AND EXTRACTIVES
- POWER
- INDUSTRY
- FUEL USE IN AGRICULTURE AND/OR FORESTRY

GREENHOUSE GASES

CO_2, CH_4, N_2O, HFCs, PFCs, NF_3, SF_6

CAP OR TOTAL EMISSIONS LIMIT

Intensity-based emissions limit

OFFSET CREDITS

Domestic offset credits are allowed with quantitative limits.

ALLOCATION

Free Allocation: Output-based Benchmarking

AVERAGE 2025 PRICES

Set TIER Fund price: CAD 95 (USD 67.95)

TOTAL REVENUE

CAD 5 billion (USD 3.9 billion) since since program start
CAD 466.1 million (USD 333.4 million) in 2025 (for the 2024 compliance year)

The TIER Regulation meets Canada's federal stringency requirements for carbon pollution pricing systems while achieving emissions reductions using a cost-efficient approach that is tailored to Alberta's industries and priorities.

YEAR IN REVIEW

In May 2025, the government of Alberta announced a freeze of the TIER Fund price at CAD 95 (USD 67.95) per tonne of CO_2e, halting the previously scheduled annual increases that were set to reach CAD 170 (USD 121.60 [1]) per tonne by 2030. This decision was made in response to economic concerns, including global trade uncertainty and industry feedback regarding competitiveness.

In September 2025, two amendments to the TIER regulation were announced. A new Direct Investment Compliance Pathway was introduced, allowing covered entities to meet part of their compliance obligations through direct investments in on-site emissions reduction technologies. Entities can thus be credited for low-carbon investments in on-site projects.

A second amendment allowed smaller facilities to opt out of the system. Facilities below the regulated emissions threshold that had voluntarily opted into TIER instead of facing the federal fuel charge could choose to opt out early, following the federal government's elimination of the Canadian federal fuel charge as of April 2025.

Following the changes at the federal level, in response to concerns about the continuation of Alberta's key climate policies, the provincial government publicly reaffirmed its commitment to maintaining the TIER system. Industry feedback showed strong support for Alberta's approach, with 95% of respondents believing the province should maintain an industrial carbon market.

EMISSIONS & TARGETS OF ALBERTA

OVERALL GHG EMISSIONS (including indirect CO_2, excluding LULUCF), **2023**
(in $MtCO_2e$, share of total in %)

Energy	229.0	87%
Industrial processes	12.3	5%
Agriculture	17.0	7%
Waste	4.7	2%
Total	**263**	

Energy industries	121.4	46%
Manufacturing industries and construction	9.2	4%
Transport	37.3	14%
Commercial, institutional, and residential	16.0	6%
Other energy	45.5	17%

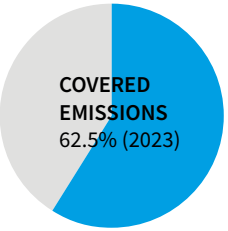
GHG REDUCTION TARGETS

By 2050: Carbon neutrality ambition
Alberta Emissions Reduction and Energy Development Plan

ETS COVERAGE & PHASES

COVERED EMISSIONS 2023

Verified ETS emissions: 164.7 $MtCO_2e$



CAP OR TOTAL EMISSIONS LIMIT

The total emissions limit under TIER changes as a function of production (output) and is the sum of the bottom-up facility-level emissions limits for all individual covered entities. However, the bottom-up emissions limits do not represent an absolute cap.

In the 2024 calendar year, TIER-covered entities emitted 164.7 $MtCO_2e$. Overall, there were 18.6 $MtCO_2e$ of true-up compliance obligations and 6.62 $MtCO_2e$ of EPCs were requested.

1 USD conversion based on 2025 IMF exchange rate; actual future exchange rates may differ.

SECTORS AND THRESHOLDS

SECTORS: Mining and extractives, power, industry, Fuel use in agriculture and/or forestry

INCLUSION THRESHOLDS: Coverage is mandatory for facilities with emissions equal to or exceeding 100,000 tCO_2e GHGs in 2016, or any subsequent year, or facilities that import more than 10,000 tonnes of hydrogen in 2023 or any subsequent year.

Facilities with annual emissions fewer than 100,000 tCO_2e may opt-in to the TIER system if they compete against a facility regulated under TIER, or have annual emissions greater than 2,000 tCO_2e and are in an emissions-intensive, trade-exposed (EITE) sector.

The owner or operator of multiple small conventional oil and gas facilities can also opt-in to the TIER system by applying to be covered as an aggregate facility.

POINT OF REGULATION

Point source

TYPE OF ENTITIES

Facilities (stationary fuel combustion, industrial processes, venting, flaring, fugitive/other, on-site transportation, waste and wastewater, formation CO_2)

NUMBER OF ENTITIES

In the 2024 calendar year, TIER covered 560 facilities. The number of sites is orders of magnitude higher as the opted-in conventional oil and gas facilities aggregate numerous small operations.

ALLOWANCE ALLOCATION & REVENUE

ALLOWANCE ALLOCATION

Allocation is determined in relation to annual emissions limits based on emissions intensity benchmarks. Entities that emit less than their emissions limit receive a corresponding amount of EPCs for free from the government of Alberta. This is similar to free allocation based on benchmarks. These compliance units can be banked or sold to entities that exceed their emissions limits.

Facilities with emissions above their limit must provide compensation by a prescribed deadline for each tCO_2e above the limit.

Emissions reduction requirements under the TIER Regulation are set using two benchmarking approaches:

1. High-performance benchmarks (HPBs) that recognize and reward the most efficient facilities in an industry, or
2. Facility-specific product benchmarks (FSBs) which set a reduction target relative to a facility's historic performance.

The reduction target is being tightened at a rate of 2% per year for FSBs and HPBs, including heat, hydrogen, and electricity, since 2023.

Facilities comply with the least stringent of either benchmark.

HPB approach: Benchmarks are set based on the average emissions-intensity of the most emissions-efficient facilities producing each benchmarked product over reference years. If fewer than ten facilities are producing a product, the benchmark is set based on the emissions intensity of the best-performing facility. Where a facility produces a product that has not received an HPB, the FSB applies.

FSB approach: Facilities are required to reduce emissions intensity relative to the facility's historical production-weighted average emissions intensity. FSBs are not applicable for industrial heat or hydrogen or for facilities in the electricity sector.

A facility that initiated the capture of CO_2 and holds the sequestration credit generated from the associated emission offset may apply to convert the sequestration credit into a capture recognition tonne. Capture recognition tonnes may only be used for the year in which the CO_2 was sequestered, and they cannot be traded. Capture recognition tonnes are deducted from the calculation of a facility's total regulated emissions and are therefore not subject to the credit use limit in TIER. Sequestration credits are similar to EPCs and can be traded, banked or used to meet a facility's compliance obligation. Sequestration credits expire six years from the year the sequestration occurred.

USE OF REVENUES

- General budget, including debt reduction
- Climate mitigation & adaptation
- Low-carbon innovation

Revenues (i. e., compensation payments of covered facilities that exceed their set emissions limit) are designated to the TIER Fund, which funds a variety of GHG reduction programs and low-carbon innovation projects and climate resilience (e. g., investment in carbon capture, utilization and storage [CCUS]).

Payments into a central fund for compliance purposes from 2007 to 2024 totaled approximately CAD 5 billion (USD 3.8 billion).

Fund investments in technology and innovation have been approximately CAD 2.8 billion (USD 2 billion) from 2009 through 2022.

In total, Alberta has invested or committed approximately CAD 2 billion (USD 1.4 billion) to CCUS projects and programs since 2009, with the Alberta Carbon Capture Incentive Program (ACCIP) expected to provide another CAD 3.2 billion to CAD 5.3 billion (USD 2.3 billion to 3.8 billion) of support between 2024 and 2035.

FLEXIBILITY & LINKING

BANKING AND BORROWING

EPCs can be banked, transferred, or retired by facilities subject to the TIER Regulation to meet their reduction requirements. The expiry length for EPCs varies based on reduction year and ranges from five to eight years. Borrowing is not allowed.

OFFSET CREDITS

The use of Alberta-based emissions offset credits is allowed. The eligibility criteria for these credits are set in the TIER Regulation, the "Standard for GHG Emission Offset Project Developers", and the "Carbon Offset Emission Factors Handbook".

The government approves eligible project types through methodologies (quantification protocols) for the generation of Alberta emission offset credits. A quantification protocol outlines the eligible activity or activities and provides the appropriate monitoring, measurement, quantification, and verification procedures for the emission reduction or net sequestration resulting from the implementation of an eligible activity.

Emission offsets created using the CCS or enhanced oil recovery quantification protocols may be converted to sequestration credits at the request of the project developer. This conversion cannot be undone. Sequestration credits can be traded, banked, or used to meet a facility's compliance obligation. These credits expire six years from the year the sequestration occurred. Sequestration credits are eligible for stacking with the federal Clean Fuels Regulation, meaning that the same activity can generate credits both in TIER and the CFR.

QUALITATIVE LIMIT: High-level criteria for emissions offset projects that are established under the TIER regulation include, but are not limited to, the project standard, the applicable quantification protocol, and criteria set out in the regulation requiring that the emission reduction or net sequestration activity:

- must occur in Alberta;
- must meet additionality requirements (including legal additionality);
- must result from an action taken that is not required by law;
- must result from action taken and occurring after January 2002;
- must be real and demonstrable;
- must be quantifiable and measurable using replicable techniques; and
- must not have reduced the total covered emissions of a TIER facility.

QUANTITATIVE LIMIT: The use of emission offset credits and EPCs to meet a facility's total compliance obligation was limited to 60% in 2023 and increases by 10 percentage points annually until it reaches 90% in 2026.

Transactions between buyer and seller are managed outside the Alberta Emissions Offset Registry; the registry is a tracking and listing service.

7.2 million credits were surrendered for compliance in 2024. As of the end of 2025, over 75 million offset credits had been retired for carbon pricing compliance obligations in Alberta since 2007, with a further 25 million credits available in the market. Credits stem mainly from activities such as agricultural management, renewable energy generation, CCUS, and methane reductions from pneumatic devices, among other eligible activities.

As of December 15, 2025, more than 400 carbon offset projects have been registered since 2007, and 18 different carbon offset protocols are available.

LINKS WITH OTHER SYSTEMS

The TIER system is not linked with any other system.

A subset of TIER offset types are recognized as compliance units under the Canadian (federal) output-based pricing system.

Some sequestration credits generated in the TIER system allow projects to also be recognized under the Canadian (federal) Clean Fuel Regulations.

OTHER CARBON PRICING INSTRUMENTS IN THE JURISDICTION

Domestic offsetting mechanism: Alberta Emission Offset System

COMPLIANCE

COMPLIANCE MECHANISM

Covered entities must surrender one compliance unit per tCO_2e that exceeds the facility's annual emissions limit.

The six compliance options under the TIER system are:

- on-site emission reductions;
- use of EPCs produced and traded by facilities that surpass their emission reduction obligations;
- use of Alberta-based emissions offset credits
- use of Alberta-based sequestration credits;
- making direct investments in on-site emissions reduction technologies; and
- purchase fund credits by paying into the TIER fund at the prescribed price, which is equivalent to the Canadian federal minimum carbon price of CAD 95 (USD 67.95) per tCO_2e for the 2025 compliance year.

Maximum proportion of compliance that can be met with credits: 80% of a facility's total compliance obligation in 2025, increasing to 90% in 2026.

COMPLIANCE PERIOD

One calendar year.

MRV

FRAMEWORK: The rules for reporting GHG emissions are outlined in the TIER Regulation and "Alberta Greenhouse Gas Quantification Methodologies".

MONITORING: Continuous monitoring with annual compliance reports. Thresholds for MRV are the same as for compliance under TIER.

Alberta has a separate reporting-only system for facilities that emit GHGs but are not covered by TIER. This is governed by the "Specified Gas Reporting Regulation" (SGRR) and covers all industrial sectors that emit specified gases (CO_2, CH_4, N_2O, SF_6, HFCs, PFCs, NF_3). Thresholds for SGRR are lower than TIER, as facilities emitting at least 10,000 tCO_2e/year must report annually. This includes facilities in sectors such as:

- Manufacturing
- Mining (non-oil sands)
- Waste management
- Agriculture (certain operations)
- Commercial buildings (if above threshold)
- Any other industrial operations

REPORTING: All facilities are required to submit verified annual compliance reports annually by the end of June of the year following the compliance year. Facilities with annual emissions in excess of 1 million tCO_2e and significant compliance obligations are also obliged to submit an annual compliance forecasting report.

VERIFICATION: Reports must be verified by a qualified third-party assurance provider.

PENALTIES AND ENFORCEMENT

If a covered entity does not meet its compliance obligation, the maximum amount of the fine can be up to CAD 400 (USD 286.12) for every tCO_2e by which they exceed their emission limit. Fines are limited to CAD 50,000 (USD 35,765) for individuals and CAD 500,000 (USD 357,650) for corporations.

MARKET REGULATION

MARKET DESIGN

MARKET PARTICIPATION: The main market for credits (Alberta offsets, EPCs, sequestration units) is directed at compliance entities, including both mandatory and voluntary entities (for inclusion thresholds see 'Sectors and Thresholds' section.) Offset project developers also participate by generating Alberta emission offsets, then offering those credits for purchase and use.

MARKET TYPES:

Primary: Compliance units are currently not auctioned.

Secondary: Covered entities may purchase EPCs from other regulated entities that have outperformed their compliance obligation. Transactions of EPCs are conducted via the Alberta Emission Performance Credit Registry (EPCR), which also handles the allocation, transfer, and retirement of EPCs. Transactions of offset credits and sequestration credits are conducted via the Alberta Emissions Offsets Registry. Transactions are negotiated outside the registries. Trading is mainly conducted over-the-counter (OTC) through bilateral agreements between parties Since 2024, the ICE NGX exchange offers further options for trading EPCs and Alberta offset credits.

LEGAL STATUS OF ALLOWANCES: EPCs are considered revocable licenses.

MARKET STABILITY PROVISIONS

TIER FUND

Instrument type: Set price or set price trajectory

Functioning: To compensate for emissions exceeding the facility's annual emissions limit, covered entities can purchase and surrender fund credits by paying into the TIER Fund at the prescribed TIER Fund price. The TIER Fund price, which functions as a price ceiling, is CAD 95 (USD 67.95) per tCO_2e for the 2025 compliance year, and onward.

OTHER INFORMATION

INSTITUTIONS INVOLVED

Government of Alberta, Alberta Environment and Protected Areas: Responsible for establishing the regulatory framework of the TIER system, enforcement of the regulation, and allocation of EPCs.

Alberta Carbon Registries: Comprises the Alberta Emission Performance Credit Registry, which handles the allocation, transfer, or retirement of EPCs, and the Alberta Emissions Offset Registry, which handles the registration and transactions of emission offset credits.

Both registries are operated by CSA Group in coordination with the government of Alberta. The CSA Group provides the infrastructure and public transparency for both registries.

EVALUATION/ETS REVIEW

The government of Alberta completed its latest revision of the TIER Regulation in December 2025. The TIER Amendment Regulation includes requirements for a next review by the end of 2030.

REGULATORY FRAMEWORK

- → Emissions Management and Climate Resilience Act (EMCRA)
- → Technology Innovation and Emissions Reduction Regulation (TIER Regulation)
- → TIER information page
- → Alberta Emissions Reduction and Energy Development Plan
- → Standard for developing TIER benchmarks
- → Alberta's greenhouse gas emissions reduction performance
- → Alberta industrial GHG compliance information
- → Alberta Greenhouse Gas Quantification Methodologies
- → Standard for Greenhouse Gas Emission Offset Project Developers
- → Standard for Validation, Verification and Audit
- → Carbon Offset Emission Factors Handbook
- → Approved Alberta Emission Offset Quantification Protocols

BRITISH COLUMBIA

B.C. OUTPUT-BASED PRICING SYSTEM

- The B.C. OBPS replaced the voluntary CleanBC Industrial Incentive Program in April 2024
- Compliance required for certain products at industrial operations that emit over 10,000 tCO_2e per year
- Compliance based on emissions that exceed an allowable intensity of output of each covered operation
- The B.C. OBPS is aligned with the Canadian federal benchmark criteria

ETS DESCRIPTION

The British Columbia Output-Based Pricing System (B.C. OBPS) aims to reduce emissions from industrial operations within the province. It is an intensity-based ETS in which covered entities must fulfil a compliance obligation for emissions that exceed the operation's annual emissions limit. These limits are based on product-specific performance standards, which are emissions intensity benchmarks. The system applies to producers of specific industrial products that emit more than 10,000 tCO_2e per year.

The system began in April 2024, replacing the CleanBC Industrial Incentive Program (CIIP). The CIIP encouraged cleaner production by reducing carbon tax costs for industrial operations that could demonstrate that they were among the lowest emitting for their sector. When British Columbia's carbon tax was eliminated in April 2025, the B.C. OBPS became the province's sole carbon pricing instrument.

The B.C. OBPS follows the Canadian federal benchmark carbon price path and ensures a price incentive for industrial emitters to reduce GHG emissions through a performance-based system. Operations that emit less than their annual emission limit earn credits. For operations that emit more than their emission limit, the B.C. OBPS provides flexible options to meet compliance obligations, including using earned credits, B.C. offsets, or making a direct payment to the government.

YEAR IN REVIEW

2024 marked the first compliance year for the B.C. OBPS, with obligations due in 2025. During 2024, the system covered approximately 120 operations, each emitting over 10,000 tCO_2e per year. Emissions reports were due in May 2025, with compliance reports following in November. Operations could meet up to 50% of their 2024 compliance obligation using credits, with the remainder paid at the level of the federal carbon price (CAD 80/tCO_2e, or USD 58.42, in 2024). Emission results for 2024 will be publicly released in 2026 as part of the annual review. Emissions reports for the 2025 compliance year are due in May 2026.

In June 2025, the province launched an updated B.C. Carbon Registry platform with improved usability and a dedicated compliance account structure.

British Columbia expanded its offset framework with two new protocols: the Carbon Capture and Sequestration Protocol (CCSP) was finalized in August 2025, enabling projects to generate offsets for permanent carbon storage; and the Refrigerants Offset Protocol (BCROP) was finalized in November 2025, with tightened eligibility rules, clarified HFC destruction requirements, and conservative baseline assumptions following stakeholder feedback during the June to July 2025 consultation period.

In force
Under development
Under consideration

SECTORS

MINING AND EXTRACTIVES

INDUSTRY

CAP OR TOTAL EMISSIONS LIMIT

Intensity-based emissions limit

GREENHOUSE GASES

CO_2, CH_4, N_2O, HFCs, SF_6, PFCs

OFFSET CREDITS

Domestic offset credits are allowed, with quantitative limits

ALLOCATION

Free Allocation: Output-based Benchmarking

AVERAGE 2025 PRICES

CAD 95 (USD 67.95)

In May 2025, the government announced an independent review of CleanBC programs (including the B.C. OBPS) to ensure the effectiveness of policies toward climate and economic goals. Public consultation ran from June to August 2025. The final report was then released in November 2025, and it recommended extending the B.C. OBPS to 2040, maintaining federal carbon price alignment, strengthening performance standards, and recycling all revenue transparently into climate programs.

EMISSIONS & TARGETS OF BRITISH COLUMBIA

OVERALL GHG EMISSIONS (including indirect CO_2, excluding LULUCF), **2023**
(in $MtCO_2e$, share of total in %)

Energy	52.6	87%
Industrial processes	3.7	6%
Agriculture	2.2	4%
Waste	1.9	3%
Total	**60.4**	

Energy industries	8.6	14%
Manufacturing industries and construction	4.1	7%
Transport	28.3	47%
Commercial, institutional, and residential	7.1	12%
Other energy	4.6	8%

GHG REDUCTION TARGETS

By 2030: 40% below 2007 levels
By 2040: 60% below 2007 levels
By 2050: 80% below 2007 levels
Targets are legislated in British Columbia's Climate Change Accountability Act SBC 2007

ETS COVERAGE & PHASES

CAP OR TOTAL EMISSIONS LIMIT

The total emissions limit under the B.C. OBPS changes as a function of production (output) and is the sum of the bottom-up output-based emissions limits of all individual covered entities (industrial operations). However, the bottom-up emission limits do not represent an absolute cap.

SECTORS AND THRESHOLDS

SECTORS: Mining and extractives; Industry

INCLUSION THRESHOLDS: Participation is mandatory for producers of certain industrial products covered under the "Greenhouse Gas Industrial Reporting and Control Act" (GGIRCA) which emit at least 10,000 tCO_2e/year. Industrial operations within covered sectors that emit less than 10,000 tCO_2e/year may opt-in to the B.C. OBPS on a voluntary basis.

POINT OF REGULATION

Point source

TYPE OF ENTITIES

Industrial operations (facilities)

NUMBER OF ENTITIES

~ 120 operations (2024)

ALLOWANCE ALLOCATION & REVENUE

ALLOWANCE ALLOCATION

IIndustrial operations' emissions are assessed against operation-specific emission limits, which are based on a product-specific performance standard. Those that emit less than their emission limit receive a corresponding number of credits (earned credits) per tCO_2e, free of charge from the government of British Columbia. This is similar to free allocation based on benchmarks. These credits can be banked or sold and can be combined with offset units to meet compliance obligations (together they are called compliance units) by entities that exceed their emission limits. Earned credits do not have expiry dates but are subject to usage limits (see 'Compliance Mechanism' section). Offset units have both vintage and usage limits.

The performance standards are calculated using the three-year provincial production weighted average emissions intensities for 2019 to 2021. Then a reduction factor, which determines the percentage of priced emissions for a specific product, is applied. The reduction factor is set at 65% for most products, 80% for copper and critical mineral mining, 85% for lead-zinc and critical mineral smelting and refining, 90% for cement, chemical processing and lime products, and 95% for aluminum smelting.

Tightening rates ensure a yearly gradual increase in the OBPS's stringency. The B.C. OBPS tightening rate is set at 1% for all emissions for all products except for those from industrial processes, which do not change.

USE OF REVENUES

General budget

British Columbia does not have laws, formal requirements or commitments dictating the use of carbon revenues. Historically, a portion of carbon revenues have been allocated to the CleanBC Industry Fund, which supports the development, trial, and deployment of projects that reduce GHG emissions from large industrial operations.

FLEXIBILITY & LINKING

BANKING AND BORROWING

Banking compliance units is allowed.
Borrowing is not allowed.

OFFSET CREDITS

QUALITATIVE LIMITS: Only offsets from projects that are approved through an eligible protocol under the GGIRCA, then validated and verified through the B.C. Carbon Registry by an accredited validation and verification body, are allowed as a compliance option. Under the B.C. OBPS, eligible offset units are limited to those generated within three years of the beginning of the compliance year.

QUANTITATIVE LIMITS: The use of offsets to meet an operation's compliance obligation is limited (see 'Compliance Mechanism' section).

LINKS WITH OTHER SYSTEMS

The B.C. OBPS is not directly linked with any other system.

A subset of B.C. OBPS Forest Carbon offsets are recognized units under the Canadian (federal) OBPS.

OTHER CARBON PRICING INSTRUMENTS IN THE JURISDICTION

Domestic offsetting mechanism: B.C. Carbon Registry

COMPLIANCE

COMPLIANCE MECHANISM

Covered entities must account for each tCO_2e that exceeds their annual emission limits. To meet their obligations, industrial operations may use a combination of compliance units and direct payments (compliance charge).

Compliance units can be earned credits or B.C. offset units.

The compliance charge is equivalent to the Canadian federal minimum carbon price of CAD 95 (USD 67.95) for compliance year 2025 (applied in 2026); it will increase by CAD 15 (USD 10.73) per year, reaching CAD 170 (USD 121.60) per tCO_2e in 2030.

The use of compliance units is limited. In compliance year 2025, a maximum of 40% of the compensation can be met with compliance units (earned credits and/or offset units), reducing to 30% from 2026 to 2030.

COMPLIANCE PERIOD

One year.

MRV

FRAMEWORK: The B.C. OBPS uses the MRV framework regulated under the GGIRCA and the Greenhouse Gas Emission Reporting Regulation (GGERR).

MONITORING: No formal monitoring plan is required. However, regulated entities must have systems in place to monitor, collect, and measure emissions and production data. Monitoring frequency is annual (calendar year January 1 to December 31). All industrial operations in B.C. with specified activities (manufacturing, energy production, waste management, etc.) listed in Schedule A of the GGERR have MRV obligations, even if they do not have B.C OBPS compliance obligations. The current MRV framework under the GGIRCA has been in place since 2016.

REPORTING: Operations that emit at least 10,000 tCO_2e per year – and those that have emitted more than 10,000 tCO_2e in any of the previous three years – must report their GHG emissions annually by May 31 of the year following the compliance period.

VERIFICATION: Operations producing regulated products with emissions greater than or equal to 10,000 tCO_2e during either the current reporting cycle or any of the previous three reporting cycles must have their emission reports verified annually by an accredited third party. Other operations' emission reports must be similarly verified if their emissions exceed 25,000 tCO_2e.

PENALTIES AND ENFORCEMENT

Late penalties automatically apply in cases where a facility fails to meet its compliance obligation by the deadline. Automatic late penalties increase until the compliance obligation is met. Detailed regulations are published in the "GHG Emissions Administrative Penalties and Appeals Regulation" under the GGIRCA.

MARKET REGULATION

MARKET DESIGN

MARKET PARTICIPATION: Restricted to registry account holders, including compliance entities, both mandatory and voluntary (for inclusion thresholds see 'Sectors and Thresholds' section) as well as offset project proponents and general third-party market participants.

MARKET TYPES:

Primary: Compliance units (earned credits and offset units) are currently not auctioned.

Secondary: Compliance units can be directly transferred between operations within the province that are owned by the same operator. Compliance units can also be traded between B.C. OBPS covered entities, offset proponents and third-party buyers and sellers. All monetary transactions are over-the-counter (OTC) between parties, not through a centralized exchange.

LEGAL STATUS OF ALLOWANCES: regulatory instruments

MARKET STABILITY PROVISIONS

COMPLIANCE CHARGE

Instrument type: Price or set price trajectory

Functioning: To meet the operation's compliance obligations, a share of emissions exceeding their annual emission limit, must be accounted-for with direct payments (compliance charge) at the full carbon price for that compliance year. The share of compliance obligation to be thus paid was 50% in 2024, increasing to 60% in 2025 and further rising to 70% in the years 2026 to 2030. The compliance charge acts as a price ceiling and is aligned with the federal benchmark carbon price (CAD 110 [USD 78.68] in 2026 (see 'Compliance Mechanism' section).

OTHER INFORMATION

INSTITUTIONS INVOLVED

Ministry of Energy and Climate Solutions' Climate Action Secretariat:
Responsible for administering the regulatory frameworks of the B.C. OBPS system, the B.C. offset system, and the BC Carbon Registry.

EVALUATION/ETS REVIEW

To ensure continuous improvement of the system, the B.C. OBPS undergoes an annual review.

REGULATORY FRAMEWORK

- → Greenhouse Gas Industrial Reporting and Control Act (GGIRCA)
- → Greenhouse Gas Emissions Reporting Regulation (GGERR)
- → Emission Offset Project Regulation (EOPR)
- → B.C. Carbon Registry Regulation (BCCRR)
- → GHG Emissions Administrative Penalties and Appeals Regulation
- → B.C. OBPS Technical Background and General Program Guidance for Industrial Operators
- → CleanBC Roadmap to 2030
- → B.C. Carbon Registry
- → B.C. Offset Protocol Policy
- → B.C. emission report summaries

CALIFORNIA

CALIFORNIA CAP-AND-INVEST PROGRAM

- Program extended through 2045 and renamed “Cap-and-Invest Program”
- New rulemaking to reflect direction from AB 1207/SB 840 under way
- Linked with Québec since 2014, ongoing discussions about potential linkage with Washington

ETS DESCRIPTION

The California Cap-and-Invest Program began operation in 2012 with the opening of its tracking system for allocation, auction distribution, and trading of compliance instruments. Compliance obligations started in January 2013. The program was extended through 2045 and renamed Cap-and-Invest by legislation adopted in 2025. The program puts a carbon price on ~76% of the state’s GHG emissions.

The program covers fuel combustion emissions in the mining, power, buildings, transport, industrial, agriculture, and forestry sectors, as well as industrial process emissions of about 400 covered facilities. Fuel use in buildings, transportation, and in agricultural, forestry, and fishing operations is covered upstream at the fuel supplier. Covered entities must surrender allowances for all their covered emissions. Allowances are distributed via a combination of auction, free allocation, and free allocation with consignment. The proceeds from auctioning are reinvested in projects that reduce emissions, strengthening the economy, public health, and the environment, especially in disadvantaged communities.

The California Cap-and-Invest Program is implemented under the authority of the California Air Resources Board (CARB). California has been part of the Western Climate Initiative (WCI) since 2007 and formally linked its program with Québec’s in January 2014.

YEAR IN REVIEW

In September 2025, California adopted Assembly Bill 1207 (AB 1207) and Senate Bill 840 (SB 840), which extended the Cap-and-Invest Program (formerly Cap-and-Trade) through 2045 and made technical changes to the Program.

AB 1207 directs CARB to ensure that program-wide aggregate emissions from covered sources decline, at a minimum, in line with the state’s 2030 and 2045 climate targets, maintain robust price-containment mechanisms, set offset usage limits for 2031 to 2045, and remove allowances from future budgets equal to offsets used for compliance, while considering cost-effectiveness and affordability, minimizing leakage risks, and avoiding disproportionate impacts on low-income communities. SB 840 complements these changes by requiring CARB to conduct an evaluation of the Compliance Offsets Program by the end of 2026 and to update all existing compliance offset protocols to reflect the best available science by January 1, 2029.

By 2034 and every five years thereafter, SB 840 further requires CARB to evaluate all compliance offset protocols and consider whether updates are necessary to reflect the best available science. SB 840 also sets future appropriation rules for Greenhouse Gas Reduction Fund programs, including affordable housing, sustainable communities, community air monitoring, and high-speed rail.

1 Compliance obligations are currently only assessed on emissions of CO_2, CH_4, and N_2O.
2 California’s Cap-and-Invest Program issues compliance offset credits to projects located in the United States and also allows the use of credits issued by linked jurisdictions (i.e., Québec)..
3 “Current auction settlement price“ in USD, weighted by the total number of government-owned and consignment current vintage allowances sold in the year for both California and Québec.
4 Does not include revenues from the auction of consigned allowances.

In force
Under development
Under consideration

SECTORS

- MINING AND EXTRACTIVES
- TRANSPORT
- POWER
- BUILDINGS
- INDUSTRY
- FUEL USE IN AGRICULTURE AND/OR FORESTRY

CAP OR TOTAL EMISSIONS LIMIT

Absolute cap
254 $MtCO_2e$ (2026)

GREENHOUSE GASES

CO_2, CH_4, N_2O, SF_6, HFCs, PFCs, NF_3,
other fluorinated GHGs[1]

OFFSET CREDITS

Domestic[2] compliance offset credits, with quantitative limits

ALLOCATION

Free Allocation: Output-based Benchmarking
Free Allocation: Fixed Benchmarking
Auctioning

AVERAGE 2025 PRICES

Average Current Auction price: USD 28.14[3]
Average secondary market price: USD 29.10

TOTAL REVENUE

USD 34.5 billion since beginning of program
USD 3.13 billion in 2025[4]

In January 2026, CARB proposed changes to the Cap-and-Invest Regulation to implement the requirements of AB 1207. The formal rulemaking process is underway with regulatory amendments expected to be adopted and reflected in allowance budgets from 2027 onwards.

California and Québec continue to operate a joint carbon market, while California, Québec, and Washington continue discussions about potential future linkage of Washington's program to the joint market.

EMISSIONS & TARGETS OF CALIFORNIA

OVERALL GHG EMISSIONS (including indirect CO_2, excluding LULUCF), **2023**
(in $MtCO_2e$, share of total in %)

Energy	287.9	80%
Industrial processes	32.9	9%
Agriculture[5]	29.1	8%
Waste	10.5	3%
Total	**360.4**	

Energy industries	90.7	25%
Manufacturing industries and construction	13.0	4%
Transport	134.2	37%
Commercial, institutional, and residential	40.5	11%
Other energy	9.5	3%

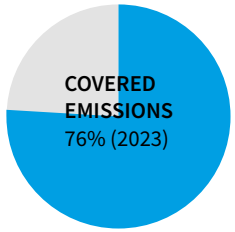
GHG REDUCTION TARGETS

By 2030: 40% reduction from 1990 GHG levels ("SB 32")
By 2045: Carbon neutrality and 85% reduction from 1990 anthropogenic GHG levels ("AB 1279")

ETS COVERAGE & PHASES

COVERED EMISSIONS 2023

Verified ETS emissions: 272.3 $MtCO_2e$



PHASES

FIRST COMPLIANCE PERIOD: Two years (2013 to 2014)
SECOND COMPLIANCE PERIOD: Three years (2015 to 2017)
THIRD COMPLIANCE PERIOD: Three years (2018 to 2020)
FOURTH COMPLIANCE PERIOD: Three years (2021 to 2023)
FIFTH COMPLIANCE PERIOD: Three years (2024 to 2026)
SIXTH COMPLIANCE PERIOD: Three years (2027 to 2029)

CAP OR TOTAL EMISSIONS LIMIT

An absolute cap limits the total emissions allowed in the system and is fixed ex-ante.

FIRST COMPLIANCE PERIOD: The system started in 2013 with a cap of 162.8 $MtCO_2e$, declining to 159.7 $MtCO_2e$ in 2014, at a rate of ~2% annually.

SECOND COMPLIANCE PERIOD: With the program expanding to include fuel distribution, the cap rose to 394.5 $MtCO_2e$ in 2015. The cap decline factor averaged 3.1% per year in the second compliance period, reaching 370.4 $MtCO_2e$.

THIRD COMPLIANCE PERIOD: The cap in the third compliance period started at 358.3 $MtCO_2e$ and declined at an average annual rate of 3.3% to 334.2 $MtCO_2e$ in 2020.

FOURTH COMPLIANCE PERIOD AND BEYOND: During the 2021 to 2030 period, the cap declines by about 13.4 $MtCO_2e$ each year, averaging ~4%, to reach 200.5 $MtCO_2e$ in 2030. The "Cap-and-Invest Regulation" (the Regulation) sets a formula for declining caps after 2030 through 2050.

Rulemaking is underway to implement recent legislative requirements and to align allowance budgets with California's 2030 and 2045 targets.

SECTORS AND THRESHOLDS

FIRST COMPLIANCE PERIOD: Covered sectors included those that have one or more of the following processes or operations: large industrial facilities (including cement, glass, hydrogen, iron and steel, lead, lime manufacturing, nitric acid, petroleum and natural gas systems, petroleum refining, and pulp and paper manufacturing, including cogeneration facilities co-owned/operated at any of these facilities); electricity generation; electricity imports; other stationary combustion; and CO_2 suppliers.

SECOND COMPLIANCE PERIOD AND BEYOND: In addition to the sectors listed above, suppliers of natural gas, suppliers of reformulated blendstock for oxygenate blending (i.e., gasoline blendstock) and distillate fuel oil (i.e., diesel fuel), suppliers of liquefied petroleum gas in California, and suppliers of liquefied natural gas are covered by the program.

INCLUSION THRESHOLDS: Facilities emitting greater than or equal to 25,000 tCO_2e per year. All electricity imported from specified sources connected to a specific generator with emissions greater than or equal to 25,000 tCO_2e per year is covered. Emissions associated with imported

5 Only includes categories "3A Livestock" and "3C Aggregate Sources and Non-CO_2 Emissions Sources on Land".

electricity from unspecified sources have a zero threshold, and all imported electricity emissions are covered using a default emissions factor.

OPT-IN COVERED ENTITIES: A facility in one of the covered sectors that emits less than 25,000 tCO_2e annually can voluntarily participate in the Program. Opt-in entities are subject to all registration, reporting, verification, compliance obligations, and enforcement applicable to covered entities.

POINT OF REGULATION

Upstream (buildings, transport, agriculture, and Fuel use in agriculture and/or forestry); point source (mining and extractives, industry, in-state power generation); imported electricity at the point of first delivery onto California's electricity grid

TYPE OF ENTITIES

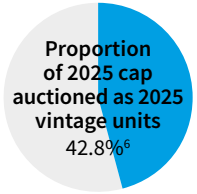
Installations, fuel distributors, electricity importers

NUMBER OF ENTITIES

~400 facilities (2025)

ALLOWANCE ALLOCATION & REVENUE

ALLOWANCE ALLOCATION[6]



Allowances are distributed via free allocation, free allocation with consignment, and auction.

FREE ALLOCATION: Industrial facilities receive free allowances to minimize carbon leakage. For nearly all industrial facilities, the amount is determined by product-specific benchmarks, recent production volumes, a cap adjustment factor, and an assistance factor based on assessment of leakage risk.[7]

Leakage risk is divided into "low", "medium", and "high" risk tiers based on levels of emissions intensity and trade exposure for each specific industrial sector.

FIRST COMPLIANCE PERIOD: The Cap-and-Trade Regulation as adopted in 2011 set assistance factors of 100% for the first compliance period, regardless of leakage risk.

SECOND COMPLIANCE PERIOD AND BEYOND: For facilities with medium leakage risk, the original regulation included an assistance factor decline to 75% for the second compliance period and to 50% for the third. For facilities with low leakage risk, it included an assistance factor decline to 50% for the second compliance period and to 30% for the third. However, amendments to the Cap-and-Trade Regulation in 2013 delayed these assistance factor declines by one compliance period. Pursuant to "AB 398" adopted in 2017, all assistance factors were changed to 100% through 2030, citing continued vulnerability to carbon leakage. There is no cap on the total amount of industrial allocation, but the formula for allocation includes a declining cap adjustment factor to gradually reduce allocation in line with the overall cap trajectory.
Free allocation is also provided for transition assistance to public wholesale water entities, legacy contract generators, universities, public service facilities, and, during the period from 2018 to 2024, waste-to-energy facilities.

FREE ALLOCATION WITH CONSIGNMENT: Electrical distribution utilities and natural gas suppliers receive free allocation on behalf of their ratepayers.[8] These utilities must use the allowance value for ratepayer benefit and for GHG emissions reductions. All allowances allocated to investor-owned electric utilities and an annually increasing percentage of allowances allocated to natural gas suppliers must be consigned for sale at the state's regular quarterly auctions. Publicly owned electric utilities can choose to consign freely allocated allowances to auction or use them for their own compliance needs.

AUCTIONING:

- Auction share: ~67% of total California-issued vintage 2025 allowances made available through auction in 2025, which included allowances owned by CARB (~35%) and allowances consigned to auction by utilities (~32%).
- Auction volume: 174,505,948 (2025 vintage); 22,730,000 (2028 vintage).
- Share of the 2025 cap auctioned as vintage 2025 CARB-owned allowances so far: 42.8%.

Unsold allowances in past auctions are gradually released for sale at auction after two consecutive auctions are held in which the clearing price is higher than the minimum price. However, if any of these allowances remain unsold after 24 months, they will be placed into CARB's price ceiling reserve or into the two lower reserve tiers (see 'Market Stability Provisions' section). To date, 37 million allowances originally designated for auction have been placed in reserves through these provisions.

6 Excluding consigned allowances.
7 See Section 95891(c) of the Regulation for a minor exception.
8 See Section 95892 and Section 95893 of the Regulation for further details on the approach to free allocations for electrical distribution utilities and natural gas suppliers, respectively.

USE OF REVENUES


Climate mitigation


Low-carbon innovation


Pursuit of co-benefits, including reductions in air pollutants and corresponding health benefits


Assistance for individuals, households, and businesses

Revenue from auction of California-owned allowances: Most of California's auction revenue goes to the Greenhouse Gas Reduction Fund, of which at least 35% must benefit disadvantaged and low-income communities. The funds are then distributed as California Climate Investments, which support projects that deliver significant environmental, economic, and public health benefits across the state. As of November 2024, USD 12.8 billion had been invested in 590,703 projects, with expected GHG reductions of 116.1 $MtCO_2e$.

Over USD 9.2 billion has reached disadvantaged and low-income communities.

Revenue from auction of utility-owned allowances: Investor-owned electric utilities and natural gas suppliers are allocated allowances, a portion of which must be consigned to auction. Auction proceeds must be used for ratepayer benefit and for GHG emissions reductions. Since the Program's inception, approximately USD 26.5 billion in allowance value has been provided to ratepayers. Investor-owned electric utilities and natural gas suppliers have provided USD 13.5 billion directly to residential ratepayers through 2024 via the California Climate Credit.

FLEXIBILITY & LINKING

BANKING AND BORROWING

Banking is allowed but is subject to a holding limit on allowances to which all entities in the system are held. The holding limit is based on the year's cap and decreases annually. Entities may also be eligible for a limited exemption from the holding limit based on their emissions levels to support meeting annual compliance obligations or obligations at the end of a three-year compliance period.

Borrowing is not allowed.

OFFSET CREDITS

The use of compliance offset credits is allowed. Such credits, issued by CARB or by the authority of a linked system, are compliance instruments under the California Cap-and-Invest Program.

QUALITATIVE LIMIT: Currently, offset credits originating from projects carried out according to one of the following six compliance offset protocols are accepted as compliance instruments:

- US forest projects;
- urban forest projects;
- livestock projects (methane management);
- ozone-depleting substances projects;
- mine methane capture projects; and
- rice cultivation projects.

Compliance offset credits issued by jurisdictions linked with California (i. e., Québec) are eligible, subject to the quantitative limits described below.

To ensure environmental integrity, California's compliance offset program has incorporated the principle of buyer liability. The state may invalidate an offset credit that is later determined not to have met the requirements of its compliance offset protocol due to double counting, over-issuance, or regulatory non-conformance. The entity that surrendered the offset credit for compliance must then substitute a valid compliance instrument for the invalidated offset credit.

QUANTITATIVE LIMIT: The share of offsets that can be used by an entity to fulfill its compliance obligation is 4% per year for 2021 to 2025 emissions, and 6% for 2026 to 2045 emissions.

In addition to setting new quantitative limits on the use of offset credits, AB 398 set new limits on the types of offset credits that can be used to fulfill compliance obligations. Starting with compliance obligations for 2021 emissions, no more than 50% of any entity's offset usage limit can come from offset projects that do not provide direct environmental benefits to the state (DEBS).

Projects located within California are automatically considered to provide DEBS. Offset projects implemented outside of California may still result in DEBS, based on scientific evidence and project data provided. For example, a forest project outside California has been determined to provide benefits within California by improving the quality of water flowing through the state. Recent regulatory amendments specify the criteria used to determine DEBS.

In November 2022, California entities surrendered ~2.2 million offset credits for a portion of 2021 emissions. In November 2023, California entities surrendered ~2 million offset credits for a portion of 2022 emissions.

In November 2024, California entities surrendered an additional 22 million credits for the remainder of their emissions during the fourth compliance period, while Québec entities surrendered 13.3 million California-issued offset credits. Of the 35.2 million credits surrendered, 26.5 million were from US forest offset projects and 5.3 million from mine methane capture projects.

In November 2025, California entities surrendered ~2.2 million offset credits at the annual compliance event for the first year of the fifth compliance period (2024), when compliance for 30% of the 2024 annual emissions was required

LINKS WITH OTHER SYSTEMS

California's program linked with Québec's in January 2014. The two expanded their joint market by linking with Ontario in January 2018 until the termination of Ontario's system in mid-2018. In March and September 2024, joint statements from the governments of Québec, California, and Washington affirmed their commitment to explore potential linkage.

COMPLIANCE

COMPLIANCE MECHANISM

Covered entities must surrender one compliance instrument (an allowance or an offset credit) per tCO_2e covered emissions. Compliance units from linked jurisdictions can also be used.

COMPLIANCE PERIOD

Except for the year following the last year of a compliance period, compliance instruments equal to 30% of the previous year's verified emissions must be surrendered annually, by the start of November. Compliance instruments equal to all remaining emissions must be surrendered by the start of November of the year following the last year of a compliance period.

MRV

FRAMEWORK: California's MRV framework is set by the "Regulation for the Mandatory Reporting of Greenhouse Gas Emissions (MRR), title 17 California Code of Regulations (CCR) §§ 95100–95163". The "Cap-and-Invest Regulation, title 17 CCR §§ 95801–96022" relies on MRR data.

MONITORING: Reporters must use calculation, monitoring, QA/QC, missing data, recordkeeping, and reporting methods specified in MRR.

MRR requires that reporters subject to the regulation maintain a GHG Monitoring Plan for facilities and suppliers that includes detailed, source-specific monitoring and QA/QC obligations and record retention for all data used to calculate emissions, specified in MRR § 95105(c). Similarly, electric power entities that import or export electricity must maintain a GHG inventory program, as specified in MRR § 95105(d).

REPORTING: Annual reporting for the following entities based on emissions thresholds listed, using the standardized methods and formats specified in MRR:

- Facilities in specified categories (e.g., large power plants under 40 CFR Part 75, cement, lime, nitric acid, refineries, CO_2 sequestration/injection) report regardless of emissions level.
- Other facilities (e.g., stationary combustion, glass, hydrogen, iron and steel, pulp and paper, petroleum and natural gas systems, geothermal, lead) report at ≥10,000 tCO_2e/year of stationary and process emissions; petroleum and natural gas systems also apply a 25,000 tCO_2e threshold when including vented and fugitive emissions.
- Fuel and CO_2 suppliers report at ≥10,000 tCO_2e/year, calculated as volume of CO_2 supplied, or based on emissions that would result from combustion of the fuels supplied
- Importers or exporters of electricity as defined in § 95102(a) with any volume of imported or exported electricity, retail providers as defined in § 95102(a), along with certain public agencies specified in § 95101(d)

VERIFICATION: Third-party verification is required under MRR for emissions data reports of entities with a compliance obligation under the Cap-and-Invest Regulation and for other reporters above specified thresholds or categories, as specified in § 95103(f).

Verification requirements, including requirements for the accreditation of verification bodies and individual verifiers are specified in §§ 95130-95133. Similar accreditation and conflict-of-interest provisions apply to offset verifiers and verification bodies under Cap-and-Invest Regulation §§ 95977–95978. Entities remain subject to annual reporting (and, where applicable, verification) under MRR until they meet the cessation conditions in § 95101(h)–(i).

PENALTIES AND ENFORCEMENT

A covered entity that fails to surrender sufficient compliance instruments to cover its verified GHG emissions at a relevant compliance deadline is automatically assessed an untimely surrender obligation. It is required to surrender the missing compliance instruments as well as three additional ones for each it failed to surrender.

Failure to meet this untimely surrender obligation would subject the entity to substantial financial penalties for its noncompliance, pursuant to "California Health and Safety Code Section 38580". Separate and substantial penalties apply to mis-reporting or non-reporting under the MRR.

MARKET REGULATION

MARKET DESIGN

MARKET PARTICIPATION: Covered entities, opt-in covered entities, and voluntarily associated entities can participate in the program. Voluntarily associated entities are approved individuals or entities that intend to:

- purchase, hold, sell, or retire compliance instruments but are not covered under the program;
- operate a compliance offset project registered with CARB; or
- provide clearing services and derivative clearing services as qualified entities.

Voluntarily associated entities must be in the United States and have an approved account in the system registry, the Compliance Instrument Tracking System Service (CITSS). Additional eligibility criteria apply, including for individual market participants.

MARKET TYPES:

Primary: Allowances are made available through sealed-bid auctions. State-owned and consigned allowances are offered through quarterly allowance auctions organized jointly with Québec. Auctions are administered by WCI, Inc.

Secondary: Allowances, offset credits, and financial derivatives are traded in the secondary market on the Intercontinental Exchange (ICE), CME Group, and Nodal Exchange platforms. Any company qualified to access these platforms can trade directly or through a future commission merchant. Companies can also trade directly over the counter but must have a CITSS account to take delivery of compliance instruments.

LEGAL STATUS OF ALLOWANCES: Allowances are defined as limited tradable authorizations to emit up to one tCO_2e. According to the "California Code of Regulations", an allowance does not constitute property or bestow property rights and cannot limit the authority of the regulator to terminate or limit such authorization to emit.

MARKET STABILITY PROVISIONS

AUCTION RESERVE PRICE

Instrument type: Price-based instrument

Functioning: The auction reserve price is set at USD 27.94 and CAD 26.47 per allowance in 2026.

It was initially established at USD 10.00 for the auction in 2012, and it increases annually by 5% plus inflation, as measured by the Consumer Price Index. The auction reserve price for each joint auction with Québec is determined using the minimum prices set annually by California in USD in accordance with Section 95911 of the Regulation and by Québec in CAD in accordance with Article 49 of the "Regulation respecting a cap-and-trade system for greenhouse gas emission allowances" (Québec Regulation). To manage multiple currencies, an Auction Exchange Rate is determined prior to each joint auction. The Auction Reserve Price for a joint auction is then determined as the higher of the Annual Auction Reserve Prices established in USD and CAD after applying the established Auction Exchange Rate (USD to CAD FX Rate).

ALLOWANCE PRICE CONTAINMENT RESERVE (APCR)

Instrument type: Price-based instrument

Functioning: In 2026, the two APCR tiers are set at USD 65.31 and USD 83.92 per allowance. Tier prices increase each year by 5% plus inflation, as measured by the Consumer Price Index.

At the start of the program, about 4.9% of allowances from the 2013 to 2020 budgets were placed in an APCR. Prior to amendments mandated by AB 398 in 2017, these allowances were spread across three tiers. Pursuant to AB 398, from 2021 onward, these allowances have been moved into two price tiers and a price ceiling. Currently, there are approximately 66.8 million and 89.5 million allowances in the Tier 1 and 2 reserves, respectively.

Although no APCR sale has been held so far, CARB will offer one if auction settlement prices from the preceding quarter are greater than or equal to 60% of the lowest APCR price tier. CARB also always offers the third quarter APCR sale before the November compliance obligation deadline.

ALLOWANCE PRICE CEILING

Instrument type: Price-based instrument

Functioning: In 2026, the price ceiling is set at USD 102.52. The price ceiling increases each year by 5% plus inflation, as measured by the Consumer Price Index.

At the price ceiling, a covered entity can purchase allowances (or, if no allowances remain, "price ceiling units") up to the amount of its current unfulfilled emissions obligation. The revenues from the sale of price ceiling units will be used to purchase real, permanent, quantifiable, verifiable, enforceable, and additional emissions reductions on at least a tonne for tonne basis. Sales at the price ceiling will only be conducted if no allowances remain at the two lower APCR tiers and a covered entity has demonstrated that it does not have sufficient compliance instruments in its accounts for that year's compliance event. Currently, there are approximately 77.7 million allowances in the Price Ceiling Account.

OTHER INFORMATION

INSTITUTIONS INVOLVED

California Air Resources Board: Responsible for the design and implementation of the Cap-and-Invest Program.

Western Climate Initiative, Inc.: Non-profit organization that provides cost-effective administrative and technical solutions for supporting the coordinated development and implementation of participating jurisdictions' GHG emissions trading programs, such as administering auctions and maintaining the system registry (CITSS).

EVALUATION/ETS REVIEW

Pursuant to requirements in existing legislation (AB 32, AB 197, and AB 398), CARB must update the "California Climate Change Scoping Plan" at least every five years and must provide annual reports to various committees of the Legislature and the Board. The Scoping Plan provides updates on progress toward climate targets and lays out strategies to achieve them, including the role and level of effort accorded to different programs in the state's portfolio approach to climate mitigation. The latest update to the Scoping Plan was adopted in December 2022.

REGULATORY FRAMEWORK

- → **Global Warming Solutions Act of 2006 (AB 32)**
- → **AB 398**
- → **AB 1207**
- → **SB 840**
- → Current Cap-and-Invest regulation can be found on the **dedicated CARB website**.
- → Current MRV regulation can be found on the **dedicated CARB website**.

CANADA

FEDERAL OUTPUT-BASED PRICING SYSTEM

- In place since 2019, to ensure price incentive for industries to reduce GHG emissions
- Backstop system established under the Greenhouse Gas Pollution Pricing Act
- Opt-in possible for smaller emitters

ETS DESCRIPTION

Since 2019, carbon pricing has been in place across all Canadian provinces and territories. Under the 2016 "Pan-Canadian Approach to Pricing Carbon Pollution", Canadian provinces and territories have the flexibility to design and implement their own pricing system as long as it meets minimum national stringency criteria (known as the "federal benchmark"). Eligible types of carbon pricing system include:

- an explicit price-based system:
  - → a carbon levy on fossil fuels; or
  - → a combination ("hybrid") of a carbon levy on fossil fuels and an intensity-based ETS for industrial emitters.
- a cap-and-trade system.

Under the 2021 update to the Pan-Canadian Approach to Pricing Carbon Pollution, the minimum national carbon price was set at CAD 65 (USD 48.20) in 2023, increasing by CAD 15 (USD 10.70) each year to reach CAD 170 (USD 121.60[2]) in 2030.

A federal carbon pollution pricing "backstop" system applies where provincial or territorial systems do not meet the federal benchmark or where a jurisdiction requests it. Following the elimination of the federal consumer fuel charge on April 1, 2025, the federal backstop now consists solely of the federal Output-Based Pricing System (OBPS) for large industrial emitters. As of 2025, the federal OBPS applies in Manitoba, Prince Edward Island, Yukon, and Nunavut.

The federal OBPS maintains a carbon price signal for emissions-intensive and trade-exposed (EITE) industrial and electricity sector facilities, while limiting carbon leakage and competitiveness risks. It covers facilities emitting at least 50,000 tCO_2e annually, with voluntary entry to smaller facilities emitting at least 10,000 tCO_2e per year in sectors at risk of carbon leakage and adverse competitiveness impacts.

The OBPS sets a performance (output-based) standard (i.e., GHG emissions per unit of output) based on the national production-weighted average emissions intensity for a given activity in covered sectors. Each facility's annual emissions limit is calculated based on its level of production and the appropriate standard(s). Facilities emitting above this limit must provide compensation, while facilities that perform better than the standard are issued surplus credits (compliance units) that may be sold or banked for future use.

1 Earlier revenue collected included coverage of New Brunswick, Ontario, and part of Saskatchewan, in addition to the currently covered provinces and territories; each of their transitions to provincial systems occurred at different times (New Brunswick in 2021, Ontario in 2022, and Saskatchewan in 2023).
2 USD conversion based on 2025 IMF exchange rate; actual future exchange rates may differ.

In force
Under development
Under consideration

SECTORS

POWER
INDUSTRY

CAP OR TOTAL EMISSIONS LIMIT

Intensity-based limit
17.4 $MtCO_2e$ (verified emissions, 2022)

GREENHOUSE GASES

CO_2, CH_4, N_2O, SF_6, HFCs, PFCs

OFFSET CREDITS

Domestic offsets, with quantitative limits

ALLOCATION

Free Allocation: Output-based Benchmarking

AVERAGE 2025 PRICES

Excess emissions charge set at CAD 95 (USD 68) for 2025, with credit prices determined by the market

TOTAL REVENUE[1]

Proceeds of CAD 924 million (USD 713 million) for compliance years 2019 to 2022
Proceeds of CAD 227 million (USD 174 million) in 2022

MEMBER PROVINCES AND TERRITORIES

As of the beginning of 2026, the federal OBPS applies in: Manitoba, Nunavut, Prince Edward Island, and Yukon

Facilities can provide compensation for GHG emissions that exceed the facility's annual emissions limit through one or an eligible combination of the following mechanisms:

1. making an excess emissions charge payment to the government at CAD 110 (USD 78.70) for the 2026 compliance period;
2. remitting surplus credits purchased from other facilities or retained from previous periods; and/or
3. remitting eligible offset credits from a recognized provincial system or remitting federal offset credits.

Amendments to the OBPS Regulations were made in March 2025 to ensure the continued effective functioning of the system following the elimination of the fuel charge. These amendments also modified the definition of on-site transportation emissions to ensure those emissions remain covered by industrial carbon pricing.

YEAR IN REVIEW

The federal government eliminated the federal fuel charge on April 1, 2025, by setting all fuel charge rates to zero. Consequential amendments to the OBPS Regulations, published on March 15, 2025, ensure continued effective functioning of the system following fuel charge elimination. These amendments modified the definition of on-site transportation emissions to ensure those emissions remain covered by industrial carbon pricing and shortened the compliance period for voluntary facilities where designation is cancelled by the Minister in 2025.

In December 2025, the federal government published a discussion paper entitled "Driving Effective Carbon Markets in Canada". Following engagement on the paper, the government will update the carbon pricing benchmark and will consult on potential updates to the federal OBPS Regulations.

EMISSIONS & TARGETS OF CANADA

OVERALL GHG EMISSIONS (including indirect CO_2, excluding LULUCF), **2023**
(in $MtCO_2e$, share of total in %)

Energy	562.2	81%
Industrial processes	53.5	8%
Agriculture	55.2	8%
Waste	23.0	3%
Total	**693.9**	

Energy industries	180.1	26%
Manufacturing industries and construction	65.0	9%
Transport	156.3	23%
Commercial, institutional, and residential	75.3	11%
Other energy	85.4	12%

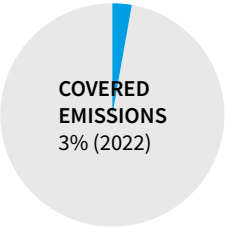
GHG REDUCTION TARGETS

By 2030: 40-45% below 2005 levels (NDC 2.0)
By 2035: 45-50% below 2005 levels ("Canadian Net-Zero Emissions Accountability Act")
By 2050: Climate neutrality ("Canadian Net-Zero Emissions Accountability Act")

ETS COVERAGE & PHASES

COVERED EMISSIONS 2022

Verified ETS emissions: 17.4 $MtCO_2e$



CAP OR TOTAL EMISSIONS LIMIT

The federal OBPS does not set a binding limit or cap on emissions. The federal OBPS is designed to preserve the marginal price incentive of a carbon price while mitigating carbon leakage and adverse competitiveness risks to reduce emissions.

SECTORS AND THRESHOLDS

SECTORS: Power and industry

INCLUSION THRESHOLDS: Coverage is mandatory for facilities in the EITE industrial and electricity sectors that emit equal to or more than 50,000 tCO_2e per year. Smaller facilities with annual emissions equal to or more than 10,000 tCO_2e from sectors at risk of carbon leakage and adverse competitiveness impacts can opt in to participate voluntarily.

POINT OF REGULATION

Point source (power, industry)

TYPE OF ENTITIES

Facilities

NUMBER OF ENTITIES

In 2025, 41 facilities were covered under the federal OBPS (14 mandatory and 27 voluntary). However, 11 voluntary participants opted out or ceased to be a covered facility by the end of 2025. Those opting out have compensation obligations associated with emissions that occurred until April 1, 2025.

ALLOWANCE ALLOCATION & REVENUE

ALLOWANCE ALLOCATION

Allowances are not issued in OBPS systems; rather, OBPS systems issue credits to some facilities based on their performance in relation to emissions intensity benchmarks (standards) called output-based standards. These benchmarks are primarily set using the production-weighted average emissions intensity of all facilities making similar products across Canada.

Each covered facility calculates an annual emissions limit based on its level of production and the relevant output-based standards.

Facilities that emit less than their emissions limit receive surplus credits (compliance units) for free, corresponding to the number of tCO_2e below the limit. Facilities that emit more than their emissions limit must provide compensation only for emissions above their emissions limit. This is similar to free allocation based on benchmarks. Surplus credits can be banked or sold to entities that emit more than their emissions limits (see below for more details).

USE OF REVENUES

General budget, including debt reduction

Low-carbon innovation

Provinces that voluntarily adopted the federal OBPS could opt for a direct transfer of all proceeds from the federal OBPS to the jurisdiction of origin for use according to their needs. These revenues can be added to the general budget of the jurisdiction and used for any purpose at the province/territory's discretion.

In provinces where the federal system has been applied and not requested, proceeds from the OBPS are returned to the provinces or territories through the OBPS Proceeds Fund to support low-carbon technology deployment.

The total amount of proceeds collected by the federal government in excess emissions charge payment under the OBPS for the 2022 compliance period was approximately CAD 227 million (USD 174 million).

FLEXIBILITY & LINKING

BANKING AND BORROWING

Banking is allowed, but surplus credits may not be surrendered for compliance if they were issued more than five years before being surrendered.

Borrowing is not allowed.

OFFSET CREDITS

The use of domestic offset credits is allowed.

QUALITATIVE LIMITS: Two types of offset credit can be used for compliance under the OBPS: recognized units and federal GHG offset credits. Both types of credits must have been issued for projects taking place in Canada that began in 2017 or later.

Recognized units are offset credits issued by a province or territory under a recognized offset program and offset protocol and meet the requirements under section 78 of the OBPS, including:

- having been issued for projects located in Canada that began in 2017 or later;
- being valid (not having been suspended, invalidated, or revoked);
- having been issued for an offset project that is registered in a recognized provincial offset program under a recognized offset protocol that appear on the List of Recognized Offset Programs and Protocols for the Federal OBPS;
- having been verified; being eligible for use as a method of compensation or compliance with respect to a pricing mechanism for GHG emissions in the province in which it was issued.

Federal GHG offset credits are issued under Canada's GHG offset credit system, and federal offset protocols are applicable in all provinces and territories in Canada, except for jurisdictions where the same project activity is covered by an active protocol in a provincial or territorial offset program. As of October 2025, there are four protocols under the federal GHG offset credit system:

landfill methane recovery and destruction, reduction of GHG emissions from refrigeration systems, improved forest management on private land, and reducing enteric methane emissions from beef cattle.

To be eligible for use under the OBPS, federal offset credits and recognized units must have been issued no earlier than 2017 and for reductions or removals that took place less than eight years before being surrendered or before the deadline for surrendering.

QUANTITATIVE LIMITS: Since 2022, at least 25% of the compensation required for a facility's excess emissions must be met in the form of an excess emissions charge (EEC) payment.

The first remittance of federal GHG offset credits occurred in Calendar year 2025.

For the 2022 compliance period, 95% of compliance was achieved through compensation as EEC payments, and 5% through surplus credits.

LINKS WITH OTHER SYSTEMS

The Canada federal OBPS currently has a one-way linkage via recognized units with Alberta and British Columbia's offset systems.

OTHER CARBON PRICING INSTRUMENTS IN THE JURISDICTION

The following sub-national jurisdictions have a carbon tax or cap-and-trade system:

- The Northwest Territories: carbon tax
- Québec: cap-and-trade

The following sub-national jurisdictions have OPBSs for industry:

- Alberta: Technology Innovation and Emissions Reduction regulation (TIER)
- British Columbia: OBPS
- New Brunswick: OBPS
- Newfoundland and Labrador: carbon pricing system for large industry
- Nova Scotia: OBPS for Industry
- Ontario: Emissions Performance Standards Program
- Saskatchewan: OBPS Program

COMPLIANCE

COMPLIANCE MECHANISM

Covered entities that have exceeded their annual emissions limit are required to remit compensation for the GHG emissions above the limit. This compensation can be provided in the form of making an excess emissions charge (EEC) payment at the federally established carbon price, remitting surplus credits that were banked from earlier compliance periods or purchased from other covered facilities, or using federal offset credits or recognized units (eligible offset credits from recognized provincial programs and protocols – see 'Offset Credits' section) for each tCO_2e by which the emissions limit was exceeded.

From 2022, at least 25% of the compensation must be provided in the form of EEC payment.

COMPLIANCE PERIOD

One year. The regular-rate compensation deadline is December 15 of each calendar year after the emissions occurred. The increased-rate compensation deadline is February 15 of the year following the regular-rate compensation deadline.

MRV

FRAMEWORK: The information to be included in an annual report is set out in the OBPS Regulations. Starting with 2024, the "Quantification Methods for the Output-Based Pricing System Regulations" specifies the methods for quantifying GHGs, the ratio of heat and the quantity of electricity generated.

MONITORING: Covered entities must monitor their emissions, production levels, and captured and stored emissions on an annual basis. For covered entities, monitoring of production must happen with respect to each of the regulated industrial activities. Electricity generators must monitor their emissions and electricity production for each unit and in aggregate.

REPORTING: Reports must be submitted by June 1 of the calendar year following the end of the compliance period for which the annual report is prepared, along with a verification report. Reports must also include the GHG emissions limit applicable to the covered entity for the compliance period, and the difference (if any) between the emissions limit and the actual emissions.

VERIFICATION: Reports must be verified by accredited third parties. Only a third party which is accredited as a verification body to the ISO Standard 14065 by the Standards Council of Canada (SCC), the American National Standards Institute (ANSI) or another accreditation organization that is a member of the International Accreditation Forum is authorized to verify an annual report or a corrected report.

PENALTIES AND ENFORCEMENT

If a facility fails to provide compensation by December 15 of each calendar year after the emissions occurred, it must provide compensation by the increased-rate compensation deadline of 15 February of the year following the regular-rate compensation deadline. The increased-rate compensation is four times the regular rate. Failing to provide compensation by the increased-rate compensation deadline is an offence under the Act and is also a violation that can proceed under the "**Environmental Violations Administrative Monetary Penalties Act**".

MARKET REGULATION

MARKET DESIGN

MARKET PARTICIPATION: Compliance entities include mandatory and voluntary participants (for inclusion thresholds, see 'Sectors and Thresholds' section). Regulatory provisions allow other market participants and offset proponents to open accounts in the Credit and Tracking System (CATS).

MARKET TYPES:

Primary: Surplus credits are issued by the government to facilities based on their performance compared to the applicable output-based standards. Surplus credits are not auctioned.

Secondary: Covered entities may purchase surplus credits from other covered entities that have outperformed their compliance obligation. Other market participants and offset proponents may also participate in this market. Transactions take place in CATS, where users can post messages declaring their intent to buy or sell units, as well as answer to posted messages and transfer credits.

LEGAL STATUS OF ALLOWANCES:

The legal nature of surplus credits is not specified in the OBPS Regulations.

MARKET STABILITY PROVISIONS

OBPS Proceeds Fund

Instrument type: Set price or price trajectory

Functioning: The excess emissions charge (EEC) compliance option acts as a price ceiling for the system (see 'Compliance Mechanism' section). The EEC payment is set at CAD 95 (USD 67.95) in 2025 and will increase by CAD 15 (USD 10.73) annually until it reaches CAD 170 (USD 121.60[3]) per tCO_2e in 2030.

OTHER INFORMATION

INSTITUTIONS INVOLVED

Environment and Climate Change Canada (ECCC): Responsible for the design, coordination, implementation, and monitoring of Canada's climate action plans and targets, and the implementation of the federal carbon pollution pricing backstop system; specifically, the federal carbon pricing system for industry (the OBPS), in provinces and territories where it applies. ECCC is also administering the OBPS Proceeds Fund, which assists the return of OBPS proceeds to their jurisdiction of origin in some jurisdictions.

EVALUATION/ETS REVIEW

In December 2025, the federal government published a discussion paper on Driving Effective Carbon Markets in Canada. Following engagement on the paper in winter 2026 the government will update the carbon pricing benchmark and will consult on potential updates to the federal OBPS Regulations.

REGULATORY FRAMEWORK

- → **Greenhouse Gas Pollution Pricing Act**
- → **Output-Based Pricing System Regulations**
- → **Environmental Violations Administrative Monetary Penalties Act**

3 USD conversion based on 2025 IMF exchange rate; actual future exchange rates may differ.

COLORADO

GREENHOUSE GAS EMISSIONS AND ENERGY MANAGEMENT FOR MANUFACTURING REGULATION

- Baseline-and-credit approach
- EITE (GEMM 1) facilities face compliance obligations based on emissions intensity targets
- GEMM 2 facilities face compliance obligations based on 2030 absolute emissions reduction targets
- From 2028, oil and gas midstream fuel combustion equipment operators will face compliance obligations based on 2030 absolute emissions caps

ETS DESCRIPTION

In October 2023, the Colorado Air Quality Control Commission (AQCC) adopted a regulation establishing an ETS covering large in-state manufacturers, beginning with the first compliance year in 2024. In December 2024, the AQCC adopted another regulation expanding the ETS's covered entities, beginning in the year 2028, to include oil and gas midstream fuel combustion equipment operations. The GHG crediting and tracking system, referred to as "GHG CATS", came into force in November 2024. The regulations are designed to support the achievement of Colorado's statutory industrial and manufacturing sector-wide as well as its economy-wide GHG emission reduction goals. The regulations prioritize benefits to disproportionately impacted communities through reductions of locally harmful air pollutants.

The AQCC initially set reduction requirements for large manufacturing emitters through the "Greenhouse Gas and Energy Management for Manufacturing regulation" (GEMM 1) beginning in 2021, under the statutory direction of Colorado House Bill 19-1261. The GEMM 1 regulation applied to energy-intensive, trade-exposed (EITE or GEMM 1) manufacturing stationary sources that emitted equal to or greater than 50,000 tCO_2e annually. This threshold was lowered to 25,000 tCO_2e with the adoption of an amendment to the GEMM regulation (GEMM 2).

The AQCC expanded the GEMM 1 rule through the adoption of GEMM 2 in October 2023. The GEMM 2 regulation currently covers 17 manufacturing facilities (emitting equal to or greater than 25,000 tCO_2e) in addition to the four facilities that fall in the EITE (GEMM 1) categorization. While GEMM 2 institutes absolute emission reduction requirements, EITE (GEMM 1) sources adhere to intensity-based emissions limitations.

The AQCC further expanded the entities covered with the adoption of a rule in December 2024 covering GHG emissions from oil and gas midstream fuel combustion equipment, such as engines, turbines, and heaters. Equipment operators are subject to absolute emissions caps and may participate in the market beginning in 2028. This will constitute a third covered group in addition to GEMM 1 and GEMM 2, expanding Colorado's ETS to cover over 60% of the industrial and manufacturing sector's emissions.

SECTORS

INDUSTRY

CAP OR TOTAL EMISSIONS LIMIT

- Absolute emissions limit (GEMM2) 2.3 $MtCO_2e$ for 2030 and beyond
- Intensity-based emissions limit (GEMM1)

GREENHOUSE GASES

CO_2, CH_4, N_2O, SF_6, HFCs, PFCs, NF_3

ALLOCATION

Free Allocation: Output-based Benchmarking

AVERAGE 2025 PRICES

Average secondary market price at auction: USD 24.91[1]

1 The Colorado auction matches bidders

YEAR IN REVIEW

In May 2025, the Air Pollution Control Division (APCD) issued the first credits to GEMM 2 facilities based on the extent to which their respective annual emissions were below their 2030 emissions reduction obligations. This enabled facilities to begin trading bilaterally or purchase units through the annual auction.

Colorado conducted its first annual auction for regulated industrial and manufacturing sources (GEMM 1 and GEMM 2) in June 2025 for the 2024 vintage year's GHG credits. The auction included two rounds with five entities participating as bidders and three as offerors. A total of 2,760 GHG credits matched through both rounds, with settlement prices of USD 24.90 per credit in the first round and USD 25 in the additional round, resulting in a total value for the auction of USD 68,739.

Additionally, two bilateral transactions occurred in 2025, resulting in a total of 28,644 credits traded outside of the auction. A summary of bilateral transaction prices will be released in 2026.

EMISSIONS & TARGETS OF COLORADO

OVERALL GHG EMISSIONS (including indirect CO_2, excluding LULUCF), **2023**
(in $MtCO_2e$, share of total in %)

Energy	96.7	83%
Industrial processes	3.5	3%
Agriculture	14.9	13%
Waste	3.2	3%
Total	**118.4**	**100%**

Energy industries	42.3	36%
Industrial energy	12.0	10%
Transport	29.3	25%
Commercial and residential	13.1	11%

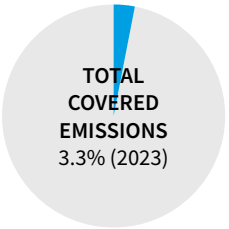
GHG REDUCTION TARGETS

By 2025: 26% reduction below 2005 levels
By 2030: 50% reduction below 2005 levels
By 2035: 65% reduction below 2005 levels
By 2040: 75% reduction below 2005 levels
By 2045: 90% reduction below 2005 levels
By 2050: Net zero
(Colorado Revised Statutes 25-7-102(2)(g)(I))

ETS COVERAGE & PHASES

COVERED EMISSIONS 2023

Verified ETS emissions: GEMM1: 1.8
GEMM2: 2.0
Total: 3.9



PHASES

GEMM 1:
PHASE 1: Five years (2025 to 2029)
PHASE 2: Five years (2030 to 2034)
PHASE 3: Five years (2035 to 2039)
PHASE 4: (2040 onwards)

GEMM 2:
PHASE 1: Three years (2024 to 2026)
PHASE 2: Three years (2027 to 2029)
PHASE 3: (2030 onwards)

MIDSTREAM:
Annual (2030 and thereafter)

CAP OR TOTAL EMISSIONS LIMIT

For EITE or GEMM 1 facilities, the emissions limit under the Colorado GEMM regulation changes as a function of production (output) for each EITE or GEMM 1 facility. The total emissions limit is the sum of the facility bottom-up annual emissions limits (EITE or GEMM 1) and facility emissions below 2030 reduction targets (GEMM 2) for all covered entities.

The total emissions limit under the Colorado midstream oil and gas regulation is 3,930,228 tCO_2e by 2030 and each year thereafter.

SECTORS AND THRESHOLDS

SECTORS: GEMM 1 and GEMM 2 regulations cover high-emitting stationary sources in the industrial and manufacturing sector.

GEMM 1 FACILITY INCLUSION THRESHOLDS: 25,000 tCO_2e and EITE source classification
GEMM 2 FACILITY INCLUSION THRESHOLDS: 25,000 tCO_2e

MIDSTREAM OPERATOR INCLUSION THRESHOLDS: All midstream fuel combustion equipment operators will be subject to emissions caps that take effect in 2030; operators with emissions greater than 25,000 tCO_2e in 2021 will be subject to scaled reduction requirements via their caps.

POINT OF REGULATION
Point source (industrial and manufacturing stationary sources)

TYPE OF ENTITIES
Manufacturing stationary sources
Midstream fuel combustion equipment[2]

NUMBER OF ENTITIES
GEMM 1: 4 facilities (2025)
GEMM 2: 17 facilities (2025)

ALLOWANCE ALLOCATION & REVENUE

ALLOWANCE ALLOCATION
GEMM 1 facilities are allocated GHG reduction credits annually, free of charge, based on how much less the facility's annual direct GHG emissions, in tCO_2e, are compared with its emissions limitation in the relevant year.

GEMM 2 facilities are allocated GHG reduction credits annually, free of charge, based on how much lower the facility's annual direct GHG emissions are compared with its 2030 GHG emissions requirement.

From 2028, midstream fuel combustion equipment operators will be allocated GHG reduction credits annually, free of charge, based on how much lower the operator's annual direct GHG emissions from midstream fuel combustion equipment are compared with its 2030 GHG emissions cap.

GEMM 1 and GEMM 2 facilities are allocated credits by the first Tuesday of May each year. Starting in May 2028, midstream fuel combustion equipment operators will also be allocated credits by the first Tuesday of May each year.

From the outset of the trading system, GEMM 2 facilities may generate credits through onsite carbon capture and storage projects, subject to an approved protocol. From 2031, GEMM 2 facilities will also be able to generate GHG reduction credits through offsite direct air carbon capture projects, subject to an approved protocol. Facilities that generate GHG reduction credits may use the credits toward future compliance obligations or trade the credits to other GEMM facilities.

USE OF REVENUES
The Colorado ETS does not collect revenues or handle the exchange of funds from buyer to seller. The auction facilitates the trade, but the financial transaction is done directly between the facilities.

FLEXIBILITY & LINKING

BANKING AND BORROWING
EITE (GEMM 1) and GEMM 2 facilities can bank GHG credits for up to three years from the date generated.

Borrowing is not allowed.

OFFSET CREDITS
The use of offsets is not allowed as a compliance option.

LINKS WITH OTHER SYSTEMS
The Colorado industrial and manufacturing GHG credit trading system is not linked with any other system.

COMPLIANCE

COMPLIANCE MECHANISM
Each covered facility/operator must surrender one compliance unit (GHG credit) per tCO_2e that exceeds its annual emissions limit or compliance obligation in the relevant compliance period.

An EITE (GEMM 1) facility's annual emissions limit for a compliance year is calculated by using its previous year's production totals and emissions intensity requirement and applying a 5% mass-based emissions reduction. The annual emissions limit varies each year depending on the production level of the facility. The facility's emissions intensity requirement is reflective of best available control technology and industry standards and is updated every five years.

A GEMM 2 facility's GHG emissions requirement is based on its historical mass-based emissions reductions between 2015 and its baseline year (either 2021 or 2022, whichever has the higher emissions) and the facility's share of emission contributions to the GEMM 2 group's cumulative baseline. These two factors were used to determine the interim (2024 to 2029) and 2030 emissions requirements such that the 17 facilities collectively achieve a 20% mass-based reduction in emissions by 2030 relative to the group's aggregate emissions in 2015.

2 Coverage of midstream operators begins in 2028.

Beginning in 2030, before they can access the trading system, GEMM 2 facilities must implement their portfolio of onsite, technically feasible emissions reduction measures as well as undertake additional GHG and harmful air pollutant reductions if the facility is located near a disproportionately impacted community. The Colorado Department of Public Health and Environment's Air Pollution Control Division (APCD) reviews and approves the GHG reduction plans.

Under the regulation adopted in December 2024, midstream fuel combustion equipment operators' GHG emission caps starting in 2030 are based on recent actual emissions, avoided emissions from recent voluntary electrification projects, and a sliding scale that places relatively more reduction burdens on larger companies. Smaller companies (those emitting less than 25,000 tCO_2e in 2021) are assigned an emission cap that does not require reductions per se but instead requires them to maintain applicable GHG emissions at the levels of a recent representative year.

COMPLIANCE PERIOD

GEMM 1: One year.
GEMM 2: Two three-year compliance periods (2024 to 2026 and 2027 to 2029) with one-year compliance periods from 2030 and beyond.

MRV

MANUFACTURING STATIONARY SOURCES
FRAMEWORK: The GHG emissions reporting rules for both GEMM 1 and GEMM 2 facilities are outlined in Colorado's "Greenhouse Gas Reporting and Emission Reduction Requirements" regulation.

GEMM 1:
MONITORING: Beginning in 2026, EITE (GEMM 1) facilities must submit a report each year including data regarding the previous year's total emissions, total units of production, and emissions rate per product.

REPORTING: Emissions reports must be submitted by May of each year.

VERIFICATION: EITE (GEMM 1) facilities must have a third-party conduct energy and GHG emission control audits every five years to establish and determine whether best available emissions control technology (BAECT) and best energy management practices (BMP) are being employed. The audit reports require both GHG BAECT and energy BMP analyses that identify and rank all technically feasible control technologies and strategies and energy efficiency measures.

GEMM 2:
MONITORING: Beginning in 2025, GEMM 2 facilities must submit a report each year, including data regarding the previous year's total direct emissions. GEMM 2 facilities must also submit GHG reduction plans that identify what technically feasible portfolio of onsite measures at or below the cost-effectiveness threshold established in the rule they plan to use to meet their emission reduction requirements.

REPORTING: Emissions reports must be submitted by the end of March each year. Compliance reports as well as GHG reduction plan progress and compliance reports must be submitted by the end of September for each compliance period (2024 to 2026 to be submitted in 2027, 2027 to 2029 to be submitted in 2030, and annually thereafter).

VERIFICATION: GHG reduction plans must undergo a technical and regulatory review by an independent third party.

OIL AND GAS MIDSTREAM:
FRAMEWORK: The rules for reporting GHG emissions for midstream oil and gas fuel combustion equipment operators are outlined in Colorado's "Control of Emissions from Oil and Gas Emissions Operations" Regulation No. 7 (5 CCR 1001-9).

MONITORING: Beginning in 2028, midstream fuel combustion equipment operators seeking to generate credits must submit a report by the end of March each year, including data regarding the previous year's total direct emissions, in order to be eligible to generate credits for the previous year. Additionally, all midstream fuel combustion equipment operators will be required to submit an annual report that describes their emissions and plans for reductions to achieve compliance.

REPORTING: Midstream fuel combustion equipment operator emissions reports to generate credits will be due by the end of March each year. The emissions reports describing their plans for reductions to achieve compliance will need to be submitted by the end of June each year.

PENALTIES AND ENFORCEMENT

GEMM 1: In the event of noncompliance, EITE (GEMM 1) facilities will need to surrender three GHG credits for every tCO_2e emitted in excess of the facility's annual emissions limit and may be subject to a civil penalty or other enforcement action.

GEMM 2: In the event of noncompliance, a GEMM 2 facility's GHG emissions reduction requirement for the relevant compliance period will be adjusted downwards by at least two times the amount that the facility exceeded its emissions reduction requirement. The resulting increased compliance obligation must be achieved within three years of the period of non-compliance. GEMM 2 facilities not in compliance for a particular year must submit a mitigation plan by the end of the following calendar year. Civil penalties and other enforcement actions may also be assessed.

OIL AND GAS MIDSTREAM: In the event of noncompliance, the Division will pursue appropriate enforcement measures through the existing oil and gas compliance and enforcement program.

MARKET REGULATION

MARKET DESIGN

MARKET PARTICIPATION: Compliance entities

MARKET TYPES:

Primary: Since May 2025, GEMM 1 and GEMM 2 facilities receive credits corresponding to the extent to which their emissions are below their 2030 emissions reduction obligations on the first Tuesday of May each year. Beginning in 2028, midstream fuel combustion equipment operators will receive credits corresponding to the extent to which their emissions are below their 2030 emissions reduction obligations.

Auction: An annual auction is held in June each year. Bidders may not also be offerors for the same vintage year of credits and vice versa. APCD administers the auction but does not handle the money for any transactions.

Secondary: Participants may bilaterally contract between themselves through the GHG credit trading system that was established in November 2024. APCD helps facilitate direct transfers of GHG credits between covered entities but does not handle the money for any transactions.

Retirement: All participants may retire credits and count these towards their own compliance within the three-year banking period.

OTHER INFORMATION

INSTITUTIONS INVOLVED

Colorado Air Quality Control Commission: Responsible for holding hearings and adopting regulations on air quality matters consistent with statutory direction.

Colorado Department of Public Health and Environment Air Pollution Control Division: Responsible for developing, administering, and enforcing the adopted AQCC regulations based on a mandate from the Colorado legislature.

EVALUATION/ETS REVIEW

GEMM 1 and 2 have achieved a combined 23.4% reduction in emissions from 2015 levels in 2024. This equates to 1.2 $MtCO_2e$ reduced since 2015.

The AQCC has directed the Division to evaluate the trading program and to identify any modifications that may be necessary. In addition, the AQCC directed the Division to report on the following before the end of December 2025:

- the status of the trading program;
- and the co-pollutant reductions associated with the credits generated for the trades.

The Division is scheduled for a request for rulemaking before the AQCC in February 2026. At the request, the AQCC will decide whether to move forward with a formal rulemaking in July 2026.

REGULATORY FRAMEWORK

- → **Greenhouse Gas Emissions and Energy Management for Manufacturing Phase 1 and Phase 2 Regulation (AQCC Regulation No. 27)**
- → **Control of Emissions from Oil and Gas Emissions Operations (AQCC Regulation No. 7)**
- → **Climate Action Plan to Reduce Pollution (House Bill 19-1261)**
- → **Environmental Justice Act (House Bill 21-1266)**
- → **Collect Long-Term Climate Change Data (Senate Bill 19-096)**
- → **Greenhouse Gas Emission Reduction Measures (Senate Bill 23-016)**

MARYLAND

- Economy-wide cap-and-invest program proposed in Maryland's Climate Pollution Reduction Plan
- Would work alongside RGGI, which covers the state's power sector emissions
- Maryland Commission on Climate Change recommended evaluation of a cap-and-invest program in its 2024 and 2025 Annual Reports

In December 2023, Maryland's "Climate Pollution Reduction Plan" was published, describing how economy-wide policies, such as a cap-and-invest program, could be necessary for the state to achieve its emissions reduction goals. Maryland's power sector is currently regulated by the Regional Greenhouse Gas Initiative (RGGI), but the 2023 plan includes direction for the state to consider expanding to an economy-wide cap-and-invest program. It cites the potential for additional revenues to be invested in clean energy projects, consumer rebates, and other decarbonization initiatives. The Maryland Department of the Environment (MDE) is exploring how this coverage of additional emissions sources could work.

In its 2025 Annual Report, the Maryland Commission on Climate Change recommended that the state take the next steps to evaluate and propose potential designs for an economy-wide cap-and-invest program. The recommendation also called for low-income households to be held harmless and to receive a percentage of the dividends from a cap-and-invest program.

In force

Under development

Under consideration

EMISSIONS & TARGETS OF MARYLAND

OVERALL GHG EMISSIONS (including indirect CO_2, excluding LULUCF), **2020**
(in $MtCO_2e$, share of total in %)

Energy use	63.8	86%
Industrial processes	4.5	6%
Agriculture	1.7	2%
Waste	4.0	5%
Total	**74.0**	

Electricity	18.3	25%
Residential, commercial and industrial fuel use	13.5	18%
Transport	29.6	40%
Fossil fuel industry	2.4	3%

GHG REDUCTION TARGETS

By 2031: 60% reduction from 2006 levels ("Climate Solutions Now Act")
By 2045: Net zero (Climate Solutions Now Act)

FLEXIBILITY & LINKING

OTHER CARBON PRICING INSTRUMENTS IN THE JURISDICTION

ETS: RGGI

OTHER INFORMATION

INSTITUTIONS INVOLVED

Maryland Department of the Environment (MDE): Agency responsible for implementing policies to achieve Maryland's climate goals, including developing the cap-and-invest program if legislation is passed.
Maryland Commission on Climate Change (MCCC): Cross-sectoral, state-level advisory body that provides recommendations for climate change action in Maryland.
University of Maryland's Center for Global Sustainability: MDE's scientific partner in developing Maryland's Climate Pathway report.

REGULATORY FRAMEWORK

→ Maryland's Climate Pollution Reduction Plan
→ Maryland's Climate Pathway
→ Climate Solutions Now Act of 2022

MASSACHUSETTS

MASSACHUSETTS LIMITS ON EMISSIONS FROM ELECTRICITY GENERATORS

- Complements RGGI to help ensure that Massachusetts achieves its mandatory mitigation targets
- Four years of full compliance from all covered entities
- Began auctioning future year vintage allowances in 2022

ETS DESCRIPTION

The Massachusetts Limits on Emissions from Electricity Generators (regulation "310 CMR 7.74") began operating in 2018. It covers around 9% of the state's CO_2 emissions, all from the power sector. Under this regulation, covered entities must surrender allowances for all of their covered emissions.

Since 2021, 100% of allowances have been allocated in quarterly auctions. Since 2022, future vintage allowances have also been sold in the regular auctions. The revenues raised are used to further reduce GHG emissions, as well as to fund adaptation programs and projects targeting communities adversely impacted by air pollution. A third party monitors the market to identify indications of anti-competitive behavior.

The program complements RGGI: electricity generators in the state must comply (i. e., hold and surrender allowances) with both RGGI and the Massachusetts program. The program was implemented in response to a 2016 ruling from the state's Supreme Court to ensure that Massachusetts achieves its mandatory mitigation targets.

YEAR IN REVIEW

The September 2025 auction saw prices clear at USD 15.03/tCO_2 for 2025 vintages and USD 12.00/tCO_2 for 2026 vintages. The difference in clearing price demonstrates that regulated entities had a preference for allowances that can be used for compliance in 2025.

In force
Under development
Under consideration

SECTORS

POWER

CAP OR TOTAL EMISSIONS LIMIT

Absolute cap
7.2 $MtCO_2$ (2026)

GREENHOUSE GASES

CO_2 only

OFFSET CREDITS

Not allowed

ALLOCATION

Auctioning

AVERAGE 2025 PRICES

Weighted average auction price (vintage 2025): USD 10.35
Weighted average auction price (all vintages in 2025 auctions): USD 13.12

TOTAL REVENUE

USD 264.3 million since the beginning of the program
USD 78.4 million in 2025

EMISSIONS & TARGETS OF MASSACHUSETTS

OVERALL GHG EMISSIONS (including indirect CO_2, excluding LULUCF), **2022**[1]

(in $MtCO_2e$, share of total in %)

Energy	63.7	93%
Industrial processes	4.3	6%
Agriculture and land use	0.2	<1%
Waste	0.6	1%
Total	**68.8**	

Residential	13.0	19%
Commercial	11.5	17%
Industrial	4.3	6%
Transport	26.2	38%
Electricity	12.2	18%
Natural Gas Systems	0.7	1%

GHG REDUCTION TARGETS

By 2030: 50% GHG emissions reduction below the 1990 level ("An Act Creating a Next-Generation Roadmap for Massachusetts Climate Policy")

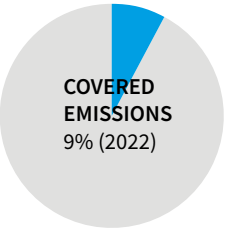
By 2040: 75% GHG emissions reduction below the 1990 level (An Act Creating a Next-Generation Roadmap for Massachusetts Climate Policy)

By 2050: Net-zero GHG emissions. Positive emissions will be compensated with removals, and positive emissions in 2050 are not to be greater than 85% below the 1990 level. (An Act Creating a Next-Generation Roadmap for Massachusetts Climate Policy)

ETS COVERAGE & PHASES

COVERED EMISSIONS 2022

Verified ETS emissions: 6.4 $MtCO_2$



CAP OR TOTAL EMISSIONS LIMIT

An absolute cap limits the total emissions allowed in the system and is fixed ex-ante.

The cap of the Massachusetts Limits on Emissions from Electricity Generators declines annually by 223,876 tCO_2 until it reaches 1.8 $MtCO_2$ by 2050.

ANNUAL CAPS:

2019: 8.7 $MtCO_2$
2020: 8.5 $MtCO_2$
2021: 8.3 $MtCO_2$
2022: 8.1 $MtCO_2$
2023: 7.8 $MtCO_2$
2024: 7.6 $MtCO_2$
2025: 7.4 $MtCO_2$
2026: 7.2 $MtCO_2$

SECTORS AND THRESHOLDS

Large electricity generators subject to RGGI, with an installed capacity of or greater than 25 MW.

POINT OF REGULATION

Point source (power)

TYPE OF ENTITIES

Installations (i.e., electricity generating facilities)

NUMBER OF ENTITIES

24 installations (2023)

1 This value was retrieved from the **MassDEP Emissions Inventories**.

ALLOWANCE ALLOCATION & REVENUE

ALLOWANCE ALLOCATION

AUCTIONING: From 2019, allowances were partially auctioned, with 25% sold in 2019 and 50% in 2020. Full auctioning began in 2021. Currently, auctions take place on a quarterly basis. The results are included in market monitoring reports posted on the program's web page. From 2022, MassDEP offers future vintage allowances at every auction.

FREE ALLOCATION: Before 2021, non-auctioned allowances were freely allocated through grandparenting based on historical (2013 to 2015) generation.

USE OF REVENUES

Climate mitigation

FLEXIBILITY & LINKING

BANKING AND BORROWING

Banking is allowed, but restrictions apply to ensure that emissions in a given year do not exceed the previous year's cap. To achieve this, the number of allowances auctioned is adjusted downward each year to compensate for banked allowances.

Borrowing is not allowed, but "emergency deferred compliance" is possible. This provision allows an electricity generating facility to defer, for one year, compliance for part or all of the emissions emitted during an emergency. Allowances for those emissions must be surrendered on a two-for-one basis in the following year. An emergency is defined as "a period during when the regional transmission organization has issued an alert that an abnormal condition affecting the reliability of the power system exists or is anticipated in Massachusetts".

OFFSET CREDITS

The use of offset credits is not allowed.

LINKS WITH OTHER SYSTEMS

The Massachusetts ETS is not linked with any other system.

OTHER CARBON PRICING INSTRUMENTS IN THE JURISDICTION

ETS: RGGI

COMPLIANCE

COMPLIANCE MECHANISM

Covered entities must surrender one compliance unit (allowance) per tCO_2e emitted for all their covered emissions.

COMPLIANCE PERIOD

One year.

MRV

FRAMEWORK: Legal basis for the MRV system is established by regulation 310 CMR 7.70 "CO_2 Budget Trading Program" and 310 CMR 7.74 "Electricity Generator Emissions Limits".

MONITORING: Covered entities must use continuous emissions monitoring systems (CEMS) consistent with 40 CFR Part 75 and 310 CMR 7.70(8), recording readings at least once every 15 minutes. The MRV threshold applies to electricity generators with an installed capacity of 25 MW or more.

REPORTING: Covered entities must report their CO_2 emissions by the start of March of the year following the reporting year.

VERIFICATION: Emissions must match reports to RGGI and the US Environmental Protection Agency. Documents (i.e., emissions reports and compliance certification reports) must be certified by a designated representative identified by the facility, and MassDEP may choose to conduct audits.

PENALTIES AND ENFORCEMENT

If MassDEP finds that an entity is in violation of compliance, this will be presumed to constitute "a significant impact to public health, welfare, safety or the environment". In addition to penalties, the covered entity must submit three allowances for each tonne of non-compliance.

MARKET REGULATION

MARKET DESIGN

MARKET PARTICIPATION: Compliance entities only.

MARKET TYPES:

Primary: The allowance auctions are held every three months using a sealed bid, uniform price auction format. No bidder can purchase more than 45% of the allowances offered for sale in any one auction. Auctions are managed by Enel X.

Secondary: Compliance entities may transfer allowances to other compliance entities at any time except during the month of March. The Massachusetts Carbon Allowance Registry is used to track the ownership of allowances. Potomac Economics monitors the conduct of market participants in the auctions and in the secondary market to identify indications of anti-competitive conduct.

LEGAL STATUS OF ALLOWANCES: Allowances constitute a "limited authorization to emit one metric ton of CO_2" to comply with the regulation. They are not property rights.

MARKET STABILITY PROVISIONS

MINIMUM AUCTION RESERVE PRICE

Instrument type: Price-based instrument

Functioning: Auctions have a reserve price of USD 5 for vintage 2025 allowances. The reserve price is USD 0.50 for future vintage allowance sales.

OTHER INFORMATION

INSTITUTIONS INVOLVED

Executive Office of Energy and Environmental Affairs: Cabinet-level office that oversees MassDEP.

Massachusetts Department of Environmental Protection (MassDEP): Regulatory agency implementing the Massachusetts Limits on Emissions from Electricity Generators (regulation 310 CMR 7.74).

Potomac Economics: Current market monitor. Monitors the conduct of market participants in the auctions and in the secondary market to identify indications of anti-competitive conduct.

Enel X: Manages the auctions.

APX: Maintains allowance tracking software platform.

EVALUATION/ETS REVIEW

The first program review was conducted in 2021, with a review planned every ten years thereafter.

REGULATORY FRAMEWORK

→ **Electricity Generator Emissions Limits (310 CMR 7.74)**
→ **Code of Federal Regulations, Title 40, Part 75 (40 CFR Part 75)**
→ **Massachusetts CO2 Budget Trading Program (310 CMR 7.70)**

NEW BRUNSWICK

NEW BRUNSWICK OUTPUT-BASED PRICING SYSTEM

- Transitioned from federal OBPS in January 2021
- Compliance based on emissions that exceed an allowable intensity of output of each covered entity
- Opt-in possible for smaller emitters

ETS DESCRIPTION

New Brunswick transitioned large industrial emitters from the federal output-based pricing system (OBPS) to a provincial OBPS from January 2021. This OBPS is established under the "Climate Change Act" and the "Reduction of Greenhouse Gas Emissions Regulation" and seeks to deliver incremental GHG emissions reductions at the lowest cost to industry, while supporting low-carbon growth and investment, minimizing carbon leakage, ensuring fairness, and providing clarity, administrative efficiency, accountability, and transparency. It is an intensity-based ETS in which each covered entity must surrender compliance units for emissions that exceed the facility's annual emissions limit. The annual emissions limits are based on emissions intensity benchmarks, which are derived from historical emissions and production data. The system applies to the same sectors and GHGs as the federal system, and follows the same price trajectory, rising CAD 15 (USD 10.73) each year until 2030, resulting in a price of CAD 170 (USD 121.60[2]) per tCO_2e in 2030. The price for the 2026 compliance is CAD 110 (USD 78.68).

YEAR IN REVIEW

New Brunswick published a new version of "The Reporting and Reduction of Greenhouse Gas Emissions Standard" in May 2025. This version contains a new section on the reporting of renewable natural gas for the purpose of calculating the total regulated emissions; an expanded definition of accredited verification bodies; and the requirement for entities to use IPCC Fifth Assessment Report Global Warming Potential values starting from their 2025 emissions data.

1 Value of the coverage in the year
2 USD conversion based on 2025 IMF exchange rate; actual future exchange rates may differ.

In force
Under development
Under consideration

SECTORS

MINING AND EXTRACTIVES

POWER

INDUSTRY

CAP OR TOTAL EMISSIONS LIMIT

Intensity-based emissions limit
6.7 $MtCO_2e$ (2024)[1]

GREENHOUSE GASES

CO_2, CH_4, N_2O, SF_6, HFCs, PFCs

OFFSET CREDITS

Not allowed

ALLOCATION

Free Allocation: Output-based Benchmarking

AVERAGE 2025 PRICES

Set price: CAD 95 (USD 67.95)

TOTAL REVENUE

CAD 39.4 million (USD 28.2 million) since the beginning of the program
CAD 21 million (USD 15.1 million) in compliance year 2023

EMISSIONS & TARGETS OF NEW BRUNSWICK

OVERALL GHG EMISSIONS (including indirect CO_2, excluding LULUCF), **2023**

(in $MtCO_2e$, share of total in %)

Energy	10.1	89%
Industrial processes	0.3	3%
Agriculture	0.4	3%
Waste	0.7	5%
Total	**11.5**	

Energy industries	3.0	26%
Manufacturing industries and construction	0.6	5%
Transport	3.4	29%
Commercial, institutional, and residential	0.7	6%
Other energy	0.2	2%

GHG REDUCTION TARGETS

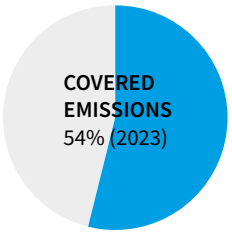
By 2030: 46% reduction below 2005 levels ("New Brunswick's Climate Change Action Plan")

By 2050: Net-zero emissions (New Brunswick's Climate Change Action Plan)

ETS COVERAGE & PHASES

COVERED EMISSIONS 2023

ETS emissions: 6.2 $MtCO_2e$



PHASES

The New Brunswick OBPS is not divided into phases, but compliance periods of one year each.

CAP OR TOTAL EMISSIONS LIMIT

The total emission limit under the New Brunswick OBPS changes as a function of production (output) and is determined bottom-up: it is the sum of the annual emissions limits based on emissions intensity benchmarks for all individual covered entities. The limit is therefore not set ex-ante and is only known after the compliance period ends. It does not represent an absolute cap. The emissions limit is set for each facility (see 'Allowance Allocation' section for details).

SECTORS AND THRESHOLDS

SECTORS: Power, industry, mining and extractives

INCLUSION THRESHOLDS: Coverage is mandatory for facilities with emissions of at least 50,000 tCO_2e/year. Smaller emitters (emitting at least 10,000 tCO_2e/year) may also be covered by the system, on an opt-in basis.

POINT OF REGULATION

Point source (power, industry, mining and extractives)

TYPE OF ENTITIES

Facilities

NUMBER OF ENTITIES

15 (2024) facilities, including seven voluntary opt-in market participants

ALLOWANCE ALLOCATION & REVENUE

ALLOWANCE ALLOCATION

Allocation is determined in relation to annual emissions limits based on emissions intensity benchmarks. Entities that emit less than their emissions limit receive compliance units (called "performance credits"), free of charge, corresponding to the number of tCO_2e below the limit. This is similar to free allocation based on benchmarks. These compliance units can be sold to entities that emit more than their emissions limits (see 'Market Design' for more details).

The emissions limit is set for each facility and is determined based on its emissions intensity in a baseline period (except for electricity generators), the performance standard reduction factors (or for their fuel, for electricity generators) for a given reduction period, and the level of production in the same reduction period. The emissions limit is increased for regulated facilities with on-site cogeneration units which use a large proportion of energy from biomass, and for entities at high carbon leakage risk (specifically lime manufacturing). Captured and stored CO_2 emissions are excluded from the total regulated emissions of the regulated facility.

USE OF REVENUES


Climate mitigation


Low-carbon innovation

In 2023, the government developed and implemented a New Brunswick OBPS Industry Fund, as an additional stream of the New Brunswick Climate Change Fund, which returns proceeds collected from fund credit transactions to New Brunswick OBPS participants to support GHG emission reduction projects. All proceeds are allocated via a merit-based process.

The Climate Change Fund annually publishes information on the projects that have been awarded funding by the Minister of Environment and Climate Change for a given fiscal year (see 'Regulatory Framework' section for details). The list of funded projects for 2025 and 2026, as of May 2025, includes 56 projects led by 12 different departments or organizations for a total value of CAD 58.4 million (USD 41.8 million). These include three projects led by the Department of Agriculture, Aquaculture and Fisheries for CAD 1 million (USD 0.7 million), four led by the Department of Energy for CAD 24.4 million (USD 17.5 million), five led by the Department of Natural Resources for CAD 2.6 million (USD 1.9 million), and two led by the Department of Post-Secondary Education, Training and Labour for CAD 1.7 million (USD 1.2 million), among others.

FLEXIBILITY & LINKING

BANKING AND BORROWING

Banking is allowed for performance credits for up to seven years.
Borrowing is not allowed.

OFFSET CREDITS

The use of offset credits is not allowed as a compliance option in the initial years of the system. However, section 10(1)(c.5)(iii) of the Act provides that the Lieutenant-Governor in Council may make regulations respecting compliance options, which are defined in section 1 of the Act as fund credits, performance credits, offset credits, and other types of credits prescribed by regulation.

LINKS WITH OTHER SYSTEMS

The New Brunswick OBPS is not linked with any other system.

OTHER CARBON PRICING INSTRUMENTS IN THE JURISDICTION

None

COMPLIANCE

COMPLIANCE MECHANISM

Covered entities must surrender one compliance unit (either a performance credit or a fund credit) per tCO_2e that exceeds the facility's annual emissions limit.

COMPLIANCE PERIOD

One year. Compliance reports are due by December 15 of the year following the compliance period.

MRV

FRAMEWORK: The rules for reporting GHG emissions are outlined in New Brunswick's "Reduction of Greenhouse Gas Emissions Regulation" and "Reporting and Reduction of Greenhouse Gas Emissions Standard".

MONITORING: Sections 7.2 and 7.21 of the Climate Change Act sets a monitoring and reporting threshold for industrial facilities that emit 10,000 tCO_2e or more per year. Section 4.1 of the Reporting and Reduction of Greenhouse Gas Emissions Standard specifies that reports submitted by facilities regulated under the OBPS need to be consistent in scope and methodology with the emissions reporting requirements established by Environment and Climate Change Canada in the notice with respect to reporting of greenhouse gases for 2020. GHG estimation methods include monitoring or direct measurement, mass balance, emission factors, and engineering estimates.

REPORTING: GHG emissions reports must be submitted by the beginning of June of the year following the reporting period. The Baseline Emissions Intensity submissions must include, among others, a simplified process flow diagram that provides an overview of the processes that produce all quantified sources of regulated emissions at the regulated facility, a list of all major sources of regulated emissions, all regulated emissions (reported by regulated source and by fuel type), and total units of production for each proposed product produced at the regulated facility for each baseline year. The GHG emissions reports must also contain, among others, a list of all major sources of emissions, all emissions, reported by regulated source category and by fuel type, and the total units of product for each product produced at the regulated facility.

VERIFICATION: Reports must be verified by an accredited verification team. Verification bodies need to be accredited to the ISO Standard 14065 by the Standards Council of Canada, the ANSI National Accreditation Board, or any other accreditation organization that is a member of the International Accreditation Forum. The verification reports must include, among other things, an assessment of the facility's data management systems and quality assurance systems, an assessment of the data reported by the facility, a summary of the findings, all corrections undertaken at the facility during verification, and aspects that can be improved to minimize the risk of future material findings.

PENALTIES AND ENFORCEMENT

Covered entities that fail to fulfill a compliance obligation must pay the unfulfilled amount with interest at a rate set out in the New Brunswick Regulation 84-247 under the "Revenue Administration Act" (currently ~0.76% per month compounded monthly or 9.5% per year). All revenue from interest payments goes into the New Brunswick Climate Change Fund.

If a compliance credit is retired and later found to be invalid, the covered entity must fulfill the compliance obligation within 60 days of receiving notice of the invalid credit.

Administrative penalties are laid out in the "Administrative Penalties Regulation Act" (New Brunswick Regulation 2021-44 under the Climate Change Act). Administrative penalties are set at CAD 1,000 (USD 715) for first time violations, CAD 5,000 (USD 3,577) for second time violations, and CAD 10,000 (USD 7,153) for third and subsequent violations.

MARKET REGULATION

MARKET DESIGN

MARKET PARTICIPATION: Compliance entities, including mandatorily and voluntarily covered entities (for inclusion thresholds see 'Sectors and Thresholds' section.)

MARKET TYPES:

Primary: Compliance units are currently not auctioned.

Secondary: Covered entities may purchase performance credits (compliance units) from other covered entities that have outperformed their compliance obligation. Transactions are conducted via a registry that is managed by the Minister of Environment and Climate Change.

MARKET STABILITY PROVISIONS

CLIMATE CHANGE FUND

Instrument type: Set price or set price trajectory (akin to a price ceiling)

Functioning: Covered entities can purchase and surrender credits from New Brunswick's Climate Change Fund to compensate for emissions exceeding performance limits. The price of the credits is aligned with the federal minimum carbon price (CAD 95, or USD 67.95, in 2025). The price increases by CAD 15 (USD 10.73) each year until 2030, resulting in a price of CAD 170 (USD 121.60[3]) per tCO_2e in 2030. A covered entity cannot obtain more fund credits than required to fulfill its compliance obligation for a compliance period. As such, fund credits cannot be banked.

OTHER INFORMATION

INSTITUTIONS INVOLVED

New Brunswick Department of Environment and Local Government: Responsible for reviewing and implementing the regulatory framework in New Brunswick. Manages the operation of the Climate Change Fund.

New Brunswick Minister of Finance and Treasury Board: Custodian of the Climate Change Fund.

EVALUATION/ETS REVIEW

The Minister of Environment and Climate Change will undertake the revision of New Brunswick's Climate Change Act every five years or at any shorter interval that the Minister considers appropriate.

REGULATORY FRAMEWORK

- → Climate Change Act
- → Reduction of Greenhouse Gas Emissions Regulation (Regulation 2021-43 under the Climate Change Act)
- → Administrative Penalties Regulation (Regulation 2021-44 under the Climate Change Act)
- → Reporting and Reduction of Greenhouse Gas Emissions Standard
- → Performance Credit Standard
- → New Brunswick Regulation 84-247 under the Revenue Administration Act
- → CCF Project Descriptions

3 USD conversion based on 2025 IMF exchange rate; actual future exchange rates may differ.

NEWFOUNDLAND AND LABRADOR

NEWFOUNDLAND AND LABRADOR PERFORMANCE STANDARDS SYSTEM

- Compliance based on emissions that exceed an allowable intensity per unit of output of each covered facility
- Opt-in possible for smaller emitters

ETS DESCRIPTION

Newfoundland and Labrador's Performance Standards System (PSS) came into effect in 2019. It is an intensity-based ETS for large industrial emitters, in which each covered entity must surrender compliance units for emissions that exceed each facility's annual emissions limit. Each facility's annual emissions limit is based on a combination of historical emission intensity, actual production activity data, and an annually decreasing reduction factor. Special provisions are in place for offshore petroleum facilities which must reduce emissions by an equivalent percentage in absolute terms (regardless of production). The system applies to the same sectors and GHGs as the federal system, and follows the same price trajectory, rising CAD 15 (USD 10.73) each year until 2030, resulting in a price of CAD 170 (USD 121.60[2]) per tCO_2e in 2030. The 2026 reporting year price is CAD 110 (USD 78.68).

The mandatory inclusion threshold is set lower than in the Canadian federal system, applying to facilities in covered sectors with emissions exceeding 25,000 tCO_2e/year and with a voluntary opt-in option for smaller emitters (emitting any amount greater than 15,000 tCO_2e/year).

YEAR IN REVIEW

In line with the federal OBPS pricing trajectory, the 2024 reporting year price was CAD 80 (USD 57.22) per tCO_2e and increased to CAD 95 (USD 67.95) per tCO_2e in reporting year 2025.

1 Coverage in the reporting year.
2 USD conversion based on 2025 IMF exchange rate; actual future exchange rates may differ.

In force
Under development
Under consideration

SECTORS

MINING AND EXTRACTIVES
POWER
INDUSTRY

CAP OR TOTAL EMISSIONS LIMIT

Intensity-based emissions limit
3.3 $MtCO_2e$ (2024)[1]

GREENHOUSE GASES

CO_2, CH_4, N_2O, SF_6, HFCs, PFCs

OFFSET CREDITS

Not allowed

ALLOCATION

Free Allocation: Output-based Benchmarking

AVERAGE 2025 PRICES

Set price: CAD 95 (USD 67.95) for reporting year 2025

TOTAL REVENUE

CAD 1.5 million (USD 1.1 million) since the beginning of the program
CAD 0.5 million (USD 0.4 million) reporting year 2024

EMISSIONS & TARGETS OF NEWFOUNDLAND AND LABRADOR

OVERALL GHG EMISSIONS (including indirect CO_2, excluding LULUCF), **2023**
(in $MtCO_2e$, share of total in %)

Energy	7.1	89%
Industrial processes	0.2	2%
Agriculture	0.1	1%
Waste	0.6	7%
Total	**7.9**	

Energy industries	2.3	29%
Manufacturing industries and construction	0.1	1%
Transport	3.8	47%
Commercial, institutional, and residential	0.5	7%
Other energy	0.4	5%

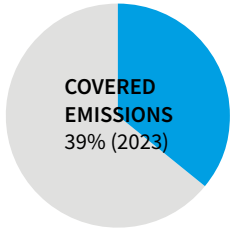
GHG REDUCTION TARGETS

By 2030: 30% below 2005 levels ("Climate Change Mitigation Action Plan 2025 to 2030")
By 2050: Net zero emissions (Climate Change Mitigation Action Plan 2025 to 2030)

ETS COVERAGE & PHASES

COVERED EMISSIONS 2023

ETS emissions: 3.1 $MtCO_2e$



PHASES

The Newfoundland and Labrador PSS is not divided into phases, but rather "reduction periods", each one lasting one year.

CAP OR TOTAL EMISSIONS LIMIT

The total emission limit under the Newfoundland and Labrador PSS changes as a function of production (output) and is the sum of the annual emissions limits based on emissions intensity benchmarks for all individual covered entities. The limit is therefore not set ex-ante and is only known after the compliance period ends. In 2023, this limit amounted to approximately 3.2 $MtCO_2e$.

SECTORS AND THRESHOLDS

SECTORS: Power, industry, mining and extractives

INCLUSION THRESHOLDS: Coverage is mandatory for facilities with emissions exceeding 25,000 tCO_2e/year. Smaller emitters (exceeding 15,000 tCO_2e/year) may also opt-in to the system.

POINT OF REGULATION

Point source (Mining and extractives, Power, Industry)

TYPE OF ENTITIES

Facilities: Onshore industrial facilities, offshore industrial facilities, and offshore mobile industrial facilities

NUMBER OF ENTITIES

15 facilities in the 2023 reporting year, of which 13 had a GHG reduction target.

ALLOWANCE ALLOCATION & REVENUE

ALLOWANCE ALLOCATION

Allocation is determined in relation to annual emissions limits based on emissions intensity benchmarks. For onshore industrial facilities, baseline emissions intensity is determined with reference to units of output (and can be determined by product if the facility produces more than one product). For mobile offshore industrial facilities, baseline emissions intensity is determined with reference to hours of operation. Offshore industrial facilities don't calculate baseline emissions intensity, but average baseline emissions levels.

The emissions limits are determined by comparing the baseline emissions intensity/baseline emissions to either: a) the annual GHG reduction targets set in the "Management of Greenhouse Gas Regulations", or b) against a performance benchmark also in accordance with the same Regulations. The latter option is only available for industrial facilities that are not mobile offshore. It is also not available for industrial facilities that requested their baselines to be calculated by product and sets the reduction target for that facility at the top tercile of all comparable facilities.

Entities that emit less than their limit receive credits, free of charge, corresponding to the number of tCO_2e below the limit. This is similar to free allocation based on benchmarks. These credits can be banked or sold to entities that exceed their emissions limits.

USE OF REVENUES


Climate mitigation


Assistance for individuals, households, and businesses

Fund deposits are used to support GHG reduction projects at industrial facilities in addition to reductions mandated by the PSS. Where money deposited into the fund remains unused after five years, the advisory council makes a recommendation to the minister regarding how it can be used to achieve a verifiable reduction in GHG emissions.

FLEXIBILITY & LINKING

BANKING AND BORROWING

Banking of performance-based credits (compliance units) for future compliance periods is allowed, but compliance units purchased from the GHG Reduction Fund must be used in the period in which they are issued.

Borrowing is not allowed.

OFFSET CREDITS

The use of offset credits is not allowed as a compliance option. There is provision in the Regulations to allow for offsets, but legislation has not been developed or passed pertaining to offset credits.

LINKS WITH OTHER SYSTEMS

The Newfoundland and Labrador PSS is not linked with any other system.

OTHER CARBON PRICING INSTRUMENTS IN THE JURISDICTION

None.

COMPLIANCE

COMPLIANCE MECHANISM

Covered entities must surrender one compliance unit (either a performance credit or a Greenhouse Gas Reduction Fund Credit) per tCO_2e that exceeds the facility's annual emissions limit.

COMPLIANCE PERIOD

One year.

MRV

FRAMEWORK: The rules for reporting GHG emissions are outlined in Newfoundland and Labrador's "Management of Greenhouse Gas Reporting Regulations" under the "Management of Greenhouse Gas Act".

MONITORING: Under the Management of Greenhouse Gas Act, industrial facilities that emit at least 15,000 tCO_2e per year are required to report their emissions on an annual basis.

REPORTING: GHG emissions reports must be submitted annually by June 1 of the year following a reporting period, and compliance reports are due by November 1 of the same year.

VERIFICATION: The owner or operator of a PSS-regulated facility must submit a verification statement and a verification report from an accredited verification body by September 1 of the year in which the report to be verified is required to be submitted. The verification body needs to be in compliance with ISO 14065, as it relates to verification teams, and verification reports and verification teams need to meet the requirements set out in ISO 14064-3. Each verification needs to be reviewed by an independent peer reviewer in accordance with ISO 14065.

PENALTIES AND ENFORCEMENT

Onshore facilities must achieve 20% of their compliance obligation through on-site GHG reductions or through submission of performance credits that they previously earned. If this portion of the compliance obligation is not fulfilled by the deadline, the covered entity must pay into the GHG Reduction Fund any remaining obligation at a rate of four times the federal carbon price in that year. Any remaining balance may be filled by earned or purchased performance credits and by Fund credit purchases.

The Management of Greenhouse Gas Administrative Penalty Regulations specify that an administrative penalty of between CAD 1,500 (USD 1,073) and CAD 7,500 (USD 5,365) may be applied, per day or part of a day, for contravening specific subsections of the Management of Greenhouse Gas Reporting Regulations, of the Opted-in Facilities Regulations, or of the Management of Greenhouse Gas Regulations. These concern deadlines to submit information required by these regulations.

MARKET REGULATION

MARKET DESIGN

MARKET PARTICIPATION: Compliance entities including mandatorily and voluntarily covered entities (for inclusion thresholds see 'Sectors and Thresholds' section).

MARKET TYPES:

Primary: Compliance units are currently not auctioned.

Secondary: Covered entities may purchase performance credits (compliance units) from other covered entities that have outperformed their compliance obligation. Transactions are conducted via a credit registry, that was established and is maintained by the Minister.

MARKET STABILITY PROVISIONS

GREENHOUSE GAS REDUCTION FUND

Instrument type: Set price or set price trajectory (akin to a price ceiling)

Functioning: Covered entities can purchase and surrender credits from Newfoundland and Labrador's Greenhouse Gas Reduction Fund to compensate for emissions exceeding performance limits. These (fund) credits cannot be banked, transferred, or refunded. The price ceiling is aligned with the federal minimum carbon price (CAD 95, USD 67.95, for reporting year 2025). The price ceiling increases by CAD 15 (USD 10.73) each year until 2030, resulting in a price of CAD 170 (USD 121.60[3]) per tCO_2e in 2030.

OTHER INFORMATION

INSTITUTIONS INVOLVED

Newfoundland and Labrador Department of Environment, Conservation and Climate Change: Agency responsible for administering and enforcing the regulatory framework in Newfoundland and Labrador. The Department works with the Canada-Newfoundland and Labrador Offshore Energy Regulator to apply the Act in the offshore area.

Newfoundland and Labrador Greenhouse Gas Reduction Fund Advisory Council: Group of five to seven expert members that assesses applications for payments and provides recommendations to the minister regarding payments from the fund.

EVALUATION/ETS REVIEW

The Minister (appointed under the "Executive Council Act") will conduct a review of Newfoundland and Labrador's Management of Greenhouse Gas Act and the regulations every five years and consider the areas which may be improved.

The "Management of Greenhouse Gas Act Legislative Review 2016 to 2022" assessed the emissions reductions achieved by the PSS. It estimates that "business as usual" emissions were consistently higher than the actual emissions of regulated entities, and that the direct, annual GHG emissions reductions between 2019 and 2022 by regulated entities were between 0.1 and 0.4 $MtCO_2e$ below the free allocation.

REGULATORY FRAMEWORK

- → Management of Greenhouse Gas Act
- → Management of Greenhouse Gas Regulations
- → Management of Greenhouse Gas Reporting Regulations
- → Management of Greenhouse Gas Administrative Penalty Regulations
- → Opted-in Facilities Regulations
- → Advisory Council Regulations

3 USD conversion based on 2025 IMF exchange rate; actual future exchange rates may differ.

NEW YORK STATE

NEW YORK'S CAP-AND-INVEST PROGRAM (NYCI)

- Governor Kathy Hochul committed in 2023 to implement an economy-wide cap-and-invest program
- Pre-proposal outline and climate affordability study include three components: Cap-and-Invest, GHG Reporting and Auction rules
- Aiming for a 40% emissions reduction by 2030 and 85% by 2050, below 1990 levels

ETS DESCRIPTION

New York's Cap-and-Invest Program (NYCI) is a comprehensive initiative aimed at reducing GHG emissions across the state's economy while maintaining economic stability and ensuring equitable investments. The program is anchored in the "Climate Leadership and Community Protection Act" of 2019, which requires a 40% reduction in GHG emissions by 2030, compared with 1990 levels, and at least an 85% reduction by 2050. The NYCI program will cover all emitting sectors under a statewide cap. The cap will decrease over time, with the caps for 2030 and 2050 corresponding to statewide GHG emission limits.

Various state agencies are developing the program rules, including the Department of Environmental Conservation (DEC) and the New York State Energy Research and Development Authority (NYSERDA). The pre-proposal outline, published in December 2023, describes the three main regulatory components:

- The "Mandatory Greenhouse Gas Reporting Program Rule" (GHG Reporting Rule), for the GHG emissions sources that will be required to be reported to DEC as well as the establishment of a GHG registry and reporting system.
- The "Cap-and-invest Rule", which will establish the program's compliance periods, and the cap's trajectory. The anticipated cap will incorporate both obligated and non-obligated GHG emissions sources. The rule will establish allowance budgets, compliance obligations and define stability provisions, including cost-containment mechanisms. The rule is also expected to address the treatment of emissions-intensive and trade-exposed (EITE) industries.
- The "Auction Rule" will describe the operation of allowance auctions. The rules will seek to maintain the integrity of the allowance market by preventing market manipulation and establishing cost containment and program stability mechanisms.

Covered sources under consideration are waste, industry, and fuel suppliers to the buildings and transportation sectors. Emission sources that are not anticipated to be subject to compliance obligations will be those from the agriculture and other land use change sectors, as well as fuel combustion from aviation and residential wood burning. Electricity sector obligations have not yet been determined, as sources in this sector are currently subject to the Regional Greenhouse Gas Initiative (RGGI). Source categories not subject to allowance compliance obligations, "non-obligated entities", would be monitored with the purpose of removing these GHG emissions from the statewide cap through the retirement of allowances. The allowance budget will reflect the statewide cap less adjustments for these non-obligated GHG emissions and other potential factors.

Allowances will mostly be allocated through auctioning. However, a direct allocation mechanism for qualifying sources in EITE industries is under consideration, to mitigate the risk of economic and/or carbon leakage. Allowance banking would be allowed, with the potential for some limitations in early compliance periods, and offset credits will have no role in the program.

In force

Under development

Under consideration

POWER

WASTE

INDUSTRY

FORESTRY

BUILDINGS

MARITIME

TRANSPORT

1 These sectors are included in the cap. Not all sectors carry a compliance obligation.

NYSERDA will design, implement, and administer allowance auctions. Auctions would be held at least quarterly, and proceeds would be used in accordance with the Climate Act and relevant laws, with a focus on addressing affordability and investing in emissions reduction strategies and clean energy. At least 30% of the revenues will be directed to a Consumer Climate Action Account to mitigate any increased energy prices for households. At least 35%, with a goal of 40%, of the revenues will be directed to investments that benefit disadvantaged communities. NYSERDA and DEC have developed a Climate Affordability Study to consider the best way to distribute the collected revenues from the Consumer Climate Action Account.

In March 2025, DEC released a draft mandatory GHG reporting program for data-collection purposes. The draft regulation was open for public consultation from 2 April until 1 July 2025. Final regulations were published in December 2025.

In October 2025, the New York Supreme Court issued a ruling reinforcing the state's obligations under the Climate Leadership and Community Protection Act (CLCPA), directing the DEC to issue emissions reduction regulations by 6 February 2026. In November 2025, the state filed an appeal to allow for further judicial review of the decision, which places the court's order on hold pending consideration by a higher court.

EMISSIONS & TARGETS OF NEW YORK STATE

OVERALL GHG EMISSIONS (including indirect CO_2, excluding LULUCF), 2023

(in $MtCO_2e$, share of total in %)

Energy	160	84%
Industrial processes and product use	11.9	6%
Agriculture, forestry, and other land use	9.0	5%
Waste	10.4	5%
Total	**191.2**	

Energy industries	26.1	14%
Manufacturing industries and construction	6.6	3%
Transport	69.0	36%
Commercial, institutional, and residential	52.7	28%
Other energy	5.6	3%

GHG REDUCTION TARGETS

By 2030: 40% GHG emissions reduction below 1990 levels (Climate Act)
By 2050: 85% GHG emissions reduction below 1990 levels (Climate Act)

FLEXIBILITY & LINKING

OTHER CARBON PRICING INSTRUMENTS IN THE JURISDICTION

ETS: RGGI

OTHER INFORMATION

INSTITUTIONS INVOLVED

Department of Environmental Conservation (DEC): Agency responsible for state programs designed to protect and enhance the environment; leads the development of regulations required to achieve the requirements of the Climate Act.
New York State Energy Research and Development Authority (NYSERDA): Public benefit corporation providing information and analysis, innovative programs, technical expertise, and support to increase energy efficiency, use renewable energy, and reduce reliance on fossil fuels in New York.

REGULATORY FRAMEWORK

→ **Final Scoping Plan**
→ **The Climate Leadership and Community Protection Act**

NOVA SCOTIA

NOVA SCOTIA OUTPUT-BASED PRICING SYSTEM FOR INDUSTRY

- Compliance based on emissions that exceed an allowable intensity of output of each covered facility
- Began operation in 2023, replacing Nova Scotia's cap-and-trade program
- Meets the Canada federal benchmark criteria

ETS DESCRIPTION

The Nova Scotia Output-Based Pricing System for Industry (Nova Scotia OBPS) is part of the province's approach to reducing GHG emissions from large industrial facilities. Similar to the federal carbon pricing system in Canada, it aims to lower emissions while maintaining economic competitiveness and minimizing carbon leakage.

The Nova Scotia OBPS was approved by the Canadian federal government in November 2022 and began operating in 2023. It replaced Nova Scotia's cap-and-trade program, which had been in place since 2019 but was officially phased out after the final compliance deadline in December 2023.

The Nova Scotia OBPS sets facility-level emissions-intensity standards (performance standards) for electricity generators and large industrial emitters. It is mandatory for facilities with annual emissions equal to or greater than 50,000 tCO_2e. Other facilities under this threshold with annual emissions of ≥10,000 tCO_2e have the option to voluntarily join the system. Prior to April 2025, facilities that did not join were subject to the Canada federal fuel charge. However, the federal government eliminated the consumer-facing federal fuel charge effective April 1, 2025, while maintaining industrial carbon pricing requirements through systems like the Nova Scotia OBPS.

Covered entities must surrender compliance units (performance credits or fund credits) for emissions that exceed the facility's annual emissions limit. The annual emissions limit is based on an emissions intensity benchmark. If a facility's emissions are below its limit, it earns performance credits, which can be banked for future use or sold.

YEAR IN REVIEW

In January 2025, Canada and Nova Scotia entered into an equivalency agreement regarding GHG emissions from electricity producers. The agreement recognizes Nova Scotia's Greenhouse Gas Emissions Regulations, which include mandatory emissions limits for the electricity sector from 2025 to 2029. Total emissions from the electricity sector in Nova Scotia should not exceed 6 $MtCO_2e$ in 2025, while for 2026 to 2029 emissions from the sector should be no greater than 21.5 $MtCO_2e$ cumulatively.

On April 1, 2025, the Canadian federal government removed the consumer-facing federal fuel charge. The federal government stated it would refocus carbon pollution pricing requirements on industrial emissions, maintaining systems like the Nova Scotia OBPS.

In force
Under development
Under consideration

SECTORS

MINING AND EXTRACTIVES

POWER

INDUSTRY

CAP OR TOTAL EMISSIONS LIMIT

Intensity-based emissions limit

GREENHOUSE GASES

CO_2, CH_4, N_2O, SF_6, NF_3, HFCs, PFCs

OFFSET CREDITS

Offset credits are not allowed

ALLOCATION

Free allocation: Output-based Benchmarking

AVERAGE 2025 PRICES

Average secondary market price: CAD 95 (USD 67.95)

TOTAL REVENUE

CAD 50.4 million (USD 36.3 million) since the beginning of the program

CAD 33 million (USD 23.6 million) collected in 2025[1]

1 2025 collections were for the 2024 compliance year.

EMISSIONS & TARGETS OF NOVA SCOTIA

OVERALL GHG EMISSIONS (including indirect CO_2, excluding LULUCF), **2023**
(in $MtCO_2e$, share of total in %)

Energy	12.1	90%
Industrial processes	0.5	3%
Agriculture	0.3	2%
Waste	0.6	4%
Total	**13.5**	

Energy industries	4.8	36%
Manufacturing industries and construction	0.3	2%
Transport	5.3	39%
Commercial, institutional, and residential	1.6	11%
Other energy	0.2	2%

GHG REDUCTION TARGETS

By 2030: 53% reduction below 2005 levels
By 2050: Net-zero emissions
Targets are legislated in the Environmental Goals and Climate Change Reduction Act

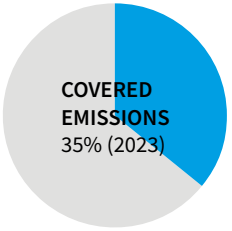
ETS COVERAGE & PHASES

COVERED EMISSIONS 2023

ETS emissions: 5.3 $MtCO_2e$

CAP OR TOTAL EMISSIONS LIMIT

The total emission limit under the Nova Scotia OBPS changes as a function of production (output) and is the sum of the bottom-up facility-level emissions limits for all individual covered entities. The bottom-up emissions limits do not represent an absolute cap.



In the 2024 compliance period (calendar year), the Nova Scotia OBPS regulated entities emitted a total of 5.5 $MtCO_2e$ and the total compliance obligation came to 550,000 tCO_2e.

SECTORS AND THRESHOLDS

SECTORS: Industry and power sector (electricity generation)

INCLUSION THRESHOLDS: Coverage is mandatory for facilities in the industrial and power sectors emitting more than or equal to 50,000 tCO_2e/year. Facilities under this threshold with annual emissions of more than or equal to 10,000 tCO_2e are permitted to opt-in to the Nova Scotia OBPS.

POINT OF REGULATION

Point source

TYPE OF ENTITIES

Facilities

NUMBER OF ENTITIES

15 (eight of which are voluntary participants) in 2024

ALLOWANCE ALLOCATION & REVENUE

ALLOWANCE ALLOCATION

Allocation is determined in relation to annual emissions limits based on facility-level emissions-intensity standards (performance standards) set by the Nova Scotia OBPS.

Emissions up to the benchmark do not require payment, with only the surplus triggering the compliance obligation. Entities that emit less than their limit receive performance credits (compliance units) free of charge, corresponding to the number of tonnes of CO_2e below the limit. This is similar to free allocation based on benchmarks. Performance credits can be banked and used towards future obligations or be sold to other regulated entities that emit more than their emissions limits.

USE OF REVENUES

- Climate mitigation, risk, adaptation & resilience
- Low-carbon innovation
- Sustainable community development

Revenues are directed to the Nova Scotia Climate Change Fund, which funds a variety of programs to reduce emissions, respond to climate impacts, and support a sustainable low-carbon transition.

FLEXIBILITY & LINKING

BANKING AND BORROWING
Banking is allowed. Borrowing is not allowed.

OFFSET CREDITS
While regulations contain some provisions for the potential use of offset credits, offset credits are currently not allowed in the system.

LINKS WITH OTHER SYSTEMS
The Nova Scotia OBPS is not linked with any other system.

OTHER CARBON PRICING INSTRUMENTS IN THE JURISDICTION
None

COMPLIANCE

COMPLIANCE MECHANISM
Covered entities must surrender one compliance unit (performance credit or fund credit) per tCO_2e that exceeds the facility's annual facility-level emissions-intensity standards set by the Nova Scotia OBPS. A facility can meet its compliance obligations by paying into the Nova Scotia Climate Change Fund to obtain fund credits or surrendering performance credits.

The price of the fund credits and of the performance credits follow the federal government's backstop carbon price, which is CAD 95 (USD 67.95) in 2025, and will increase by CAD 15 (USD 10.73) annually until it reaches CAD 170 (USD 121.60) per tonne in 2030.

COMPLIANCE PERIOD
One year. The first compliance period for a regulated facility is the first year in which the facility becomes subject to the regulations. Compliance reports, showing how facilities met their compliance obligations, are due at the start of December of the year following the reporting period.

MRV
FRAMEWORK: MRV for the Nova Scotia OBPS is governed by specific regulations:

- Output-Based Pricing System Reporting and Compliance Regulations set the compliance obligations, reporting requirements, and verification procedures;
- Output-Based Pricing System Registration and Opt-in Regulations govern facility registration and voluntary opt-in; and
- Greenhouse Gas Emissions Regulations establish the annual reporting requirement for all facilities.

Additionally, MRV methods and procedures are laid out in the "Standards for Quantification, Reporting and Verification of Greenhouse Gas Emissions", released by the Nova Scotia Department of Environment.

MONITORING: Continuous monitoring throughout the compliance period (calendar year) with an annual reporting cycle. No pre-approved monitoring plan is required - facilities must follow standardized quantification methods. MRV thresholds are the same as the OBPS coverage thresholds (see 'Sectors and Thresholds' section). All OBPS covered entities are subject to same MRV requirements.

Nova Scotia has broader MRV requirements beyond the OBPS covered entities. All facilities emitting at least 10,000 tCO_2e/year must report GHG emissions (in effect since 2009).

REPORTING: GHG emission reports must be submitted annually by June of the year following the reporting period.

VERIFICATION: Third-party verification is mandatory for all OBPS facilities in accordance with the regulations. Also, third-party verification is required for all facilities emitting 50,000 tCO_2e/year or more (even if not in the OBPS).

PENALTIES AND ENFORCEMENT
If a covered facility fails to submit the necessary compliance units, it must pay the amount of the obligation shortfall to the Government of Nova Scotia. Obligations that remain unpaid will be subject to an interest rate set out in the Nova Scotia "Revenue Act Regulations" made under the "Revenue Act".

MARKET REGULATION

MARKET DESIGN
MARKET PARTICIPATION:
Compliance entities including mandatory and voluntary covered entities (for inclusion thresholds see 'Sectors and Thresholds' section).

MARKET TYPES:
Primary: Compliance units are not auctioned.
Secondary: Covered entities may purchase performance credits from other covered entities that have outperformed their compliance obligation.

LEGAL STATUS OF ALLOWANCES:
Compliance units are regulatory instruments.

MARKET STABILITY PROVISIONS

NOVA SCOTIA CLIMATE CHANGE FUND

Instrument type: Set price or set price trajectory (akin to a price ceiling)

Functioning: To compensate for emissions exceeding the facility's annual emissions limit, facilities can obtain fund credits from the provincial government. The price of fund credits acts as a price ceiling and is aligned with the federal minimum carbon price (CAD 95 [USD 67.95] in 2025).

OTHER INFORMATION

INSTITUTIONS INVOLVED

Nova Scotia Environment and Climate Change: Responsible for establishing the regulatory framework, implementing the NS OBPS, and providing compliance and enforcement services for the NS OBPS.

EVALUATION/ETS REVIEW

A progress report must be published no later than one year following the end of the first compliance year of 2023 and thereafter annually.

REGULATORY FRAMEWORK

- → **Part XIB of the NS Environment Act**
- → **Output-Based Pricing System Reporting and Compliance Regulations**
- → **Output-Based Pricing System Reporting and Compliance Standard**
- → **Output-Based Pricing System Registration and Opt-in Regulations made under Section 112ZJ of the Environment Act**
- → **Annual progress report 2024**

ONTARIO

ONTARIO EMISSIONS PERFORMANCE STANDARDS PROGRAM

- Transitioned from federal OBPS in January 2022
- Compliance based on emissions that exceed an allowable intensity of output of each covered entity
- Opt-in option for smaller emitters

ETS DESCRIPTION

Ontario's Emissions Performance Standards (EPS) program came into effect in January 2022, replacing the federal output-based pricing system (OBPS) that was operational in the province from 2019 to 2021. It is an intensity-based ETS for large industrial emitters, in which each covered entity must surrender compliance units for emissions that exceed its annual limit. The annual emissions limit is based on facility-specific, sectoral, or historical emissions benchmarks, depending on the facility. The system applies to the same sectors and GHGs as the federal OBPS.

The cost of excess emissions units follows the path of the federal carbon pollution benchmark, with the price rising CAD 15 (USD 10.73) each year until 2030, resulting in a price of CAD 170 (USD 121.60[2]) per tCO_2e in 2030. The cost for 2026 compliance is CAD 110 (USD 78.68).

YEAR IN REVIEW

In August 2025, the "Greenhouse Gas Emissions Performance Standards Regulation" was amended to allow any facility that meets the criteria for voluntary participation at the time of the request to cancel its registration and leave the EPS program. The effective date of exit is set for the end of March 2025, applicable retroactively, if the request was made on or before December 31, 2025.

Corresponding changes were also made to the "EPS Methodology, Reporting Regulation", and the "Guideline for Quantification, Reporting and Verification of Greenhouse Gas Emissions" to allow for the calculation of verified emissions, production and emissions limits for the portion of the year between January 1 and the effective date of the cancellation of registration.

In force
Under development
Under consideration

SECTORS

MINING AND EXTRACTIVES

POWER

INDUSTRY

CAP OR TOTAL EMISSIONS LIMIT

Intensity-based emissions limit[1]

GREENHOUSE GASES

CO_2, CH_4, N_2O, SF_6, HFCs, PFCs, NF_3

OFFSET CREDITS

Not allowed

ALLOCATION

Free Allocation: Output-based Benchmarking

AVERAGE 2025 PRICES

Set price: CAD 95 (USD 67.95)

TOTAL REVENUE

CAD 406.7 million (USD 295.72 million) for the FY2024 and FY2025
CAD 260.5 million (USD 187.37 million) in FY2025

1 There is no overarching, province-wide emissions limit or cap. See 'Cap or total emissions limit' section for details.
2 USD conversion based on 2025 IMF exchange rate; actual future exchange rates may differ.

EMISSIONS OF ONTARIO

OVERALL GHG EMISSIONS (including indirect CO_2, excluding LULUCF), **2023**
(in $MtCO_2e$, share of total in %)

Energy	118.0	74%
Industrial processes	23.4	15%
Agriculture	10.0	6%
Waste	7.3	5%
Total	**159**	

Energy industries	13.4	8%
Manufacturing industries and construction	15.2	10%
Transport	55.9	35%
Commercial, institutional, and residential	29.5	19%
Other energy	4.0	3%

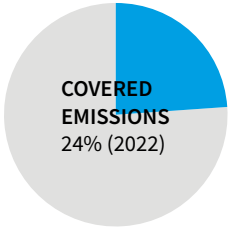
ETS COVERAGE & PHASES

COVERED EMISSIONS 2022

ETS emissions: 38.2 $MtCO_2e$

PHASES

The Ontario EPS is not divided into phases, but rather "reduction periods", each one lasting one year.



CAP OR TOTAL EMISSIONS LIMIT

The total emissions limit under the Ontario EPS changes as the production (output) levels of the regulated facilities and stringency factors are subject to changes.

The total annual emissions limit is the sum of the bottom-up output-based annual emissions limits based on facility-specific, sectoral, or historical emissions benchmarks for all individual covered entities. The limit is therefore not set ex-ante and is only known after the compliance period ends.

SECTORS AND THRESHOLDS

SECTORS: Industry and electricity generation

INCLUSION THRESHOLDS: Coverage is mandatory for facilities with emissions of at least 50,000 tCO_2e/year. Smaller emitters (with emissions of at least 10,000 tCO_2e/year) may also be covered by the system, on an opt-in basis.

POINT OF REGULATION

Point source (mining and extractives, power, industry)

TYPE OF ENTITIES

Facilities

NUMBER OF ENTITIES

191 active facilities, of which 149 have a compliance obligation (2022)

ALLOWANCE ALLOCATION & REVENUE

GENERATION OF EMISSIONS PERFORMANCE UNITS

The generation of emissions performance units (EPUs) is determined in relation to annual emissions limits based on emissions intensity benchmarks.

Entities that emit less than their emissions limit receive EPUs, free of charge, corresponding to how many tonnes of CO_2e they are below their annual limit. These EPUs can be banked for up to five years or sold to entities that emit more than their emissions limits (see section 'Compliance Mechanism').

USE OF REVENUES

Climate mitigation

Funds that are collected from EPS proceeds are tracked and managed in a designated purpose account. Funds in this account can only be used for the purposes established in the "Environmental Protection Act" (i.e., carrying out or supporting GHG reduction initiatives).

The primary use of proceeds from the EPS program (approximately CAD 407 million (USD 292.74 million) to the end of FY2025) will be climate mitigation by investing in GHG reduction projects at eligible industrial facilities and investments in clean electricity infrastructure.

In 2024, Ontario launched the Emissions Performance Program (EPP), which directs the proceeds collected for compliance under the EPS program to fund capital or study-based projects to reduce GHG emissions at eligible industrial facilities. Eligible facilities need to submit applications for

review by the ministry for eligible GHG reduction projects and be registered in the EPS, have purchased excess emissions units (EEUs), and not have electricity generation as their main industrial activity.

Examples of capital or study-based projects that are eligible include stationary equipment retrofits for energy efficiency and fuel switching, heat recovery, industrial process changes and carbon capture and storage.

In addition, as per Ontario's integrated energy plan, proceeds from electricity sector participants go to the Future Clean Electricity Fund (FCEF).

FLEXIBILITY & LINKING

BANKING AND BORROWING

Banking is allowed, but each EPU has an expiry date of December 15 in the year that is five years after the compliance period for which it is distributed.
Borrowing is not allowed.

OFFSET CREDITS

The use of offset credits is not allowed.

LINKS WITH OTHER SYSTEMS

The Ontario EPS is not linked with any other system.

OTHER CARBON PRICING INSTRUMENTS IN THE JURISDICTION

None

COMPLIANCE

COMPLIANCE MECHANISM

Covered entities can achieve compliance through either:

1. Reducing GHG emissions; or
2. Obtaining compliance units, which include:
   - EEUs: non-tradeable units purchased from the government of Ontario that must be used in the year in which they are purchased; and
   - EPUs: tradeable units that are distributed to facilities which emit below their limit. These are bankable for up to five years.

Since 2023, the Ontario EPS has been recognizing CO_2 emissions that are captured and stored permanently in certain CCS projects as emissions reductions.

Covered entities must have enough compliance units in their account to meet their compliance obligation (i.e., the amount of GHG emissions that exceed the facility's annual emissions limit) by December 15 of the year following the compliance period.

COMPLIANCE PERIOD

One year.

MRV

FRAMEWORK: The rules for reporting GHG emissions are outlined in Ontario's "Greenhouse Gas Emissions: Quantification, Reporting and Verification" regulation, and the incorporated reference document "Guideline for Quantification, Reporting and Verification of Greenhouse Gas Emissions".

MONITORING: According to the regulation, facilities required to monitor and report their emissions are those that: a) import electricity, b) emit at least 10,000 tCO_2e per year, or c) are registered, or required to register, under the EPS regulation.

REPORTING: GHG emissions reports, including an electricity importation report, must be submitted annually by June 1 of the year following the reporting period. Reporting must take place using Environment and Climate Change Canada's Single Window System.

VERIFICATION: The owner or operator of EPS-registered facilities must submit a verification statement and a verification report from an accredited verification body by September 1 of the year in which the report to be verified is required to be submitted. In verifying reports under the regulation, an accredited verification body must comply with the ISO 14065 and ISO 14064-3 standards.

PENALTIES AND ENFORCEMENT

If a covered entity does not meet its compliance obligation by December 15 of the year following the compliance period, the operator must ensure that additional compliance units are in their account equal to three times the amount of the compliance obligation shortfall by February 15 in the year that is two years after the compliance period.

MARKET REGULATION

MARKET DESIGN

MARKET PARTICIPATION: Compliance entities including mandatorily and voluntarily covered entities (for inclusion thresholds see 'Sectors and Thresholds' section.)

MARKET TYPES:

Primary: Compliance units are currently not auctioned. Facilities can purchase EEUs from the government to address any emissions in excess of their annual limits.

Secondary: Covered entities may purchase EPUs from other covered entities that have outperformed their emissions limit.

Transactions are reflected in a registry that is managed by the Director appointed by the Ontario Minister of the Environment, Conservation and Parks.

MARKET STABILITY PROVISIONS

EXCESS EMISSIONS UNITS

Instrument type: Set price or set price trajectory

Functioning: Covered entities can purchase and surrender EEUs at the fixed cost set out in the regulation, which is aligned with the federal minimum carbon price (CAD 110, USD 78.68 in 2026). The regulated price of EEUs acts as a price ceiling for EPUs. The price of EEUs increases by CAD 15 (USD 10.73) each year until 2030, resulting in a price of CAD 170 (USD 121.60) per tCO_2e in 2030.

OTHER INFORMATION

INSTITUTIONS INVOLVED

Ontario Ministry of the Environment, Conservation and Parks: Department responsible for administering and enforcing the regulatory framework in Ontario. The Director appointed by the Minister is in charge of the operation of the EPS program.

REGULATORY FRAMEWORK

- → **Environmental Protection Act**
- → **Emissions Performance Standards Regulation (O. Reg. 241/19)**
- → **Greenhouse Gas Emissions: Quantification, Reporting, and Verification (O. Reg. 390/18)**
- → **GHG Emissions Performance Standards and Methodology for the Determination of the Total Annual Emissions Limit, August 2025**
- → **Guideline for Quantification, Reporting and Verification of Greenhouse Gas Emissions, August 2025**

OREGON

CLIMATE PROTECTION PROGRAM (CPP)

- Designed to achieve a 50% GHG reduction by 2035 and 90% by 2050
- Covers emissions from the combustion of liquid fossil fuels, propane, and natural gas (excluding electricity and aviation)
- Took effect from January 2025 after a previous Climate Protection Program was invalidated

DESCRIPTION

The Climate Protection Program (CPP) was adopted by Oregon's Environmental Quality Commission (EQC) in November 2024, following a court ruling that invalidated a prior program. The first compliance period began in January 2025.

The CPP is Oregon's ETS designed to reduce GHG emissions by 50% below average 2017 to 2019 levels by 2035, and by 90% by 2050. Beyond GHG mitigation, the program aims to improve air quality; prioritizes equity by promoting benefits and reducing burdens for environmental justice communities including communities of color, tribal, low-income, and rural communities; enhances public health and welfare, particularly for environmental justice communities; and provides regulated companies with compliance flexibility options.

The program imposes a declining cap on emissions from covered entities. The cap is set top-down by the EQC, based on statewide emissions reduction targets aligned with Oregon's climate legislation. Covered entities must hold and surrender allowances or other eligible compliance instruments at the end of each compliance period equivalent to their verified emissions.

Each year, the Department of Environmental Quality (DEQ) issues a number of allowances (compliance instruments) corresponding to the cap, which decrease annually in line with the cap. These are distributed for free to covered entities based on sectoral characteristics and emission levels. The system also includes Community Climate Investment (CCI) credits, which covered entities can use to meet up to 15% of their compliance obligations in the first period and 20% thereafter.

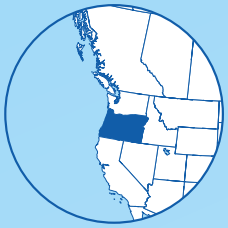
The CPP covers emissions from liquid fuel and propane suppliers, natural gas utilities (local distribution companies), emission-intensive, trade-exposed (EITE) industries, and direct-use natural gas (DNG) sources. EITE sources and DNG sources will have compliance obligations starting in the second compliance period (2028 to 2029).

A key distinguishing feature of the CPP is the use of CCI credits, which fund in-state emission reduction projects and are priced initially at USD 129 per credit, with a 4.5% fee for oversight. Additionally, the program includes safeguards to address potential cost impacts on consumers, with provisions for review in collaboration with the Public Utilities Commission.

YEAR IN REVIEW

In 2025, Oregon's CPP entered into force, marking the start of its first compliance period (2025 to 2027). The DEQ oversaw the program's operational launch, including the first distribution of compliance instruments to covered entities.

1 Emissions resulting from fuels used in petroleum and natural gas production are excluded.



In force
Under development
Under consideration

SECTORS

- MINING AND EXTRACTIVES[1]
- TRANSPORT
- INDUSTRY
- MARITIME
- BUILDINGS
- FUEL USE IN AGRICULTURE AND/OR FORESTRY

CAP OR TOTAL EMISSIONS LIMIT

Absolute cap
23.3 $MtCO_2e$ (2026)

GREENHOUSE GASES

CO_2, CH_4, N_2O, HFCs, PFCs, SF_6 NF_3

OFFSET CREDITS

State-sourced alternative compliance credits are allowed with quantitative limits

ALLOCATION

Free Allocation: Grandparenting

AVERAGE 2025 PRICES

Not available at this time

In addition to the 2025 annual distribution of compliance instruments, DEQ also distributed, for one time only, early reduction compliance instruments. These represented early emission reductions in the fuels market from 2022 to 2024 and helped smooth the transition to the new compliance framework. The agency also issued guidance on compliance obligations, reporting procedures, and market oversight to support regulated entities in meeting their requirements.

Throughout 2025, preparatory work began for a future rulemaking to define declining emissions-intensity benchmarks for EITE and DNG sources ahead of their entry into the program in 2028.

EMISSIONS & TARGETS OF OREGON

OVERALL GHG EMISSIONS (including indirect CO_2, excluding LULUCF), 2023

(in $MtCO_2e$, share of total in %)

Electricity use	17	29%
Natural gas use	8	13%
Agriculture	6	10%
Transport	20	34%
Other residential and commercial	4	7%
Other industrials	4	7%
Total	**59**	

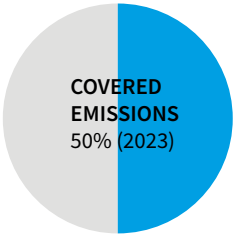
GHG REDUCTION TARGETS

By 2035: At least 45% below 1990 levels (Oregon legislature)
By 2040: 100% below baseline for electric utilities (Oregon legislature)
By 2050: 80% reduction below 1990 levels ("Executive Order 20-04")

ETS COVERAGE & PHASES

COVERED EMISSIONS 2023

ETS emissions: 29.9 $MtCO_2e$



PHASES

FIRST COMPLIANCE PERIOD: Three years (2025 to 2027)
SECOND COMPLIANCE PERIOD: Two years (2028 to 2029)
THIRD COMPLIANCE PERIOD: Two years (2030 to 2031)

CAP OR TOTAL EMISSIONS LIMIT

An absolute cap limits the total emissions allowed in the system and is fixed ex-ante. It is set to reduce carbon emissions from covered sources by 50% by 2035 and 90% by 2050, compared with the average of 2017 to 2019 covered emissions. By 2035, the cap will decline to 15.9 $MtCO_2e$, and by 2050, it will further drop to 3.2 $MtCO_2e$. DEQ will adjust the cap as it lowers the threshold for inclusion, bringing a greater portion of the emissions from covered sectors into the program.

A previous program started in 2022 with a cap of 28 $MtCO_2e$ covering fuel suppliers and was set to decline to 25.9 $MtCO_2e$ in 2024, before it was invalidated in December 2023. The current CPP rules adopted in 2024 include emissions from EITE sources under the cap, so an adjustment was made to account for those emissions.

FIRST COMPLIANCE PERIOD: 24.1 $MtCO_2e$ (2025)
SECOND COMPLIANCE PERIOD: 25.5 $MtCO_2e$ (2028)
THIRD COMPLIANCE PERIOD: 23.1 $MtCO_2e$ (2030)

SECTORS AND THRESHOLDS

SECTORS:

Natural gas utilities: These include companies that import, sell, or distribute natural gas, compressed natural gas, or liquefied natural gas to end users in Oregon. Covered emissions include those resulting from the combustion or oxidation of supplied natural gas, excluding emissions from electric power generation plants with a capacity of 25 MW or greater, emissions captured and stored, and emissions from biomass-derived fuels.

Suppliers of liquid fuels and propane: These include entities that produce, import, sell, or distribute gasoline, distillate fuel oil, and propane for use in Oregon. Covered emissions are those from the complete combustion or oxidation of these fuels, excluding emissions from aviation fuels, biomass-derived fuels, and fuels used in non-combustive processes.

EITE sources: A source is classified as EITE if it belongs to a sector listed under specific NAICS codes in the program rules (including chemicals and plastics, pulp and paper, food and agriculture, other industrial processes, high-tech manufacturing, and aerospace).

DNG sources: These include industrial sources that are not classified as an EITE source but that use natural gas supplied by an entity other than a natural gas utility.

INCLUSION THRESHOLDS:
Inclusion thresholds for fuel suppliers:
First Compliance Period:
Emissions of or greater than 100,000 tCO_2e in 2020 or any subsequent year.

Second Compliance Period:
Emissions of or greater than 50,000 tCO_2e in 2025 or any subsequent year.

Third Compliance Period:
Emissions of or greater than 25,000 tCO_2e in 2028 or any subsequent year.

Subsequent years:
If emissions meet or exceed 25,000 tCO_2e in any subsequent year, suppliers become covered in subsequent compliance periods.

Inclusion threshold for EITE and DNG facilities:
Covered if annual GHG emissions meet or exceed 15,000 tCO_2e from 2020 or any subsequent year. Covered emissions include those from the use of natural gas and solid fuels but exclude emissions from biomass-derived fuels, liquid fuels, propane, interstate natural gas pipeline facilities, and emissions from electric power plants with a generating capacity of 25 MW or more.

POINT OF REGULATION
Upstream: natural gas utilities and liquid fuels and propane suppliers (mining and extractives, industry, buildings, transport, waste, forestry, maritime, agriculture/forestry)

Point source: selected EITE industrial sources and DNG sources

TYPE OF ENTITIES
Installations (covered EITE sources and direct natural gas sources), fuel distributors

NUMBER OF ENTITIES
75 entities (2025)
Suppliers of liquid fuels and propane: 35
Natural gas utilities: 3
EITE and DNG sources: 37

ALLOWANCE ALLOCATION & REVENUE

ALLOWANCE ALLOCATION

DEQ generates compliance instruments in amounts equal to each annual emissions cap and distributes them for free to covered entities as follows:

Fuel suppliers:
First compliance period and beyond:
Natural gas utilities receive a fixed percentage of compliance instruments for each year under the cap. Each natural gas utility's share is adjusted slightly downward as the cap scope increases to reflect their lower share of overall historical emissions. After the first compliance period, before allocating compliance instruments to natural gas utilities, the total number of compliance instruments allocated to EITE and DNG sources is subtracted from the cap.

Suppliers of liquid fuels and propane receive compliance instruments proportionate to their share of total covered and biofuel emissions. The calculation follows the formula:

*Number of compliance instruments = (Total compliance instruments to distribute * ([Covered fuel supplier covered emissions + covered fuel supplier biofuel emissions] / Total emissions)) ± Verified emissions data correction factor – Compliance instrument holding limit reduction*

Allocations are subject to corrections if discrepancies arise in emissions reporting, using a "verified emissions data correction factor". In 2025 only, DEQ distributed a limited number of early action or early reduction compliance instruments for reductions achieved from 2022 to 2024.

A proportion of the compliance instruments are held in a reserve for liquid fuel suppliers that are new entrants to the market.

EITE and DNG sources:
First compliance period:
No allocation during the first compliance period. These sources also have no compliance obligations during this period.

Second compliance period and beyond:
DEQ intends to conduct a rulemaking process to determine carbon emissions intensity targets for EITE and DNG sources before the second compliance period. If DEQ is not able to establish carbon emissions intensity targets before the second compliance period, the allocation matches the average annual covered emissions from 2022 and 2023, multiplied by an emission reduction target. If historical data is unavailable, the most recent years' emissions data (up to 2021) are used.

Reduction targets for EITE sources decrease progressively over compliance periods, aiming to reduce emissions by 55% by 2050 from baseline levels. Specific targets include:
- Second compliance period: 1
- Third compliance period: 0.95
- Fourth compliance period (2032 to 2033): 0.90
- Thirteenth compliance period (2050 to 2051): 0.45

FLEXIBILITY & LINKING

BANKING AND BORROWING

Covered entities may bank compliance instruments indefinitely.
Borrowing is not allowed.

Covered fuel suppliers that are not natural gas utilities are subject to a holding limit. Each year after a compliance period ends, the compliance instrument holding limit reduction is calculated by DEQ. The holding limit equals the number of compliance instruments held from prior years that exceed 1.5 times the sum of the fuel supplier's annual covered and biofuel emissions for each year of the prior compliance period.

If a fuel supplier holds compliance instruments above their holding limit, their compliance instrument distribution in the following year will be reduced by the amount they are in exceedance. If the holding limit is exceeded by more compliance instruments than the covered fuel supplier would have received in the following distribution, the holding limit reduction can be carried over for a second year.

CCI credits may be used during the compliance period in which they are received or banked for one compliance period.

OFFSET CREDITS

Covered entities may cover a percentage of their compliance obligations with CCI credits, earned by contributing funds to DEQ-approved non-profit entities that implement community projects that reduce anthropogenic GHG emissions in Oregon. Investments are prioritized for projects that benefit environmental justice communities. Overall, the CCI program is responsible for reducing an average of 1 tCO_2e per credit awarded. The quantity of CCI credits used to meet compliance obligations must not exceed the allowable percentage specified below.

The contribution cost for CCI credits for 2025 is USD 129 per credit, in 2024 dollars. The contribution cost increases by one dollar (in 2024 dollars) each year with incremental annual increases based on inflation. Due to inflation adjustment, CCI credits for 2026 are USD 136.

To obtain CCI credits, covered entities must apply using DEQ-approved forms and provide detailed documentation. Applications for CCI credits must be submitted to DEQ by November 14 of the compliance year. DEQ will generate and distribute credits based on verified contributions from covered entities.

DEQ-approved CCI entities must be non-profit organizations, but subcontractors need not be. The Equity Advisory Committee helps to ensure the program generates equitable outcomes and benefits communities that are overburdened by pollution and climate change and have historically been marginalized (see 'Institutions Involved' section).

QUANTITATIVE LIMITS:
First compliance period: 15%
Second compliance period and beyond: 20%

QUALITATIVE LIMITS: A CCI entity may only use funds received by regulated entities to implement eligible projects in Oregon that reduce anthropogenic GHG emissions. CCI priorities include:

- providing compliance flexibility for covered entities;
- reducing emissions by an average of at least 1 tCO_2e per CCI credit;
- reducing emissions of other air contaminants;
- providing benefits for environmental justice communities in Oregon; and
- accelerating the transition from fossil fuels to zero or low emission energy sources to protect environmental justice communities

LINKS WITH OTHER SYSTEMS

The CPP is not linked with any other system.

OTHER CARBON PRICING INSTRUMENTS IN THE JURISDICTION

None

COMPLIANCE

COMPLIANCE MECHANISM

Covered entities must surrender one compliance instrument per tCO_2e emitted for all their covered emissions.

Covered entities may cover a percentage of their compliance obligations with CCI credits, earned by contributing funds to DEQ-approved non-profit entities that implement community projects that reduce anthropogenic GHG emissions in Oregon.

COMPLIANCE PERIOD

First compliance period: Three years.
Second and future compliance periods: Two years.

Covered entities must demonstrate compliance by December 9 of the year following the compliance period or 40 days after notification from DEQ, whichever is later (December 2028 for the first compliance period). Covered entities must demonstrate compliance for the total emissions by surrendering an equivalent number of compliance instruments and/or CCI credits, subject to the limits above, as their covered emissions. EITE and direct natural gas sources do not have compliance obligations for the first compliance period.

MRV

FRAMEWORK: Division 215 of the Program Rules (OAR 340-215) was adopted in 2020, and establishes GHG registering, monitoring and reporting requirements for stationary sources, fuel suppliers, natural gas suppliers, and electricity suppliers. All entities report annually under Oregon OAR 340-215. Reporting deadlines vary by entity: March 31, April 30, or June 1, depending on the type of supplier or sources.

Division 272 of the Oregon Administrative Rules was adopted in May 2020 to establish third party verification requirements for verification of data submitted to the Greenhouse Gas Reporting and Clean Fuels Programs.

MONITORING: Covered entities must retain records related to trades, CCI contributions, and demonstrations of compliance for a minimum of seven years following the submission date. This includes financial records and any additional data requested by DEQ.

REPORTING: Covered entities are subject to the detailed emission reporting requirements established by the state's GHG emissions reporting program. This emissions data is used to implement the CPP, including calculations of covered emissions and compliance obligations, and determining compliance instrument distribution.

Covered entities are required to provide certain information about compliance instrument trading, including but not limited to, the number of instruments traded, the agreed upon date of the trade(s), and the total price per compliance instrument. All trades must be reported to DEQ using the compliance instrument trade form provided.

VERIFICATION: Covered entities are subject to third-party verification of calculations of covered emissions, compliance obligations, and distribution of compliance instruments.

PENALTIES AND ENFORCEMENT

DEQ's enforcement provisions and civil penalties include significant penalties for failing to comply with the program. Civil penalty amounts are determined based on DEQ's general enforcement and civil penalty rules, with a base penalty of USD 12,000 per violation. This penalty amount may be modified based on the economic benefit from the violation and other aggravating and mitigating factors. Each tCO_2e of a compliance obligation not covered by a corresponding compliance instrument or CCI credit is considered a separate violation. In addition to failure to comply, covered entities can face financial penalties for providing untrue, inaccurate, or incomplete information when reporting, applying, or providing information to the DEQ under the CPP.

Covered entities also face penalties for failing to comply with the requirements for trading compliance instruments under the CPP, for operating covered facilities without a CPP permit, or for violating any requirement under the CPP.

MARKET REGULATION

MARKET DESIGN

MARKET PARTICIPATION: Only compliance entities may hold and trade allowances.

MARKET TYPES:

Primary: Compliance instruments are distributed for free by DEQ.

Secondary: Covered entities may only trade compliance instruments with other covered entities. Trading must be notified to DEQ, and both parties must sign and submit a compliance instrument trade form. CCI credits cannot be traded.

LEGAL STATUS OF ALLOWANCES:

A compliance instrument is a regulatory instrument and does not constitute personal property, a security, or any other form of property.

MARKET STABILITY PROVISIONS

RESERVE FOR NEW ENTRANTS

Instrument type: Quantity-based instrument

Functioning: DEQ establishes a reserve for covered liquid fuels and propane suppliers that are new to the program. DEQ will hold instruments in the reserve as a subset of compliance instruments under the cap. DEQ can only distribute the instruments in the reserve to covered suppliers of liquid fuels and propane.

A covered supplier of liquid fuels and propane may request a distribution from the reserve if it did not receive compliance instruments in the corresponding annual distribution due to a lack of information, or if it became a covered entity after DEQ had distributed the compliance instruments.

DEQ may also decide to distribute the instruments in the reserve as it adjusts the reserve size over time. DEQ can also choose to retire these instruments. DEQ will only distribute instruments if there are at least 10,000 compliance instruments above the applicable reserve size limit.

OTHER INFORMATION

INSTITUTIONS INVOLVED

Oregon Department of Environmental Quality (DEQ): Implementing state agency for the CPP.

Oregon Environmental Quality Commission (EQC): Panel appointed by the governor of Oregon to serve as DEQ's policy and rulemaking board. EQC adopted the CPP rules in 2024.

Equity Advisory Committee: Selected from across Oregon, the committee is a key partner for the program, particularly the Community Climate Investment credits playing an important role on what types of projects are supported by these investments and where they are located.

EVALUATION/ETS REVIEW

DEQ will report on alternative compliance credits with the first report by August 30, 2027, and a report every two years thereafter. Reports include credits distributed, estimates of GHG emissions reductions that are anticipated to be achieved by completed projects, estimates of other air pollutants anticipated to be achieved by completed projects, average anthropogenic GHG emissions reductions achieved per CCI credit distributed, and description of community benefits achieved due to investments.

DEQ will report to the EQC on the CPP's implementation, with the first report due in 2029 and at least once every five years thereafter. The review will provide a complete review of covered entities, compliance instrument distributions, trading, and demonstrations of compliance. DEQ will also provide annual updates to EQC starting in 2026.

DEQ tracks the average annual statewide retail cost of gasoline, diesel, and natural gas in Oregon, and if these prices increase year-over-year by an amount more than 20% higher than the average change in cost for the same fuel over the same period in Washington, Idaho, and Nevada, DEQ will investigate the cause(s) of the increase and report to the EQC regarding whether changes are needed to ameliorate a relative increase in costs in Oregon.

Lastly, DEQ will work closely with the Oregon Public Utilities Commission to request information on changes to customer rates for different classes of utility customers that may be attributed to compliance costs under the CPP. If significant rate increases are identified or projected, DEQ may recommend further adjustments to program caps, compliance instruments, or allowable CCI credit usage to mitigate these impacts.

REGULATORY FRAMEWORK

- → Division 215 – Oregon GHG Reporting Program
- → Division 272 – Oregon Third Party Verification
- → Division 273 – Oregon Climate Protection Program 2024 Rules
- → Division 12 – Enforcement Procedure and Civil Penalties

PENNSYLVANIA

- Officially joined RGGI in 2022 but ruled unconstitutional by Commonwealth Court
- November 2025 budget legislation formally ended RGGI participation
- Alternative state-level program under consideration

In force

Under development

Under consideration[1]

ETS DESCRIPTION

In April 2022, a regulation to establish an ETS in Pennsylvania and to participate in RGGI was published. Before its publication, the regulation faced legal challenges, and at the start of November 2023, the Commonwealth Court ruled the regulation unconstitutional, stating that RGGI-related revenues are a tax requiring legislative approval. The decision was appealed by Governor Josh Shapiro's administration.

Meanwhile, the legislature repealed Pennsylvania's RGGI Participation through incorporation into the state's fiscal code bill (House Bill 416) as part of the 2025 to 2026 budget, formally ending Pennsylvania's participation in RGGI.

However, legislation was first introduced in May 2024 to create a state-level cap-and-invest program for energy, known as the Pennsylvania Climate Emissions Reduction Act (PACER)(House Bill 2275). PACER directs the Department of Environmental Protection (DEP) to review the base CO_2 allowance budget (cap) which would be adopted separately after a period of public comment. The bill was reintroduced in April 2025 as House Bill 503 and Senate Bill 503.

Under the proposed program, fossil fuel-fired electricity generators with a nameplate capacity of 25 MW or more would be required to purchase allowances equal to their annual CO_2 emissions. DEP would review the base CO_2 allowance budget established in the 2022 RGGI regulation and recommend revisions within 120 days of enactment, after considering the effects on jobs, consumers, and the environment. Allowances would be sold through Pennsylvania-run auctions. Auction revenue would be distributed across four accounts: the Consumer Protection Account, providing direct on-bill rebates to electricity consumers administered by the Public Utility Commission; and the remaining split equally among the Pennsylvania Energy Transformation Account (for clean energy projects including carbon capture, hydrogen, solar, wind, battery storage, and geothermal), the Workforce Enhancement Fund (for workforce development and legacy energy site projects), and the Low-income Support Account (for reducing energy bills of low-income consumers).

SECTORS

POWER

GREENHOUSE GASES

CO_2

1 Regulation finalized but not applied, pending state Supreme Court decision on Governor Shapiro's appeal.

EMISSIONS & TARGETS OF PENNSYLVANIA

OVERALL GHG EMISSIONS (including indirect CO_2, excluding LULUCF), **2022**
(in $MtCO_2e$, share of total in %)

Electricity production	74.5	29%
Industrial	78.4	31%
Transportation	56.1	22%
Residential	20.4	8%
Commercial	12.2	5%
Agriculture	7.4	3%
Waste management	3.8	2%
Total	**252.8**	

GHG REDUCTION TARGETS

By 2025: 26% reduction below 2005 levels (“Executive Order 2019-1”)
By 2050: 80% reduction below 2005 levels (Executive Order 2019-1)

OTHER INFORMATION

INSTITUTIONS INVOLVED

Pennsylvania Department of Environmental Protection (DEP): Government agency that would be responsible for implementing and administering PACER, including developing the revised CO_2 budget and conducting Pennsylvania-run auctions of CO_2 allowances.
Environmental Quality Board (EQB): A 20-member independent board that adopts DEP's regulations. Under PACER, the EQB would promulgate the final base CO_2 budget.
Pennsylvania Public Utility Commission (PUC): Would administer on-bill rebates to electricity consumers, funded by a percentage of PACER auction proceeds.

REGULATORY FRAMEWORK

→ **CO_2 Budget Trading Program**
→ **House Bill 416 (2025)**
→ **House Bill 2275 (2024)**
→ **House Bill 503 (2025)**
→ **Senate Bill 503 (2025)**

QUÉBEC

QUÉBEC CAP-AND-TRADE SYSTEM

- Covers ~80% of Québec's overall GHG emissions
- Linked with California since 2014, ongoing discussions about potential linkage with Washington
- First and largest linked market between sub-national governments from different countries

ETS DESCRIPTION

Québec's Cap-and-Trade (C&T) System started in 2013 and covers ~80% of the province's GHG emissions.

The system covers fuel combustion emissions in the mining and extractives, power, buildings, transport, industrial, agriculture and forestry sectors, as well as industrial process emissions. Covered entities must surrender 'emission allowances'[2] for all their covered emissions, and allocation is based on auctions or free allocation. The cap is determined top-down by the government and set in law years before compliance obligations are realized.

Most emission units are auctioned, with a portion freely allocated to emissions-intensive, trade-exposed (EITE) sectors and to electricity producers with fixed-price sales contracts concluded before the announcement of the system. Québec also keeps an emission units reserve account to sell to entities that do not have enough allowances to cover their obligations. Covered entities can also cover a part of their GHG emissions by using offset credits.

Québec formally linked its system with California's in 2014.

YEAR IN REVIEW

In 2025, Québec's C&T system continued operating smoothly while the government outlined its vision for green economy in the rest of the decade and advanced regulatory reforms. In June, Québec published its "2025 to 2030 Implementation Plan for a Green Economy", with funding primarily from carbon market revenues. The revenues support initiatives including transportation electrification, energy efficiency programs, and clean technology development.

Québec's regulatory amendments to the C&T system progressed through 2025, following stakeholder consultations in 2023 and a market notice in October 2024. The draft regulation is expected to be published in winter 2025 to 2026, with likely enactment in spring/summer 2026.

The 2021 to 2023 compliance period results, released in December 2024, showed a 99.3% compliance rate among covered emitters.[3] Over the first four compliance periods (2013 to 2023), offset credits represented approximately 6% of total units surrendered.

The system held four joint quarterly auctions with California in 2025, generating CAD 1.1 billion (USD 0.8 billion) in revenues for Québec.

SECTORS

- MINING AND EXTRACTIVES
- TRANSPORT
- POWER
- BUILDINGS
- INDUSTRY
- FUEL USE IN AGRICULTURE AND/OR FORESTRY

CAP OR TOTAL EMISSIONS LIMIT

Absolute cap
49.1 $MtCO_2e$ (2026)

GREENHOUSE GASES

CO_2, CH_4, N_2O, HFCs, PFCs, SF_6, NF_3

OFFSET CREDITS

Domestic offset credits and offset credits issued by the State of California are allowed and fungible (interchangeable)

ALLOCATION

Free Allocation: Output-based Benchmarking
Auctioning

AVERAGE 2025 PRICES

Average auction settlement price: CAD 39.39 (USD 28.14)[1]
Weighted average of priced transactions of vintage 2025 allowances: CAD 48.61 (USD 35.24)

TOTAL REVENUE

CAD 10.97 billion (USD 7.85 billion) since beginning of program
CAD 1.11 billion (USD 0.79 billion in 2025)

1 "Current auction settlement price" in USD, weighted by the total number of government-owned and consignment current vintage allowances sold in the year for both California and Québec.
2 In Québec's Cap-and-Trade System, the term 'emissions allowance' includes emission units (i.e., the main compliance instrument that other systems typically refer to as 'allowances'), offset credits, early reduction credits and any other emission allowance determined by regulation, each being equal to one tonne of GHG expressed in CO_2 equivalents.
3 The only non-compliant emitter had filed for bankruptcy under the Bankruptcy and Insolvency Act.

EMISSIONS & TARGETS OF QUÉBEC

OVERALL GHG EMISSIONS (including indirect CO_2, excluding LULUCF), **2023**
(in $MtCO_2e$, share of total in %)

Energy	53.4	68.5%
Industrial processes	12.7	16.3%
Agriculture	7.7	9.9%
Waste	4.1	5.3%
Total	**78.0**	

Energy industries (public electricity and heat production)	0.4	0.5%
Manufacturing industries and construction (industrial combustion)	11.7	15%
Transport	34.9	44.8%
Commercial, institutional, and residential	6.2	7.9%
Other energy (fugitive emissions)	0.3	0.4%

GHG REDUCTION TARGETS

By 2035: 37.5% reduction from 1990 GHG levels ("Order in Council 62-2026")
By 2050: Carbon neutrality objective ("2030 Plan for a Green Economy")

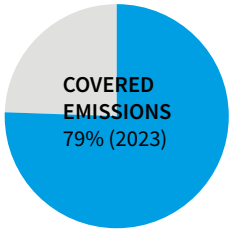
ETS COVERAGE & PHASES

COVERED EMISSIONS 2023

Verified ETS emissions: 61.8 $MtCO_2e$

PHASES

FIRST COMPLIANCE PERIOD: Two years (2013 to 2014)
SECOND COMPLIANCE PERIOD: Three years (2015 to 2017)
THIRD COMPLIANCE PERIOD: Three years (2018 to 2020)
FOURTH COMPLIANCE PERIOD: Three years (2021 to 2023)
FIFTH COMPLIANCE PERIOD: Three years (2024 to 2026)



CAP OR TOTAL EMISSIONS LIMIT

An absolute cap limits the total emissions allowed in the system and is fixed ex-ante.

FIRST COMPLIANCE PERIOD: The system started in 2013 with a cap of 23.2 $MtCO_2e$.

SECOND COMPLIANCE PERIOD: With the program expanding to include fuel distribution, the cap rose to 65.3 $MtCO_2e$ in 2015. The cap declined to 61 $MtCO_2e$ in 2017, at an average rate of 3.2% per year.

THIRD COMPLIANCE PERIOD: The cap started at 59 $MtCO_2e$ and declined at an average annual rate of 3.5% to reach 54.7 $MtCO_2e$ in 2020.

FOURTH COMPLIANCE PERIOD AND BEYOND: After a slight nominal increase in the cap in 2021, to 55.3 $MtCO_2e$, due to an adjustment of the global warming potential of different GHGs, the cap will be reduced annually by ~2.2% on average until 2030. This will result in a cap of 44.1 $MtCO_2e$ in 2030.

SECTORS AND THRESHOLDS

FIRST COMPLIANCE PERIOD: Producers and importers of electricity and industrial facilities.

SECOND COMPLIANCE PERIOD AND BEYOND: Sectors from the first compliance period as well as the distribution and importation of fuels used in the transport and building sectors and in small- and medium-sized businesses.

TYPES OF FUELS COVERED: Gasoline, diesel fuel, propane, butane, kerosene, coal coke, petroleum coke, coal, distillation gas, ethanol, biodiesel, biomethane, natural gas, and heating oil.

INCLUSION THRESHOLDS: Emissions equal to or greater than 25,000 tCO_2e per year. Fuel distributors that distribute more than 200L of fuel are included.

VOLUNTARY EMITTERS (OPT-IN COVERED ENTITIES): Since 2019, emitters from capped sectors that have reported emissions equal to or greater than 10,000 tCO_2e per year but less than 25,000 tCO_2e per year may voluntarily register with the C&T System as a covered entity. If their production activity is eligible, they may receive free allocation.

POINT OF REGULATION

Upstream (buildings, transport, fuel use in agriculture and/or forestry); point source (mining and extractives, industry, in-province power); imported electricity at the point of first delivery onto Québec's electricity grid.

TYPE OF ENTITIES

Industrial facilities, fuel distributors, and electricity importers

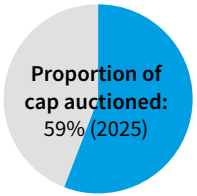
NUMBER OF ENTITIES

125 covered entities, representing 168 facilities (82 industrial facilities, 42 fuel distributors and 44 opt-in emitters) (2024)

ALLOWANCE ALLOCATION & REVENUE

ALLOWANCE ALLOCATION

Emission units are distributed via both auctions and free allocation by the government or can be directed to reserves for future sales.



FIRST TO THIRD COMPLIANCE PERIOD:

Free Allocation: EITE sectors received a portion of their emission units for free because they were considered vulnerable to carbon leakage. Eligible sectors included aluminum, lime, cement, chemical and petrochemicals, metallurgy, mining and pelletizing, pulp and paper, petroleum refining, and others such as manufacturers of glass containers, gypsum products, and some agro-food products. Electricity producers with a fixed-price sales contract signed before 2008 that did not allow carbon cost passthrough were also eligible to receive free units. Free allocation was also issued to compensate for the carbon cost already paid on electricity imported from a non-WCI jurisdiction (for example, RGGI).

In most cases, the volume of free allocation was determined by actual levels of production or consumption of raw materials (depending on the reference unit for the sector), a declining intensity target based on historical averages, depending on the type of emissions (e.g., fixed process, combustion, and other, mainly fugitive emissions), and an assistance factor. Until 2020, the assistance factors for all EITE sectors were set at 100%. If the available historical data was not sufficient, an energy-based methodology was used to determine the amount of free allocation issued.

Over the first three compliance periods, ~148 million emission units, representing ~36% of the cap for the period, were allocated for free.

Auctioning: Electricity and fuel distributors (included since 2015) were required to buy 100% of their allowances, with some narrow exceptions (e.g., on electricity contracts prior to 2008 that have not been renewed or extended). Emission units were auctioned quarterly. Units that remained unsold after an auction could be offered for sale again when the price at two consecutive auctions settled above the minimum price.

Over the first three compliance periods, ~256 million emission units, representing ~63% of the cap for the period, were auctioned or directed to reserves.

FOURTH COMPLIANCE PERIOD:

Free allocation: Assistance factors were determined based on trade exposure and emissions intensity. These metrics grouped the industrial sector's carbon leakage risk into three categories ("low", "medium", and "high"), with assistance factors of 90%, 95%, and 100% respectively. An assistance factor of 60% applied to steam production for industrial purposes and off-site electricity producers with the fixed-price sales contracts signed before 2008. For 2021 to 2023, ~59 million emission units, representing ~36% of the cap for the period, were allocated for free.

Auctioning: The same auctioning provisions as in the first three periods were used. For 2021 to 2023, ~96.6 million emission units, representing ~60% of the annual caps, were allocated by auction or directed to reserves.

2024 ONWARD:

Free allocation: New rules adopted in September 2022 introduced a more significant decrease in the level of free allocation from 2024. The rate of reduction is determined by the following factors: i) minimal expected effort of at least one percentage point (pp); ii) the cap decline factor of 2.3 pp; iii) an extra expected effort of 0 to 1.4 pp based on the carbon leakage risk; iv) whether the proportion of fixed process emissions exceeds 50% of total emissions in which case the extra effort expected is reduced by 0.3 pp; and v) a trajectory modulation factor, which reduces the rate of reduction in the initial years and increase it in the later ones, with no net effect over the 2024 to 2030 period.

A portion of the emission units resulting from the reduction in the level of free allocation are consigned for auction on behalf of emitters. The proceeds from the auctioning of the consigned units are set aside on behalf of each business to finance projects related to climate transition. The intensity targets for 2024 to 2030 are determined based on the intensity targets set for 2023 as well as the emission levels observed between 2017 and 2019.

Auctioning: The same auctioning provisions apply from the first four periods. For 2025, ~30.7 million emission units, representing ~61% of the 2025 annual cap, were allocated by auction (including consigned units) or directed to reserves.

USE OF REVENUES

Climate mitigation

All auction revenues go to the Electrification and Climate Change Fund. This fund, entirely dedicated to climate action, supports the implementation of mitigation and adaptation measures contained in the 2030 Plan for a Green Economy and includes energy efficiency, electrification, and public transport. Since the beginning of the program, more than CAD 10.97 billion (USD 7.85 billion) has been raised.

FLEXIBILITY & LINKING

BANKING AND BORROWING

Banking is allowed, but the emitter is subject to a general holding limit on emission units to which all entities in the system are held. The holding limit decreases in line with the annual emission unit budget.

Borrowing is not allowed. However, some emission units from future vintages are offered at each auction and can be traded but not used for compliance until the compliance date for the respective vintage year.

OFFSET CREDITS

The use of offset credits is allowed.

QUALITATIVE CRITERIA: Offset credits generated from eligible projects in the province are fungible in the Québec-California linked carbon market. A new regulatory framework based on ministerial regulations, which came into force in July 2021, will gradually replace the previous system of offset protocols. The ministerial regulations allow the following offset project types:

- reclamation and destruction of methane from landfill sites;
- destruction of halocarbons;
- carbon sequestration through afforestation or reforestation on private lands; and
- anaerobic digestion of manure.

For a transitionary period, the following project types will remain eligible under three protocols:

- destruction of methane from covered manure storage facilities;
- destruction of methane from drainage systems at active coal mines; and
- destruction of methane from ventilation systems of active underground coal mines.

Other types of projects under consideration include fuel substitution in the marine transport sector, improvements in the application practices of agricultural fertilizers, and afforestation or reforestation on public lands.

Québec offset credits are 100% guaranteed. This means that in cases where offset credits issued for a project are later deemed illegitimate by the regulator, the offset promoter (i. e., project owner) is required to replace them. If credit recovery is not possible, an equivalent number of offset credits is retired from the government's environmental integrity account. This account is funded by the automatic withholding of 3% of offset credits issued from all offset projects.

QUANTITATIVE LIMITS: Offset credits can be used for up to 8% of each entity's compliance obligation.

Over the first four compliance periods (2013 to 2023), more than 33 million offset credits were surrendered by entities in Québec, representing around 6% of the total compliance obligation. 96% of these surrendered credits were issued in California.

In the fourth compliance period (2020 to 2023), 13.6 million offset credits were surrendered by Québec-based entities, with 72% (9.9 million) from US forest projects, 21% (2.9 million) from mine methane capture projects, 3% (433,353) from livestock manure digester projects, 2% (280,759) from landfill methane destruction projects, and 1% (189,115) from ozone-depleting substances projects.

LINKS WITH OTHER SYSTEMS

Québec linked its system with California's in January 2014. The two extended their joint market by linking with Ontario in January 2018 until the termination of Ontario's system in mid-2018. In March and September 2024, joint statements from the governments of Québec, California, and Washington have affirmed their commitment to explore potential linkage.

OTHER CARBON PRICING INSTRUMENTS IN THE JURISDICTION

None

COMPLIANCE

COMPLIANCE MECHANISM

Covered entities must surrender one compliance unit (emission unit, offset credit, early reduction credit) per tCO_2e emitted for all their verified and reported emissions.

COMPLIANCE PERIOD

Three years.

The Québec C&T System is structured around three-year compliance periods, except for the first period (see 'ETS Size & Phases' section). A cap trajectory until 2030 has been set (see 'Cap' section). Allowances must be surrendered by November following the end of a compliance period.

MRV

FRAMEWORK: Regulation respecting mandatory reporting of certain emissions of contaminants into the atmosphere is enacted under the "Environment Quality Act (Q-2)" and set out in Q-2, r. 15.

MONITORING: Québec's "Regulation respecting mandatory reporting of certain emissions of contaminants into the atmosphere" (Q-2, r. 15) sets out calculation and reporting methods but does not require operators to submit a formal monitoring plan to the ministry.

The MRV regulations establish the following thresholds:

- 10,000 tCO_2e: Mandatory GHG reporting for any establishment emitting ≥10,000 tCO_2e. Third-party verification applies only where the reporter is an ETS emitter as defined in sections 2 or 2.1 of the cap-and-trade regulation (Q-2, r. 46.1), as referenced in section 6.6 of Q-2, r. 15 (i.e., industrial ETS installations and opt-ins as well as fuel distributors or electricity importers).
- ETS coverage is defined in Québec's cap-and-trade regulation, the "Règlement concernant le système de plafonnement et d'échange de droits d'émission de gaz à effet de serre (RSPEDE; CQLR c. Q-2, r. 46.1)" by categories (e.g., covered facilities, fuel distributors, electricity importers) and associated thresholds, including a distribution threshold of 200 liters or more of fuel (protocol QC.30) for fuel distributors.

MRV obligations in non-ETS sectors:

- All establishments emitting ≥10,000 tCO_2e are subject to mandatory GHG reporting; certain activities (electricity imports/exports, natural gas distribution, fuel distribution) are reported at enterprise level as specified in section 6.1 of Q-2, r. 15.

The MRV regulation came into force in 2007. Verification became mandatory in 2012 for industrial emitters and in 2014 for fuel distributors

REPORTING: Annual. Reporting deadline: June 1 each year for emissions from the preceding calendar year (sections 4, 5 and 6.2 of Q-2, r. 15).

VERIFICATION: Emitters referred to in section 6.6 of Q-2, r. 15, i.e., ETS facilities as defined in sections 2 or 2.1 of Québec's cap-and-trade regulation (RSPEDE; Q-2, r. 46.1), must obtain independent verification of their annual GHG reports by a third-party organization accredited to ISO 14065, by a member of the International Accreditation Forum and in compliance with an ISO-17011 program; specified emissions types are exempt from verification (section 6.6, second paragraph). The verification report is due no later than June 1 each year for emissions from the preceding calendar year (section 6.6; ministry guidance).

PENALTIES AND ENFORCEMENT

A covered entity that fails to cover its GHG emissions with enough allowances by the compliance deadline must remit each missing allowance plus three additional allowances for each allowance it failed to surrender.

For non-compliance, entities can be imposed an administrative sanction of CAD 10,000 (USD 7153) and can be fined CAD 3,000 to CAD 600,000 (USD 2,145 to USD 429,180) for each tCO_2e not covered.

In addition, the Minister of the Environment, the Fight against Climate Change, Wildlife, and Parks may suspend emission unit allocation to any non-compliant emitter.

MARKET REGULATION

MARKET DESIGN

MARKET PARTICIPATION: Compliance entities, including entities that opt into the system ("emitters"). Non-compliance entities with an establishment in Canada and individuals domiciled in Canada ("participants") can participate through:

- purchasing, holding, selling, or retiring compliance instruments;
- operating an offset project registered with the Ministry; or
- providing clearing services as qualified entities.

Emitters and participants must have an account in the Compliance Instrument Tracking System Service (CITSS). Additional eligibility criteria apply.

MARKET TYPES:

Primary: The majority of allowances are distributed via auctioning. Four auctions of emission units, held jointly with California, take place each year. Participants must have an approved account in CITSS and apply to take part in auctions at least 30 days in advance. Auctions are administered by the Western Climate Initiative, Inc.

Secondary: Exchange trading of allowances (emission units and offsets) issued by both California and Québec takes place on platforms such as the Intercontinental Exchange (ICE), the CME group, and the Nodal Exchange. Allowances are traded as futures and options contracts. Any company qualified to access these platforms can trade directly or through a future commission merchant. Companies can also trade directly over the counter. All transactions must be notified to the ministry, with information such as the quantity and vintage of allowances and the settlement price. The only exception to the notification requirement relates to transactions between related entities and bundled transfers as specified in Section 25 of the Regulation.

LEGAL STATUS OF ALLOWANCES: Under the Environmental Quality Act, emission allowances include emission units, offset credits, early reduction credits and any other emission allowance determined by regulation of the Government, each being equal to 1 tCO_2e. They can be used to comply with the pertinent regulation. They do not constitute financial instruments in Québec.

MARKET STABILITY PROVISIONS

AUCTION RESERVE PRICE

Instrument type: Price-based instrument

Functioning: The auction reserve price is set at CAD 26.47 and USD 27.94 per allowance in 2026.

The auction reserve price in each auction is determined using the minimum prices set and released annually by Québec in CAD and California in USD in accordance with Article 49 of the "Regulation respecting a cap-and-trade system for greenhouse gas emission allowances"

(Québec Regulation) and Section 95911 of California's cap-and-trade regulation. To manage multiple currencies, an Auction Exchange Rate is determined prior to each joint auction. The Auction Reserve Price in each auction is then determined as the higher of the Annual Auction Reserve Prices established in USD and CAD after applying the established Auction Exchange Rate (USD to CAD FX Rate). The auction reserve price increases annually by 5% plus inflation, as measured by the Consumer Price Index.

RESERVE ACCOUNT

Instrument type: Price-based instrument

Functioning: Québec maintains an emission unit reserve to sell to entities that do not have enough allowances to cover their obligations ("sales by mutual agreement"). The reserve is filled with set portions of the annual caps: 1% for 2013 to 2014; 4% for 2015 to 2017; 7% for 2018 to 2020, and 4% for 2021 to 2030.

Sales by mutual agreement are held a maximum of four times per year at three price categories that contain an equal share of emission units. Only covered entities in Québec are eligible to purchase units from the reserve, and only if they do not have enough compliance instruments that can be used to cover emissions for the current period in their general account. To date, no such sales have been held.

For 2026, the prices of the three tiers are CAD 63.12 (USD 45.15), CAD 81.09 (USD 58.00), and CAD 99.10 (USD 70.89). However, if partner entities have set higher prices per unit for a corresponding category, Québec units would be sold at the highest of the prices of both jurisdictions according to the daily average exchange rate of the Bank of Canada published on its website on the day preceding the sale. Unlike California, the highest tier will not act as a price ceiling for Québec. Just like auction reserve prices, reserve prices increase annually by 5% plus inflation.

OTHER INFORMATION

INSTITUTIONS INVOLVED

Ministère de l'Environnement, de la Lutte contre les changements climatiques, de la Faune et des Parcs (Ministry of the Environment, the Fight against Climate Change, Wildlife and Parks): Overall responsibility for implementing the Cap-and-Trade System in Québec.

Western Climate Initiative, Inc.: Non-profit organization that provides cost-effective administrative and technical solutions for supporting the coordinated development and implementation of participating jurisdictions' GHG emissions trading programs, such as administering auctions and maintaining the system registry.

EVALUATION/ETS REVIEW

The regulation is adjusted almost annually to implement changes and, where necessary, maintain harmonization with linked jurisdictions.

REGULATORY FRAMEWORK

- → **Regulation respecting a cap-and-trade system for greenhouse gas emission allowances**
- → **Regulation respecting mandatory reporting of certain emissions of contaminants into the atmosphere**
- → **Environment Quality Act**

REGIONAL GREENHOUSE GAS INITIATIVE

- First mandatory GHG ETS in the United States
- Covers emissions from power production in ten US states
- 2025 Rule alters cap, cost containment reserve, minimum price, and offsets allowance from 2027

ETS DESCRIPTION

The Regional Greenhouse Gas Initiative (RGGI) launched in 2009 and is the first mandatory GHG ETS in the United States. It started operating with ten states (Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Rhode Island, and Vermont). RGGI's development was based on the "2005 RGGI Memorandum of Understanding" (MOU) and on the "2006 RGGI Model Rule". Through statutes or regulations based on the Model Rule, each state then established individual CO_2 budget trading programs. New Jersey withdrew from RGGI at the end of the first phase, or "control period" (see 'Compliance' section), in December 2011 and later rejoined in 2020. Pennsylvania formally joined RGGI in 2022 but was prevented from participating in auctions or enforcing compliance due to court injunctions, and it formally withdrew in 2025. Virginia joined RGGI in 2021 but left in 2023. In February 2026, Governor Abigail Spanberger signed a budget bill (House Bill 29) requiring the Virginia Department of Environmental Quality (DEQ) to file regulations to rejoin RGGI within 90 days.

RGGI covers power sector emissions in participating states. In 2022, it covered around 14% of the aggregate participating states' emissions; in 2024, 222 facilities were covered by the state regulations. The aggregate cap will decrease by about 8.5 million tons per year between 2027 and 2033, which is about 10.5% of the 2025 budget. It will decline by about 2.4 million tons per year from 2034 to 2037, which is about 3% of the 2025 budget.

Under the ETS, covered entities must surrender allowances for all their covered emissions. Entities obtain most of their allowances through regular auctions, while some states have "set-aside" accounts from which they may transfer a limited number of allowances to entities' compliance accounts.

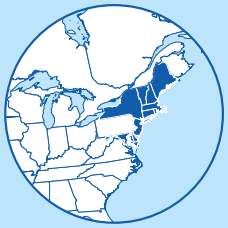
RGGI has undergone three review processes that updated the Model Rule and enshrined tighter caps and adjustments to system design.

YEAR IN REVIEW

In July 2025, the ten participating RGGI states released the results of the Third Program Review, which had been initiated in summer 2021. The review introduced a package of reforms to take effect from 2027, including a tightened emissions cap (reduced to about 69.8 million short tons CO_2 in 2027, declining by an average of about 8.5 million short tons CO_2 annually from 2027 to 2033, and by about 2.4 million short tons annually from 2034 to 2037), an expanded two-tier cost containment reserve (CCR) of about 11.75 million allowances per tier with trigger prices of USD 19.50 and USD 29.25 respectively in 2027, an increased minimum reserve price (rising to USD 9.00 in 2027 with 7% annual increases thereafter), and a phase-out of new offset credits from 2027 onwards. Each participating state has committed to amend its regulations to meet the updated Model Rule requirements by January 2027.

Virginia repealed its CO_2 Budget Trading Program following executive action started by the state's administration in 2022 and thus stopped participating in RGGI in December 2023. However, in February 2026, Governor Abigail Spanberger signed House Bill 29 mandating the implementation of regulations to rejoin within 90 days.

1 These values do not include Pennsylvania nor Virginia.
2 Offset issuance will cease in 2027.



SECTORS

POWER

CAP OR TOTAL EMISSIONS LIMIT

Absolute cap
67 million short tons CO_2 or 60 $MtCO_2$ (2025)[1]

GREENHOUSE GASES

CO_2

OFFSET CREDITS

Domestic offsets (within RGGI states only) are allowed with quantitative limits.[2]

ALLOCATION

Auctioning

AVERAGE 2025 PRICES

Average auction price: USD 24.04
Average secondary market price: USD 24.65

TOTAL REVENUE

USD 10.1 billion since the beginning of the program
USD 1.5 billion in 2025

MEMBER STATES

Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Rhode Island, Vermont

In November 2025, Pennsylvania formally ended its participation in RGGI following the passing of its fiscal code bill (House Bill 416) which included the repeal. Governor Josh Shapiro signed it into law but has called on the State Legislature to advance his energy plan, which would create Pennsylvania's own state-level program.

EMISSIONS & TARGETS OF RGGI

OVERALL GHG EMISSIONS (including indirect CO_2, excluding LULUCF), **2022**[4]

(in $MtCO_2e$, share of total in %)

Energy	597.7	83%
Industrial processes	44.9	6%
Agriculture	54.1	8%
Waste	20.9	3%
Total	**717.7**	

Energy industries	119.8	17%
Manufacturing industries and construction	48.0	7%
Transport	260.3	36%
Commercial, institutional, and residential	150.7	21%
Other energy	18.9	3%

GHG REDUCTION TARGETS

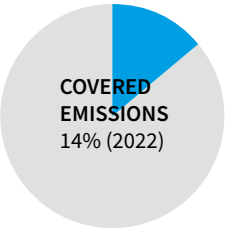
By 2037: : Regional power sector emissions cap reduced to just under 10 million short tons CO_2, representing a 60% to 87% reduction[5] compared to the 2025 cap (depending on cost containment reserve activation) ("2025 Model Rule")

Note: Participating states have their own emission targets; economy-wide targets are not defined at the level of RGGI.

ETS COVERAGE & PHASES

COVERED EMISSIONS 2022

Verified ETS emissions: 98.1 $MtCO_2$[5]



PHASES

PHASE 1: Three years (2009 to 2011)
PHASE 2: Three years (2012 to 2014)
PHASE 3: Three years (2015 to 2017)
PHASE 4: Three years (2018 to 2020)
PHASE 5: Three years (2021 to 2023)
PHASE 6: Three years (2024 to 2026)

CAP OR TOTAL EMISSIONS LIMIT

An absolute cap limits the total emissions allowed in the system and is fixed ex-ante.
A cap trajectory until 2030 has been set.

Phases in RGGI are also known as "control periods".

PHASE 1: 564 million short tons CO_2 or 512 $MtCO_2$ (188 million short tons CO_2 or 171 $MtCO_2$ per year)

PHASE 2: 413 million short tons CO_2 or 374 $MtCO_2$
2012 and 2013: 165 million short tons CO_2 or 150 $MtCO_2$ per year
2014: 83 million short tons CO_2 or 75 $MtCO_2$

PHASE 3: 194 million short tons CO_2 or 176 $MtCO_2$
2015: 67 million short tons CO_2 or 61 $MtCO_2$
2016: 65 million short tons CO_2 or 59 $MtCO_2$
2017: 62 million short tons CO_2 or 57 $MtCO_2$

PHASE 4: 193 million short tons CO_2 or 175 $MtCO_2$
2018: 60 million short tons CO_2 or 55 $MtCO_2$
2019: 58 million short tons CO_2 or 53 $MtCO_2$
2020: 74 million short tons CO_2 or 67 $MtCO_2$

3 This value includes Virginia but not Pennsylvania. Values presented here are taken from the "Inventory of U.S. Greenhouse Gas Emissions and Sinks by State" by the Environmental Protection Agency (EPA, available here), aggregated for the RGGI states. While each state publishes official inventory data and the values published by the EPA should not be viewed as official state data, the EPA estimates are presented here to ensure the methodological consistency of data collection and aggregation for inventory categories across RGGI states, as well as to ensure a common reporting year in the data. There may be differences between the EPA estimates and the official state inventories.
4 The range in this reduction is dependent on if one or both tiers of the CCR were to be released.
5 This value includes Virginia but not Pennsylvania.

PHASE 5: 291 million short tons CO_2 or 264 $MtCO_2$
2021: 101 million short tons CO_2 or 91 $MtCO_2$
2022: 97 million short tons CO_2 or 88 $MtCO_2$
2023: 93 million short tons CO_2 or 85 $MtCO_2$

PHASE 6:[6]
2024: 69 million short tons CO_2 or 63 $MtCO_2$

By 2012, verified emissions under RGGI were more than 40% below the cap, so the states tightened the cap in 2014. There was a 2.5% annual reduction factor from 2015 through 2018. The revised regulations extended the 2.5% annual reduction factor through 2020.

The RGGI states further adjusted the caps between 2014 and 2020 to account for banked allowances from the first and second phases. The annual reduction factor between 2021 and 2030 as set out in the "2017 Model Rule" is ~3% of the 2020 cap.

The caps above include New Jersey from 2020 and Virginia from 2021, but the latter only until 2023.

The cap will decline by about 8.5 million tons per year between 2027 and 2033, and about 2.4 million tons per year between 2034 and 2037.

SECTORS AND THRESHOLDS

SECTORS: Fossil fuel electric generating units (i. e., fossil fuel-fired stationary boilers, combustion turbines, or combined cycle systems). Sources include governmental, institutional, commercial, or industrial structures, installations, plants, buildings, or facilities that emit or have the potential to emit any air pollutant that include one or more units.

INCLUSION THRESHOLDS: Most RGGI states cover units with capacity equal to or greater than 25 MW.

In New York, since January 2021, the program applies to power plants that have nameplate capacity equal to or above 15 MW and reside at a covered generating unit or near two or more units of the same source.

POINT OF REGULATION

Point source (power sector)

TYPE OF ENTITIES

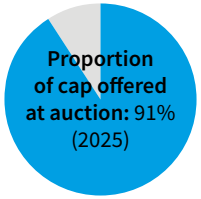
Installations/facilities (Units that serve an electricity generator with the nameplate capacity defined in the regulation)

NUMBER OF ENTITIES

222 entities (2024)

ALLOWANCE ALLOCATION & REVENUE

ALLOWANCE ALLOCATION



Auctioning: CO_2 allowances issued by each RGGI state are distributed through quarterly auctions. States hold a limited amount in "set-aside" accounts and distribute them according to state-specific regulations.

Of the 66.6 million 2025 allowances (after the adjustment for banked allowances), 91% were sold at auction. The remainder were either transferred from state set-aside accounts, retired, or remained in set-aside accounts. No offset allowances were awarded. Additionally, 8.1 million allowances were sold from the cost containment reserve (see 'Market Stability Provisions' section).

USE OF REVENUES

- Assistance for individuals, households, and businesses
- Climate mitigation
- Low-carbon innovation

Revenues from the quarterly auctions are returned to the RGGI states and have been primarily invested in the following consumer benefit programs: energy efficiency, direct bill assistance, beneficial electrification, GHG abatement, and clean and renewable energy. A report released in July 2024 found that the direct lifetime benefits of RGGI investments made in 2022 are projected to avoid 7.5 million short tons of CO_2 (6.8 $MtCO_2$) and return approximately USD 1.8 billion in lifetime energy bill savings to 246,000 households and over 2,600 businesses that participated in programs funded by RGGI proceeds.

6 These values do not include Pennsylvania nor Virginia.

The distribution of RGGI investments in 2022 was: energy efficiency (49%); direct bill assistance (21%); beneficial electrification[7] (14%); clean and renewable energy (7%); and GHG abatement and climate change adaptation[8] (3%).

FLEXIBILITY & LINKING

BANKING AND BORROWING

Banking is allowed without restrictions. Current regulations include provisions to adjust the cap to address the aggregate bank, so that allowances available for auction are reduced by the number of allowances not used for compliance in previous control periods (see also 'Cap' section above). The RGGI states are currently implementing the third adjustment for banked allowances, which runs until 2025. As part of the RGGI review process, the states are considering whether to address or adjust for banked allowances into the future if a bank of surplus allowances remains in circulation after 2025.

Borrowing is not allowed.

OFFSET CREDITS

The use of offsets is allowed. However, beginning in 2027, RGGI offset allowances will no longer be awarded.

53,506 offset allowances have been awarded during RGGI's time of operation, all of which were from a 2017 landfill methane capture and destruction project.

QUALITATIVE LIMIT: Currently, the program allows offset credits from three offset types located in RGGI states:

1. landfill methane capture and destruction;
2. sequestration of carbon due to reforestation, improved forest management, or avoided conversion; and
3. avoidance of methane emissions from agricultural manure management operations.

Some states have discontinued specific offset protocols, but all accept offset allowances issued by any participating state. To date, only one offset project (landfill methane capture and destruction) has been approved under RGGI.

QUANTITATIVE LIMIT: 3.3% of an entity's liability may be covered by offset credits. This share will remain unchanged between 2021 and 2030. These limits on offset usage will still apply to already awarded offsets even after they cease to be awarded in 2027.

Between the first and the fourth control periods (2009 to 2020), no CO_2 offset allowances were deducted. As of the 2022 interim compliance summary report, no CO_2 offset allowances had been deducted in the fifth control period (2021 to 2023).

LINKS WITH OTHER SYSTEMS

RGGI is a cooperative effort between participating states. Each state establishes an individual CO_2 budget trading program based on the RGGI Model Rule. Covered sources in each participating state can surrender allowances issued by any participating state for compliance and participating states use joint auctions.

OTHER CARBON PRICING INSTRUMENTS IN THE JURISDICTION

State-level ETS: Massachusetts Limits on Emissions from Electricity Generators

State-level ETSs are also being considered or developed in the following RGGI states: Maryland, New York, Vermont

Domestic crediting mechanism: RGGI Crediting Mechanism

COMPLIANCE

COMPLIANCE MECHANISM

Covered entities must surrender one compliance unit (allowance or offset credit) per short ton of CO_2 emitted for all their covered emissions.

COMPLIANCE PERIOD

Three years.

Compliance is evaluated at the end of each three-year phase (control period). From the third phase, covered entities must surrender allowances corresponding to 50% of their verified emissions in each of the first two years of a phase. They must cover 100% of the remaining allowances at the end of the three-year phase.

MRV

FRAMEWORK: Emissions data are recorded in the US EPA's Clean Air Markets Division database in accordance with state CO_2 budget trading program regulations and agency regulations. Provisions are based on the US EPA monitoring provisions. Data are then automatically transferred to the electronic platform of the RGGI CO_2 Allowance Tracking System (COATS), which is publicly accessible.

7 Programs implementing or facilitating replacement of fossil fuel use with electric power.
8 Diverse programs, including the promotion of technology, research, and development programs, climate change policy research, coastal resilience, and flood preparedness programs.

MONITORING: Operators must comply with all monitoring and recordkeeping requirements laid out in the Model Rule.

REPORTING: CO_2 monitoring reports must be submitted quarterly.

VERIFICATION: Emission data reports and their underlying data are required to undergo periodic quality assurance and quality control procedures in accordance with US EPA regulations.

PENALTIES AND ENFORCEMENT

In cases of excess emissions (i.e., if entities do not surrender all required allowances by the deadline), allowances equivalent to three times the amount of excess emissions must be surrendered. Furthermore, covered entities may also be subject to specific penalties imposed by the RGGI state where it is located.

MARKET REGULATION

MARKET DESIGN

MARKET PARTICIPATION: Compliance entities, non-compliance entities (domestic and international), and individuals can participate if they provide a financial security.

MARKET TYPES:

Primary: Most CO_2 allowances issued by each RGGI state are distributed through quarterly regional auctions. The RGGI COATS records and tracks data for each state's CO_2 budget trading program, including the transfer of allowances offered for sale by the states and purchased by the winning qualified bidders in the quarterly auctions. Auctions are open to all parties with financial security, with a maximum bid of 25% of the volume on offer per sale. There is no allowance holding limit. Auctions are managed by Enel X.

Secondary: The secondary market for RGGI CO_2 allowances comprises the trading of physical allowances and financial derivatives, including futures, forwards, call options, and put options. RGGI COATS facilitates participation in the secondary market and enables the public to view and download RGGI data and CO_2 allowance market activity reports. Financial derivatives are traded on the ICE platform.

Potomac Economics, an independent market monitor, monitors the performance and efficiency of the RGGI CO_2 allowance auctions and the secondary CO_2 allowance market.

LEGAL STATUS OF ALLOWANCES: The RGGI Model Rule specifies that allowances are limited authorizations by the participating state's regulatory agencies to emit up to one short ton of CO_2.

MARKET STABILITY PROVISIONS

AUCTION PRICE FLOOR

Instrument type: Price-based instrument

Functioning: Auctions have a price floor of USD 2.62 per short ton in 2025, increasing by 2.5% per year (to reflect inflation). The price floor will rise to USD 9.00 in 2027, increasing by 7% per year thereafter.

COST CONTAINMENT RESERVE (CCR)

Instrument type: Price-based instrument

Functioning: Since 2014, RGGI has operated with a CCR, consisting of a number of allowances in addition to the cap held in reserve and only released to the market if certain trigger prices are reached. Beginning in 2021, allowances provided within the CCR are equal to 10% of the regional cap. The trigger price is USD 17.03 in 2025 and increases by 7% per year. It had previously increased by 2.5% annually between 2017 and 2020, from a starting value of USD 10.

From 2027, the CCR will be enlarged to about 11.75 million allowances per year (up from 10 million in the previous single-tier structure) and split into two price tiers, each with its own trigger price. In 2027, the trigger prices of the two tiers will be set at USD 19.50 and USD 29.25 respectively, before rising incrementally to USD 38.36 and USD 57.53 by 2037.

The CCR was triggered in 2014 and 2015, when all 15 million allowances it contained were sold. The CCR was also triggered in the last quarterly auction of 2021, where 3.9 million of the available 11.9 million allowances were sold. It was triggered again in the final auction of 2023, with 5.6 million of the 11.2 million CCR units on offer sold. The CCR was also triggered in March 2024, when all 8.4 million allowances it contained were sold.

EMISSIONS CONTAINMENT RESERVE (ECR)

Instrument type: Price-based instrument

Functioning: In 2021, RGGI started implementing an ECR, which withholds allowances from auction if certain trigger prices are reached, up to an annual withholding limit of 10% of the emission budgets (i.e., the share of each state in the regional cap) of participating states. Allowances withheld will not be re-offered for sale, effectively adjusting the cap downward. In 2025, the trigger price is USD 7.86, increasing by 7% per year. Maine and New Hampshire are not participating in the ECR.

Beginning in 2027, the ECR will be removed and replaced with the increased minimum reserve price outlined above.

OTHER INFORMATION

INSTITUTIONS INVOLVED

Statutory and/or regulatory authority of each RGGI state: Each state implements the program under its particular statutory authority.
Environmental and energy agencies for each RGGI state: Agencies implementing the respective CO_2 budget trading programs.
RGGI Inc.: Non-profit cooperative supporting RGGI's development and implementation. This includes engaging contractors for various tasks such as allowance and emissions tracking, market monitoring, and management of the auctions.
Potomac Economics: Monitors the conduct of market participants in the auctions and in the secondary market to identify indications of anti-competitive conduct.
Enel X: Manages the auctions.

EVALUATION/ETS REVIEW

The RGGI participating states periodically review the ETS to consider program successes, impacts, and design elements. The first program review process (known as the 2012 Program Review) was completed in early 2013. A second review process was completed in 2017, resulting in the 2017 Model Rule. Program reviews were accompanied by stakeholder meetings and the submission of comments from interested parties.

The RGGI states announced the results of the Third Program Review in July 2025, resulting in the 2025 Model Rule, with agreement to begin a Fourth Program Review no later than 2028.

As of 2024, CO_2 emissions from power plants in the ten fully participating states have fallen to 43% below a 2006 to 2008 baseline since RGGI's inception, a faster decline than the US as a whole.[9]

REGULATORY FRAMEWORK

→ **2017 RGGI Model Rule**
→ **2017 RGGI Model Rule Updates (Summary)**
→ **2025 Model Rule**
→ **RGGI States' Statutes & Regulations**
→ **RGGI Program Design**

9 This reference excludes Virginia emissions.

SASKATCHEWAN

SASKATCHEWAN OUTPUT-BASED PERFORMANCE STANDARDS PROGRAM

- Compliance based on emissions that exceed a permitted level, determined by the baseline emissions intensity and production output
- Opt-in possible for smaller emitters
- Coverage expanded from January 2023 with the discontinuation of the partial Federal OBPS in Saskatchewan

ETS DESCRIPTION

Saskatchewan's Output-Based Performance Standards (OBPS) Program came into effect in 2019. It is an intensity-based ETS for large industrial emitters, in which regulated facilities are required to satisfy a facility specific performance standard.

When registering in the OBPS Program, each facility must first establish a baseline emission intensity. A facility's permitted emissions are calculated each year by applying a sector-specific performance standard to the facility's baseline emission intensity and multiplying the result by the production output at the facility for the current year. Facilities in the power sector do not set a baseline and are subject to pre-determined performance standards.

Facilities with emissions below the permitted level are awarded performance credits for the difference. Facilities with emissions above their permitted level must either retire performance credits or CCUS credits, or make a payment at a prescribed rate per tonne of CO_2e.

The system applies to the same GHGs and covers equivalent sectors as those under the federal system, and follows the same price trajectory, rising CAD 15 (USD 10.73) each year until 2030, resulting in a price of CAD 170 (USD 121.60[2]) per tCO_2e for 2030 emissions. The price for 2026 emissions is CAD 110 (USD 78.68).

The inclusion thresholds are set lower than in the Canadian federal system, covering facilities in covered sectors with emissions exceeding 25,000 tCO_2e/year and with a voluntary opt-in option for any emitting facility that is in a sector already covered by Saskatchewan's OBPS Program or that demonstrates that it operates in an emissions-intensive, trade-exposed sector.

YEAR IN REVIEW

In October 2025, the Saskatchewan Technology Fund announced CAD 47.5 million (USD 33.98 million) to support nine industry-led projects focused on reducing GHG emissions and delivering environmental and socio-economic benefits. As of that date, the Technology Fund had leveraged almost CAD 630 million (USD 450.64 million) in private investment and eliminated over 6 $MtCO_2e$.

The Business Plan of the Ministry of Environment for FY2026 set a goal to expand the sectoral and emissions coverage of the OBPS program by 5% in the same fiscal year, and by 30% by 2030 as a way to reduce the coverage of the federal system in Saskatchewan.

1 This does not include any value from the generation or sale of credits within Saskatchewan's OBPS Program.
2 USD conversion based on 2025 IMF exchange rate; actual future exchange rates may differ.

SECTORS

MINING AND EXTRACTIVES

POWER

INDUSTRY

CAP OR TOTAL EMISSIONS LIMIT

Intensity-based cap
Coverage of 28.9 $MtCO_2e$ (2023)

GREENHOUSE GASES

CO_2, CH_4, N_2O, SF_6, HFCs, PFCs

OFFSET CREDITS

Not allowed

ALLOCATION

Free Allocation: Output-based Benchmarking

AVERAGE 2025 PRICES

Set price: CAD 95 (USD 67.95)

TOTAL REVENUE

CAD 854.5 million (USD 625.9 million) since the beginning of the program[1]
CAD 364.8 million (USD 201.7 million) in FY2025

On March 27, 2025, the government of Saskatchewan announced that it would pause the OBPS Program effective April 1, 2025 in response to the uncertainty and increasing costs associated with ongoing global tariffs. While the accrual and fulfilment of compliance obligations is paused, regulated facilities are still required to submit their emission reports to the Ministry of Environment.

The government of Saskatchewan has and continues to engage with industry on the future of the OBPS Program.

EMISSIONS & TARGETS OF SASKATCHEWAN

OVERALL GHG EMISSIONS (including indirect CO_2, excluding LULUCF), **2023**
(in $MtCO_2e$, share of total in %)

Energy	60.5	82%
Industrial processes	0.8	1%
Agriculture	11.2	15%
Waste	1.4	2%
Total	**73.9**	

Energy industries	25.2	34%
Manufacturing industries and construction	1.2	2%
Transport	15.7	21%
Commercial, institutional, and residential	3.3	4%
Other energy	15.1	20%

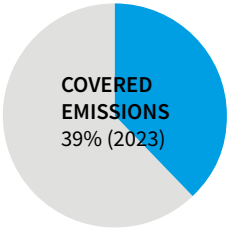
ETS COVERAGE & PHASES

COVERED EMISSIONS 2023[3]

Emissions from current ETS covered sectors: 28.9 $MtCO_2e$

PHASES

PHASE 1: Three years (2019 to 2022)
PHASE 2: From 2023



CAP OR TOTAL EMISSIONS LIMIT

The total emission limit under the Saskatchewan OBPS is determined bottom-up: it is the sum of the annual emissions limits for each individual regulated facility. The emissions limit is set for each facility or aggregate facility, and is determined based on the applicable emissions intensity standard for the year and the level of production in the same reduction period. The limit is therefore not set ex-ante and is only known after the compliance period ends. It does not represent an absolute cap. As of December 18, 2023, the system had covered approximately 28.9 $MtCO_2e$.

SECTORS AND THRESHOLDS

PHASE 1: Industry
PHASE 2: Industry plus electricity generation and natural gas transmission pipeline sectors, and lowered threshold for voluntary opt-in to zero.

INCLUSION THRESHOLDS: Coverage is mandatory for industrial facilities with emissions exceeding 25,000 tCO_2e/year and electricity facilities with emissions exceeding 10,000 tCO_2e/year. Other emitters may also be covered by the system, on an opt-in basis if they are in a sector already covered by Saskatchewan's OBPS Program or demonstrate that they operate in an emissions-intensive, trade-exposed sector. Prior to the expansion of the Saskatchewan OBPS in January 2023, the minimum threshold for voluntary opt-in coverage was 10,000 tCO_2e/year.

POINT OF REGULATION

Point source (Mining and extractives, Power, Industry)

TYPE OF ENTITIES

Facilities

NUMBER OF ENTITIES

182 registered facilities (as of the end of FY2025)

ALLOWANCE ALLOCATION & REVENUE

ALLOWANCE ALLOCATION

Facilities in Saskatchewan's OBPS Program determine their annual permitted emissions based on their performance standard and their level of production for the applicable year.

When registering in the program, each facility must first establish a baseline emissions intensity, which is derived from its historical emissions intensity or, for new facilities, the first three years of operation. A facility's permitted emissions are calculated each year by applying a sector-specific performance standard to the facility's baseline emissions intensity and multiplying the result by the production output at the facility for the current year.

3 As of 18 December 2023

Facilities with emissions above their permitted emissions level must pay compliance. Facilities that emit less than their permitted emissions receive compliance units (called "performance credits"), free of charge, corresponding to the number of tCO_2e below the permitted level. This is similar to free allocation based on benchmarks. These compliance units can be sold to facilities that emit more than their permitted emissions or banked for future use (see 'Market Design' section below for more details).

Moreover, regulated emitters which operate CCUS projects that capture CO_2 directly from a facility in Saskatchewan and inject it into a reservoir in the province that can permanently store the CO_2, can earn CCUS credits that can be used for compliance.

USE OF REVENUES


Climate mitigation


Low-carbon innovation

The Provincial Output-Based Performance Standards (OBPS) Program has regulated the industry and mining and extractive sectors since 2019. Compliance payments made by facilities in these sectors have gone into the Saskatchewan Technology Fund.

Money collected in the Saskatchewan Technology Fund is used to fund industry-driven projects that reduce or sequester emissions. Funds are awarded through a merit-based application process. To receive resources from the Fund, applicants must be regulated emitters with an established baseline under "The Management and Reduction of Greenhouse Gases (Standards and Compliance) Regulations, 2023".

Starting in 2023, the program expanded to the power sector and half the compliance payments from electricity generators are directed towards the Small Modular Reactor Investment Fund and the other half towards the Clean Electricity Transition Grant.

Funds allocated to the Small Modular Reactor Investment Fund are to be used to support the future development of the province's first small modular nuclear reactor, which will provide zero-emissions baseload power.

Funds allocated to the Clean Electricity Transition Grant are used for clean electricity operating costs (e.g., purchasing renewable electricity from independent power producers, funding demand-side management programs).

The Saskatchewan Technology Fund had total financial assets of CAD 234 million (USD 167.38 million) as of March 31, 2025. The Small Modular Reactor Investment Fund currently holds approximately CAD 478 million (USD 341.91 million) in compliance payments from facilities in the power sector.

FLEXIBILITY & LINKING

BANKING AND BORROWING

Performance credits and CCUS credits (compliance units) may be banked for future compliance years. Borrowing is not allowed.

OFFSET CREDITS

No offset credit program exists.

LINKS WITH OTHER SYSTEMS

Saskatchewan's OBPS Program is not currently linked with any other system.

OTHER CARBON PRICING INSTRUMENTS IN THE JURISDICTION

None

COMPLIANCE

COMPLIANCE MECHANISM

Facilities that have exceeded their annual emissions limit incur a compliance obligation. They can fulfill this obligation by retiring performance credits, CCUS credits, or paying for each tCO_2e by which the emissions limit was exceeded (see 'Use of Revenues' section above for more details).

COMPLIANCE PERIOD

One year.

MRV

FRAMEWORK: There are three standards that prescribe reporting requirements for the Saskatchewan OBPS Program: "The Industrial Facility Standard", "The Electricity Facility Standard", and "The Aggregate Facility Standard". The "Management and Reduction of Greenhouse Gases (Reporting and General) Regulations, 2025", specify GHG monitoring and reporting requirements for non-OBPS regulated entities.

MONITORING: The Management and Reduction of Greenhouse Gases (Reporting and General) Regulations, 2025, sets a minimum threshold to monitor and report emissions for non-OBPS-covered facilities of 10,000 tCO_2e.

REPORTING: GHG emissions for covered entities must be reported by June of the year following the reporting period.

When registering baselines, OBPS-covered entities that do not have new products must submit their verified baseline submission within six months of the date of registration. Facilities with a new product must submit their verified baseline submissions by June of the first and second compliance years.

VERIFICATION: OBPS-covered entities must ensure that emissions and production data are verified and reviewed by a verification body accredited to the ISO 14065 standard (2020 version). Flexibility in verification is provided to small oil and gas aggregate facilities (comprised of two or more small oil and gas facilities that are owned or operated by the same company). An aggregate facility with emissions below 1,000 tCO_2e is not required to verify emissions. Verification reports need to be prepared in the format specified by the Minister, in accordance with the ISO 14064-3 standard, and must be reviewed by an independent reviewer.

PENALTIES AND ENFORCEMENT

An unfulfilled compliance obligation becomes a debt owing to the government of Saskatchewan, which it may recover by any legally authorized manner. The debt bears interest at a rate equal to the prime lending rate of the bank holding of Saskatchewan's general revenue fund plus three percentage points. The maximum administrative penalty the environment minister may assess with respect to each contravention is CAD 10,000 (USD 7,153.01).

MARKET REGULATION

MARKET DESIGN

MARKET PARTICIPATION: Compliance entities, including mandatorily and voluntarily covered entities (for inclusion thresholds see 'Sectors and Thresholds' section.)

MARKET TYPES:

Primary: Compliance units are currently not auctioned.

Secondary: Regulated facilities may purchase performance credits from other regulated facilities. Transactions are conducted via a registry that is managed by the Ministry of Environment.

MARKET STABILITY PROVISIONS

TECHNOLOGY FUND

Instrument type: Set price or set price trajectory (akin to a price ceiling)

Functioning: Regulated facilities, except those in the power sector, can pay directly into Saskatchewan's Technology Fund to satisfy their compliance obligation. Facilities in the power sector can make payment directly to the provincial government to fulfill a compliance obligation. The price paid in either scenario acts as a price ceiling and is aligned with the federal minimum carbon price (CAD 95, USD 67.95, in 2025). The price increases by CAD 15 (USD 10.73) each year until 2030, resulting in a price of CAD 170 (USD 121.60) per tCO_2e in 2030.

The performance standards in the OBPS Program were set such that the supply of performance credits will not exceed the total compliance owed in the program. This balance helps ensure a healthy and stable OBPS credit market.

OTHER INFORMATION

INSTITUTIONS INVOLVED

Saskatchewan Ministry of Environment: Regulates the OBPS program, ensures compliance obligations are fulfilled, and maintains regulatory and policy oversight over the Technology Fund.
Innovation Saskatchewan: Government office that receives and tracks compliance payments and performs general accounting of the Technology Fund.

EVALUATION/ETS REVIEW

Saskatchewan has a mandatory ten-year review for all regulations. In addition, Saskatchewan's OBPS Program will undergo review as part of the 2026 federal benchmark.

REGULATORY FRAMEWORK

- → The Management and Reduction of Greenhouse Gases Act
- → The Management and Reduction of Greenhouse Gases (Standards and Compliance) Regulations, 2023
- → Management and Reduction of Greenhouse Gases (Reporting and General) Regulations, 2025
- → 2023 Standards for Regulated Emitters
- → Saskatchewan Technology Fund: Governance, Administration and Operations Standard

VERMONT

- Act 148 (2024) mandated cap-and-invest study; completed February 2025
- Climate Action Plan (2025) prepared by Vermont Climate Council recommended joining cap-and-invest program “as soon as a viable option is available”
- Any future program to complement RGGI, which covers the state’s power sector emissions

In force

Under development

Under consideration

ETS DESCRIPTION

In June 2024, the Vermont State Legislature passed “Act 148 (the Transportation Bill)” which included a requirement for the Agency of Natural Resources and the Agency of Transportation to study a cap-and-invest program as a potential approach to help the state achieve its climate pollution reduction goals. Vermont participates in the Regional Greenhouse Gas Initiative (RGGI) which covers CO_2 emissions from the power sector. The cap-and-invest study explored the advantages and disadvantages of covering additional sectors in a multi-jurisdictional program.

The study was guided by a Technical Advisory Committee that included representatives from the Vermont Climate Council and the State Treasurer’s Office, in addition to staff from the two agencies. After scenario analyses and stakeholder and public engagement meetings, the study was completed, and the findings were presented to the Vermont Climate Council in February 2025. Thereafter, the State Treasurer’s Office submitted its recommendation to the legislature in its February 2025 Report, pursuant to Act 148 of 2024.

The Treasurer recommended that Vermont not establish an independent cap-and-invest program due to the state's relatively small size. The report acknowledged the potential benefits of cap-and-invest programs, including job creation (estimated at 80 to 810 jobs, depending on the approach) and anticipated health benefits, also noting that electricity from renewable sources can be more affordable and less price-volatile compared to fossil fuels.

The Treasurer's Office reviewed two potential partner programs: the Western Climate Initiative (WCI) and the New York Climate Initiative (NYCI). After analyzing both options, the Treasurer recommended that Vermont wait for and analyze the details of NYCI when they become available, rather than pursuing immediate participation in any existing program. While the Treasurer’s Office concluded that it would not make sense to join another program at this time, it noted that the viability of such a program could be greater in the coming years.

In the interim, the Treasurer recommended that the Climate Action Office work with other relevant state agencies to: (1) continue to monitor the development and rollout of cap-and-invest programs and low-carbon fuel initiatives, (2) study methods to insulate low-income Vermonters from fuel cost increases and maximize their ability to perform efficiency upgrades, (3) study the economic and revenue impact of cross-border fuel leakage and engage with neighboring states about their likelihood of joining cap-and-invest programs, (4) determine how revenues would be invested and whether Vermont's current workforce is sufficient to meet the increased workload, and (5) study GHG emissions reporting requirements and make a recommendation about whether and when to establish a reporting-only program.

A cap-and-invest program was also presented in the 2023 “Vermont Transportation Carbon Reduction Strategy” as a potential policy to close the gap between actual and required GHG emissions levels in Vermont’s transportation sector. More recently, taking steps to join such a program was included in Vermont’s 2025 Climate Action Plan as a priority recommendation, with the Vermont Climate Council describing a cap-and-invest program as an “an overarching policy to provide predictable and substantial emissions reductions in Vermont over time”.

EMISSIONS & TARGETS OF VERMONT

OVERALL GHG EMISSIONS (including indirect CO_2, excluding LULUCF), **2022**
(in $MtCO_2e$, share of total in %)

Energy	6.0	75%
Industrial processes	0.6	7%
Agriculture	1.3	16%
Waste	0.2	3%
Total	**8.1**	

Electricity	0.2	3%
Residential, commercial and industrial fuel use	2.6	32%
Transport	3.2	40%
Fossil fuel industry	0.0	<1%

GHG REDUCTION TARGETS

By 2025: 26% reduction from 2005 baseline ("Global Warming Solutions Act")
By 2030: 40% reduction from 1990 baseline (Global Warming Solutions Act)
By 2050: 80% reduction from 1990 baseline (Global Warming Solutions Act)

FLEXIBILITY & LINKING

OTHER CARBON PRICING INSTRUMENTS IN THE JURISDICTION

ETS: RGGI

OTHER INFORMATION

INSTITUTIONS INVOLVED

Vermont Agency of Natural Resources: Agency responsible for co-coordinating and managing the study.
Vermont Agency of Transportation: Agency responsible for co-coordinating and managing the study.
Technical Advisory Committee: Group responsible for guiding the study, including representatives from the Vermont Climate Council and the State Treasurer's Office in addition to staff from the Agency of Natural Resources and the Agency of Transportation.

REGULATORY FRAMEWORK

- → Transportation Bill (Act 148)
- → Vermont Transportation Carbon Reduction Strategy
- → Global Warming Solutions Act (Act 153)
- → Office of the Vermont State Treasurer Report Pursuant to Act 148 of 2024
- → Vermont Climate Action Plan (2025)

WASHINGTON

CAP-AND-INVEST PROGRAM

- New law sets price ceiling unit price at USD 80
- Washington advances rulemaking for potential California-Québec linkage and program updates following the passage of HB 1975

ETS DESCRIPTION

Washington's Cap-and-Invest Program began operating in January 2023. It covers around 70% of the state's emissions, and its cap trajectory is consistent with the long-term target to reduce statewide emissions to 95% below 1990 levels by 2050.

The program covers emissions from 96 entities in the mining, energy, industrial, buildings, and transport sectors. Many of the Cap-and-Invest Program's design elements are similar to those of California's Cap-and-Invest Program. Covered entities must surrender allowances for all their covered emissions. Allowances are distributed through auctioning and free allocation, with the latter based primarily on benchmarking. The program has a cost containment reserve and auction reserve price to support market stability and moderate covered entities' compliance costs.

The Cap-and-Invest Program was established by the "Climate Commitment Act" (CCA), signed into law by then-Governor Jay Inslee in May 2021. Washington is the second state in the United States to pass a law requiring such an economy-wide program, after California. Launched as a standalone system, the CCA directed the Department of Ecology to pursue linkage with California and Québec. "Senate Bill 6058", which is designed to facilitate linkage, went into effect in January 2025.

YEAR IN REVIEW

Washington's Cap-and-Invest Program saw significant changes in 2025, with the Legislature enacting "HB 1975" (Chapter 320, Laws of 2025; effective July 27, 2025). The bill directs Ecology to analyze and model the program's allowance and other compliance-instrument markets, including scenarios with potential linkage, to support market-dynamics assessment and future design adjustments. Though price ceiling units were already in effect as a backstop to offer additional units issued at the price ceiling if Allowance Price Containment Reserve (APCR) supply is exhausted, HB 1975 established the fixed price ceiling of USD 80 for 2026 to 2027.

Ecology expanded its "Program Updates and Linkage" rulemaking (CR-101 refiled March 31, 2025), published draft rule language through spring and summer 2025, and set a timetable to propose linkage rules in spring 2026, with a view to adopting them in autumn 2026 to enable potential linkage with California and Québec.

Ecology also concluded an offsets rulemaking, adopting an updated Ozone Depleting Substances protocol from Aug 2025. In parallel, Ecology advanced a separate US forest protocol update. On January 9, 2026, Ecology submitted a statutory report to the Legislature on no-cost allowance allocation for emissions-intensive, trade-exposed industries (EITEs) for 2035–2050.

Ecology held a planned pre-compliance APCR auction in October. The September quarterly auction cleared above the APCR Tier 1 trigger, prompting an additional reserve auction on November 12 at the fixed reserve price of USD 60.43. The final auction of the year (and 12th auction since the start of the Cap-and-Invest Program) took place on December 3. All 7,424,390 current vintage allowances

1 100% of these offsets entail direct environmental benefits to Washington State.

SECTORS

- MINING AND EXTRACTIVES
- TRANSPORT
- POWER
- BUILDINGS
- INDUSTRY

CAP OR TOTAL EMISSIONS LIMIT

Absolute Cap, 49.0 $MtCO_2e$ (2026)

GREENHOUSE GASES

CO_2, CH_4, N_2O, SF_6, HFCs, PFCs, NF_3, other fluorinated GHGs

OFFSET CREDITS

Domestic offset credits are allowed with quantitative limits[1]

ALLOCATION

Free Allocation: Grandparenting
Free Allocation: Fixed Benchmarking
Free Allocation: Output-based Benchmarking
Auctioning

AVERAGE 2025 PRICES

Average auction price (current vintage): USD 60.95
Average secondary market price: USD 61.36

TOTAL REVENUE

USD 4.3 billion of state revenue since the beginning of the program (USD 5.6 billion including consigned allowances)
USD 1.7 billion in 2025 (USD 2.3 billion including consigned allowances)

offered for sale by Ecology and consigning entities were sold at a settlement price of USD 70.86 apiece. All 1,945,905 future vintage allowances were sold in the advance auction at a settlement price of USD 29.40 each.

EMISSIONS & TARGETS OF WASHINGTON

OVERALL GHG EMISSIONS (including indirect CO_2, excluding LULUCF), **2021**
(in $MtCO_2e$, share of total in %)

Energy	82	85%
Industrial processes	4.3	5%
Agriculture	6.6	7%
Waste	3.2	3%
Total	**96.1**	

Electricity	18.7	19%
Transport	38.2	40%
Commercial, Industrial and Residential	23.7	25%
Other energy	1.4	2%

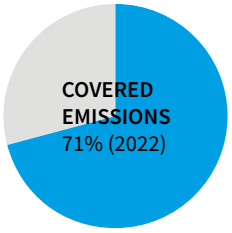
GHG REDUCTION TARGETS

By 2030: 45% reduction from 1990 GHG levels ("Greenhouse Gas Emission Limits – Amendment 2020")
By 2040: 70% reduction from 1990 GHG levels ("Greenhouse Gas Emission Limits – Amendment 2020")
By 2050: 95% reduction of total GHG emissions below 1990 levels and achievement of net-zero emissions ("Greenhouse Gas Emission Limits – Amendment 2020")

ETS COVERAGE & PHASES

COVERED EMISSIONS 2022

Verified ETS emissions: 68.2 $MtCO_2e$[2]



PHASES

FIRST COMPLIANCE PERIOD: Four years (2023 to 2026)
SECOND COMPLIANCE PERIOD: Four years (2027 to 2030)
THIRD COMPLIANCE PERIOD: Four years (2031 to 2034)

Under Senate Bill 6058, the Department of Ecology may be required to revise the definition of "compliance period" through rulemaking to align with a linked jurisdiction. However, the length of the first compliance period will not change.

CAP OR TOTAL EMISSIONS LIMIT

An absolute cap limits the total emissions allowed in the system and is fixed ex-ante.

FIRST COMPLIANCE PERIOD: The cap for 2023 was set at 63 $MtCO_2e$, which is equal to 93% of average emissions levels of covered entities between 2015 and 2019. The cap declines annually by 7%, to reach 49 $MtCO_2e$ in 2026.

SECOND COMPLIANCE PERIOD: The cap for 2027 will be set at 93% of the sum of the 2026 cap and emissions from new entities entering the program for the second compliance period. The cap declines by 7% annually through 2030.

THIRD COMPLIANCE PERIOD AND BEYOND: The cap for 2031 will be set at 98.2% of the sum of the 2030 cap and emissions from new entities entering the program for the third compliance period. In the period from 2032 to 2042, the cap declines annually by 1.8%.

In the period from 2043 to 2049, the cap declines annually by 2.6%, reaching a 95% reduction from 1990 emissions levels by 2050.

SECTORS AND THRESHOLDS

FIRST COMPLIANCE PERIOD: All facilities with emissions over 25,000 tCO_2e, including industrial facilities, electricity generators, importers of electricity, fuel distributors, and natural gas suppliers. Excludes emissions from waste-to-energy and solid waste management. Starting in emissions year 2025, electric power entities (EPEs) which meet the 10,000 tCO_2e emissions reporting threshold and have over 0 tCO_2e emissions from unspecified sources, also have to participate in the Cap-and-Invest Program.

SECOND COMPLIANCE PERIOD: Waste-to-energy facilities with emissions over 25,000 tCO_2e in at least one year between 2023 and 2025 will be added.

THIRD COMPLIANCE PERIOD: Railroad companies with emissions over 25,000 tCO_2e in at least one year between 2027 and 2029 will be included.

VOLUNTARY OPT-IN PARTICIPATION: Any facility that is already covered by the mandatory MRV system but with emissions below the 25,000 tCO_2e "Cap-and-Invest Program" inclusion threshold may voluntarily participate as an opt-in entity. Other facilities, including federal power marketing administrations (FPMA), can also participate as opt-in entities. Opt-in entities become covered by the mandatory MRV system and must follow the same MRV requirements as other covered entities.

2 These emissions are reported but not third-party verified. Verification started for emissions year 2023. This value excludes biogenic emissions.

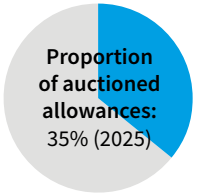
POINT OF REGULATION
Upstream (building, power [imported electricity] transport); point source (mining, industry, power).

TYPE OF ENTITIES
Facilities, fuel distributors, electricity importers.

NUMBER OF ENTITIES
96 covered entities, covered sources, or opt-in entities.

ALLOWANCE ALLOCATION & REVENUE

ALLOWANCE ALLOCATION



Allowances are distributed via free allocation, free allocation with consignment, and auction.

FREE ALLOCATION: Emissions-intensive, trade-exposed facilities receive free allowances to mitigate the risk of carbon leakage. Allocation is done using facility-specific benchmarks, based on their average carbon intensity over the period between 2015 and 2019. Facilities could request free allocation based on their average emissions (i.e., grandparenting) only in a few instances where they were unable to calculate the emissions intensity of their production over this period. The reduction schedule that is applied to the allocation of no-cost allowances to eligible facilities will be based on four-year periods that are specified in the statute, instead of compliance periods.

FIRST COMPLIANCE PERIOD: Set at 100% of the benchmark multiplied by actual production, or historical emissions level.

SECOND COMPLIANCE PERIOD: Set at 97% of the benchmark multiplied by actual production, or historical emissions level.

THIRD COMPLIANCE PERIOD: Set at 94% of the benchmark multiplied by actual production, or historical emissions level.

FREE ALLOCATION WITH CONSIGNMENT: Electricity utilities receive free allowances based on forecasts of the electricity supply and administrative costs associated with complying with the "Cap-and-Invest Program". During the first compliance period, they can choose to consign up to 100% of their allowances to auction. Natural gas facilities received an initial free allocation equal to 93% of their average emissions in the period from 2015 to 2019. The amount reduces annually in line with the cap decline factor. In 2023, 65% of free allowances must have been consigned for auction. This amount increases by 5% each year, reaching full consignment in 2030. Freely allocated allowances that are not consigned for auction may only be used for surrender and cannot be traded. Whether consigned or not, the allowance value allocated to electricity utilities and natural gas suppliers is required to be used for ratepayer benefit.

AUCTIONING: Auctions occur four times a year. Unsold allowances are held for future auctions and only sold if the settlement price is above the auction floor price for two consecutive auctions. Any that remain unsold within 24 months are transferred to an emissions containment reserve (see 'Market Stability Provisions' section).

USE OF REVENUES

Climate mitigation

Pursuit of other development objectives, such as education and health

Assistance for individuals, households, and businesses

USE OF REVENUE FROM FREE ALLOWANCES CONSIGNED FOR AUCTION: Revenues raised from the auctioning of free allowances on behalf of electricity utilities and natural gas facilities must be used to benefit ratepayers or customers, prioritizing those from low-income groups. In most cases the state's Utilities and Transportation Commission determines how the revenues are used.

USE OF REVENUES FROM ALLOWANCES AUCTIONED BY THE DEPARTMENT OF ECOLOGY: Proceeds from auctions are split into five accounts:
- Carbon Emissions Reduction Account (CERA);
- Climate Investment Account (CIA);
- Climate Commitment Account (CCA);
- Natural Climate Solutions Account (NCSA); and
- Air Quality and Health Disparities Improvement Account (AQHDIA).

Each account is intended for different environmentally beneficial activities. Not all projects funded from these accounts are intended to reduce GHG emissions. Funds in each of these five accounts are to be appropriated for specific types of climate, environmental justice, and ecological projects. The CCA requires that a minimum of 35%, with a goal of 40%, of money from CCA accounts be used for projects that provide a direct and meaningful benefit to vulnerable populations within overburdened communities. At least 10% of CCA account funds are required to be used for projects formally supported by the resolution of a Tribe.

Prior to June 2025, the CERA included two additional accounts, the Climate Active Transportation and Climate Transit Program Accounts. The Legislature repealed these accounts in Chapter 417 Laws of 2025 (ESSB 5801, Sec 801). All residual funds in the two accounts were deposited back into CERA.

For the 2023 to 2025 Biennium, the Legislature appropriated a total of USD 2.75 billion across all budget types (operating, capital, and transportation) and total spending for the same period reached USD 1.5 billion or 55% of legislative appropriations. During fiscal year 2025 (July 1, 2024 through June 30, 2025), approximately USD 1 billion was spent.[3] Of the amount already spent during the Biennium, approximately USD 375 million was through CTPA, USD 650 million through CCA and USD 220 million through NCSA.

FLEXIBILITY & LINKING

BANKING AND BORROWING

Unlimited banking is allowed between periods; however, covered entities are subject to general holding limits, which depend on the cap level. Allowances held in a compliance account to be used for compliance or that are to be consigned for auction do not count towards the holding limit.

Borrowing is not allowed.

OFFSET CREDITS

The use of offset credits is allowed.

QUALITATIVE LIMITS: Washington has adopted – with modifications – the following offset credit protocols developed under the California Cap-and-Trade Program:

- Livestock projects;
- Ozone depleting substance projects;
- US forest projects; and
- Urban forestry projects.

Ecology adopted amendments updating the ozone depleting substances protocol on July 21, 2025 (effective August 21, 2025), and is separately advancing a US forest protocol update, with draft language released in July and September 2025 and a proposal (CR-102) slated for January 2026.

QUANTITATIVE LIMITS:

First compliance period: Up to 8% in aggregate. Up to 5% of an entity's compliance obligation from projects not located on federally recognized tribal land. An additional 3% can be met from projects located on federally recognized tribal land.

Second compliance period: Up to 6% in aggregate. Up to 4% of an entity's compliance obligation from projects not located on federally recognized tribal land. An additional 2% can be met from projects located on federally recognized tribal land.

Third compliance period and beyond: Up to 6% in aggregate. Up to 4% of an entity's compliance obligation, including from projects located on federally recognized tribal land. An additional 2% can be met from projects located on federally recognized tribal land.

In the event of a link to another trading system, at least 50% of offset credits must provide direct environmental benefits to the state (DEBS) in the first compliance period, rising to 75% from the second compliance period. Without a link, all offset credits must provide DEBS.

Entities surrendered 26,280 offset credits in 2023, corresponding to 0.13% of total instruments surrendered for compliance.

LINKS WITH OTHER SYSTEMS

The Washington Cap-and-Invest Program is not currently linked with any other system. However, in November 2023, the Department of Ecology announced that it would pursue linkage with the cap-and-trade programs of California and Québec. In March and September 2024, joint statements from the governments of Washington, California, and Québec affirmed their commitment to explore potential linkage. The state's linkage-related rulemaking and Environmental Justice Assessments are ongoing. The state anticipates full linkage occurring by 2027. Quarterly status updates on linkage are posted on the **Ecology Linkage Website**. The most recent update occurred in **December 2025**.

OTHER CARBON PRICING INSTRUMENTS IN THE JURISDICTION

None

COMPLIANCE

COMPLIANCE MECHANISM

Covered entities must surrender one compliance unit (allowance, offset credit) per tCO_2e emitted for all their covered emissions.

COMPLIANCE PERIOD

Four years.

3 The annual report titled "Distribution of Funds from CCA Accounts" for Fiscal Year 2025 is available **here**.

Except for the year following the last year of a compliance period, compliance instruments equal to at least 30% of the previous year's verified emissions must be surrendered annually, by the start of November (or the first business day thereafter). Compliance instruments equal to all remaining emissions must be surrendered by the start of November (or the first business day thereafter) of the year following the last year of a compliance period.

MRV

FRAMEWORK: The MRV framework was established by the regulation "Reporting of Emissions of Greenhouse Gases" (WAC 173-441).

MONITORING: Reporters must follow the calculation, monitoring, quality assurance, missing data, recordkeeping and reporting procedures specified in the applicable sections of the rule.

A written GHG monitoring plan is mandatory for reporters required to report under WAC 173-441-030, and must identify roles, data collection methods, quality assurance, maintenance, and repair procedures for meters/continuous monitoring systems, and include simplified block diagrams for facilities.

Calibration and accuracy requirements apply to meters and measurement devices at facilities, with different initial calibration dates for emissions and product data monitoring, and subsequent recalibrations per rule, manufacturer, or industry standards (WAC 173-441-050).

MRV thresholds: mandatory GHG reporting at ≥10,000 tCO_2e/year for facilities, fuel suppliers, and electric power entities; facilities report from 2012 onward; suppliers and electric power entities report beginning with the 2022 emissions year reported in 2023 (WAC 173-441-030).

REPORTING: Annual reporting is required; the emissions report is due by March 31 for most reporters, and by June 1 for electric power entities (WAC 173-441-050).

VERIFICATION: Third-party verification is required from the 2023 emissions year (reported in 2024) for any reporter emitting ≥25,000 tCO_2e/year, or any reporter with a mandatory or voluntary compliance obligation under the cap-and-invest law.

For reporters subject to third-party verification, full verification is required at least once every three reporting years (the first year must be full), with less-intensive verification allowed in the other two years if conditions are met. The verifier's report is due by August 10 for the prior calendar year (WAC 173-441-085). Verifiers must be certified by Ecology, including active accreditation/recognition under California ARB's Mandatory Reporting program (WAC 173-441-085).

PENALTIES AND ENFORCEMENT

If a covered or opt-in entity lacks sufficient compliance instruments to cover its annual and final compliance obligations at the relevant deadlines, it must, within six months, submit four penalty allowances for every missing compliance instrument. If the entity fails to submit the penalty allowances, Ecology must issue an order or a civil penalty of up to USD 10,000 per day per violation; each tonne of CO_2e not covered by a compliance instrument constitutes a separate violation (WAC 173-446-610).

MARKET REGULATION

MARKET DESIGN

MARKET PARTICIPATION: Compliance entities, including opt-in entities; non-compliance entities, including offset project participants; individuals with primary residence in the United States.

MARKET TYPES:

Primary: Auctions are held four times per year, with a calendar giving dates and volumes published in January of each year. Participants must have an account in the Compliance Instrument Tracking System Service (CITSS). Auctions are delivered through the Western Climate Initiative, Inc.

Secondary: Futures and options contracts for allowances are traded on the Intercontinental Exchange and Nodal Exchange. Allowances can be traded over the counter directly between market participants.

LEGAL STATUS OF ALLOWANCES: Allowances are not explicitly defined as "financial instruments" or "securities", but, alongside offset credits, are treated as "compliance instruments" created and administered by Ecology for compliance purposes, and are subject to specific rules on creation, trading, holding, banking and retirement.

MARKET STABILITY PROVISIONS

AUCTION PRICE FLOOR

Instrument type: Price-based instrument

Functioning: The auction price floor is set at USD 27.92 for 2026. It increases by 5% plus inflation annually, as measured by the nationwide Consumer Price Index for All Urban Consumers (CPI-U) identified by the US Bureau of Labor Statistics.

ALLOWANCE PRICE CONTAINMENT RESERVE (APCR)

Instrument type: Price-based instrument

Functioning: The APCR is a separate account managed by the Department of Ecology, from which allowances can be auctioned at pre-defined prices in the event of unexpectedly high allowance costs. Ecology places a percentage of each annual allowance budget into the APCR (currently 5% in the first and second compliance periods, 2023 to 2030), rather than a one-time frontload at program outset. The APCR has two price tiers, which in 2026 are set at USD 65.26 and USD 83.84 for Tiers 1 and 2 respectively.[4] Prices increase annually by 5% plus inflation, as measured by the CPI-U.

APCR auctions are held following any quarter in which the auction settlement price reaches or exceeds the Tier 1 price level, and a pre-compliance APCR auction is also held before each annual compliance deadline. Only covered and opt-in entities can participate. Sales occur at the fixed tier prices. Purchased allowances are deposited directly into entities' compliance accounts and cannot be traded on secondary markets. Any unsold allowances are carried over to future APCR auctions. Ecology publishes schedules and results for APCR auctions each year.

PRICE CEILING UNITS

Instrument type: Price-based instrument

Functioning: If there are no units remaining in the APCR, price ceiling units are made available to covered entities with insufficient allowances to meet their compliance obligations. Price ceiling unit sales only occur at the end of a compliance period and following the request of a covered entity, with advance notice as specified in rule. The ceiling price is set at USD 80.00 for 2026 to 2027 under HB 1975. Subsequent adjustments are determined by Ecology consistent with statute and rulemaking to facilitate potential linkage.

EMISSIONS CONTAINMENT RESERVE (ECR)

Instrument type: Price-based instrument

Functioning: Allowances can be withheld from an auction and placed in the ECR if auction settlement prices fall below the ECR trigger price. The trigger price is currently suspended, and this provision is therefore not operational.

OTHER INFORMATION

INSTITUTIONS INVOLVED

Department of Ecology: Responsible for the program rules and implementation of the "Cap-and-Invest Program".

Western Climate Initiative Inc.: Non-profit organization responsible for administering auctions, the CITSS registry, and conducting market surveillance.

Other partner jurisdictions utilizing WCI, including California, Québec, and New York State.

EVALUATION/ETS REVIEW

By December 2027, and every four years thereafter, the Department of Ecology is required to submit a comprehensive review of the program to the legislature.

Investments made during the 2023 to 2025 biennium are expected to directly reduce GHG emissions by nearly 9 $MtCO_2e$, at an estimated cost of USD 40 per tonne.[5]

REGULATORY FRAMEWORK

- → **Climate Commitment Act**
- → **Climate Commitment Act Program Rule**
- → **Reporting of Emissions of Greenhouse Gases**
- → **Senate Bill 6058**
- → **House Bill 1975**
- → **WAC 173-441**
- → **WAC 173-446**

4 Until a linkage agreement is signed, APCR auctions only include allowances at the Tier 1 price.
5 See the report **Distribution of funds from CCA accounts Fiscal Year 2025**. Note the disclaimer on the cover page.

03 FACTSHEETS

Latin America & the Caribbean

BOLIVIA

- Draft law introduced to establish a national ETS
- Mixed allocation model proposed, combining free allocation and auctioning
- Legislative process ongoing

In force

Under development

Under consideration

ETS DESCRIPTION

Bolivia is considering the establishment of a national ETS under a draft law titled “Regulation of the Market for Greenhouse Gas Emission Credits and Quotas of the Plurinational State of Bolivia” (PL-060/25), introduced by a group of five members of parliament to the Chamber of Deputies [IH1.1][AO1.2]in November 2025. The proposal marks a significant shift in Bolivia’s climate action approach, following recent legal and policy developments, including a 2024 constitutional court ruling that overturned the prohibition of climate and environmental market mechanisms, provisions in the 2025 Budget Law, and the formal inclusion of Article 6 cooperation in Bolivia’s third NDC, that opened the door to market-based climate instruments.

At the core of the proposal is the creation of a national ETS, referred to as the regulated carbon market, or Emission Quotas System (SCE), which would set a cap on GHG emissions from facilities exceeding a defined emissions threshold. The system would be based on tradable emission allowances with each allowance representing the right to emit one tonne of CO_2e during a defined compliance period.

The draft law proposes the establishment of a dedicated SCE authority, the Autoridad Nacional de Comercio de Emisiones (ANCE), as an autonomous body under the Ministry of Environment, with administrative, technical, and financial autonomy. ANCE would be responsible for system oversight, including setting the emissions cap, administering allocation, operating the registry, and enforcing compliance.

The overall emissions cap and system parameters would be defined through a National Allocation Plan (Plan Nacional de Asignación, PNA), to be prepared by ANCE and approved by ministerial resolution. The PNA would specify the total volume of emission allowances, identify covered sectors, and define the overall emissions cap through the total volume of allowances, as well as sectoral baselines to guide allocation and sectoral coverage[IH3.1] for each compliance period. The PNA will also establish the maximum number of offset credits that regulated entities may use for compliance purposes under the SCE.

Allowance allocation under the proposed ETS would follow a mixed model. Free allocation would initially be granted to sectors deemed at risk of carbon leakage, based on competitiveness and equity considerations, with the possibility of gradually reducing free allocation over time. In parallel, allowances could be distributed through public auctions, intended to enhance economic efficiency and generate public revenues.

Allowances would be valid only for the compliance period for which they are issued. Banking or transfer of allowances to future periods would not be permitted unless explicitly authorized by ANCE. All issuance, transfer, surrender, and cancellation of allowances would be recorded in a National Registry of Emissions, Allowances, and Carbon Credits, designed to ensure transparency and prevent double counting.

The draft law also defines a compliance and enforcement framework. Regulated entities would be required to report emissions and surrender sufficient allowance to cover their verified emissions. Non-compliance could result in financial penalties, suspension from market participation, or other administrative sanctions, with penalties escalating for repeated violations.

As of early 2026, the Bolivian ETS remains at the legislative proposal stage. The draft law has been formally admitted into the legislative process and is under review by specialized committees. Following committee consideration, the bill will be debated and voted on in plenary session. If approved, it will then proceed to the second legislative chamber for a similar review before being sent to the Executive for promulgation.

EMISSIONS & TARGETS OF BOLIVIA

OVERALL GHG EMISSIONS (EXCL. LULUCF), **2022**

(in $MtCO_2e$, share of total in %)

Energy	21.1	42%
Industrial processes	3.2	6%
Agriculture	22.6	45%
Waste	3.1	6%
Total	**50.0**	

Energy industries	4.9	10%
Manufacturing industries and construction	2.1	4%
Transport	10.2	20%
Commercial, institutional, and residential	2.1	4%
Other energy	1.8	4%

GHG REDUCTION TARGETS

By 2030: Bolivia does not define a single economy-wide GHG reduction target. Instead, its NDC (2021 to 2030) sets sectoral mitigation targets.

OTHER INFORMATION

INSTITUTIONS INVOLVED

Ministry of Environment: Policy oversight and strategic supervision of the ETS framework.

Autoridad Nacional de Comercio de Emisiones (ANCE): Proposed independent ETS regulator (yet to be established), responsible for system administration, including cap-setting, allocation, registry operation, and compliance enforcement.

REGULATORY FRAMEWORK

→ Draft Law **PL-060/25** on the Regulation of the Market for Greenhouse Gas Emission Credits and Quotas (under legislative review)

BRAZIL

BRAZILIAN GREENHOUSE GAS EMISSIONS TRADING SYSTEM (SBCE)

- Extraordinary Secretariat designated to lead SBCE regulatory development under “Law No. 15,042/2024”
- Broad sectoral coverage, with agricultural sector exempted and forestry expected to generate offset credits
- First compliance obligations expected in five to six years

ETS DESCRIPTION

Law No. 15,042/2024 establishes the Brazilian Greenhouse Gas Emissions Trading System (*Sistema Brasileiro de Comércio de Emissões de Gases de Efeito Estufa*, SBCE). The SBCE aims to support the implementation of “Law No. 12,187 – Brazilian National Climate Change Policy” and the achievement of the country’s climate targets. The law lays out the governance framework and the legal foundation for obligations by covered entities, with key design elements (such as scope, cap, allocation, and MRV) to be determined in subsequent regulations currently under development.

The ETS will impose compliance obligations on entities emitting more than 25,000 tCO_2e per year, with reporting obligations applying to those emitting more than 10,000 tCO_2e per year. Covered entities will have to surrender allowances for all their covered emissions (see ‘Compliance Period’ section). In principle, all sectors are included under the legal framework, with the exception of agriculture, which is explicitly excluded from the SBCE's regulatory scope. The extent to which some sectors will see entities covered by the SBCE will depend on whether participation thresholds will apply to individual sources or, e.g., at company level, which is yet to be determined.

National Allocation Plans, published on a recurring basis, will define the cap trajectory, allocation methods, offset-use limits, and market-stability provisions. The cap must align with Brazil’s climate targets. Non-compliance may result in fines, embargoes, and other penalties. Covered entities may use domestic offset credits toward a share of their compliance obligation.

The system will be overseen by the Interministerial Climate Change Committee, and operated by the SBCE Management Body, which will be supported by a technical consultative body. In October 2025, “Decree No. 12,677” created an Extraordinary Secretariat for the Carbon Market within the Ministry of Finance, which will temporarily assume selected powers of the Management Body to accelerate regulatory development. The Secretariat is responsible for preparing regulations, including MRV rules, conformity assessment and accreditation procedures, developing and operating the Central Registry during the transition period, and coordinating international linkages and public consultations. It is organized into two sub-secretariats: Regulation and Methodologies, and Implementation.

In parallel, “Decree No. 12,678” created a Department of Market Instruments and REDD+ within the Ministry of Environment and Climate Change, which will provide technical guidance on carbon pricing instruments, support environmental integrity assessments for forestry-based credits, and advise and support Brazil’s Designated National Authority (DNA) for Article 6 as well as the Executive Secretariat of CONAREDD+ especially regarding the competencies foreseen in article 12, sole paragraph, item II, of Law No. 15,042/2024.

In force

Under development

Under consideration

GREENHOUSE GASES

CO_2, CH_4, N_2O, HFCs, SF_6, PFCs

OFFSET CREDITS

Domestic offset credits will be allowed, with quantitative limits

1 Aviation, transport, and maritime are subject to the regulation in principle. Whether or not these sectors will see entities covered by the ETS will depend on whether participation thresholds will apply to individual sources or, e.g., at company level, which is yet to be determined.

The implementation of the law will occur in five stages:

- Phase 1: government enacts regulations needed to implement the system (one to two years from the enactment of the SBCE Law).
- Phase 2: regulated entities operationalize emissions monitoring and reporting (one year after the end of Phase 1).
- Phase 3: regulated entities face monitoring and reporting obligations (two years after the end of Phase 2).
- Phase 4: implementation of the first national allocation plan, with free allowance allocation.
- Phase 5: full operationalization of the SBCE, following the end of the first national allocation plan.

EMISSIONS & TARGETS OF BRAZIL

OVERALL GHG EMISSIONS (including indirect CO_2, excluding LULUCF), **2022**
(in $MtCO_2e$, share of total in %)

Energy	418.5	34%
Industrial processes	102.3	8%
Agriculture	622.0	50%
Waste	90.8	7%
Total	**1,233.6**	

Energy industries	56.6	5%
Manufacturing industries and construction	69.1	6%
Transport	217.4	18%
Commercial, institutional, and residential	30.2	2%
Other energy	45.2	4%

GHG REDUCTION TARGETS

By 2030: 1.2 $GtCO_2e$ (53.1% below 2005) (NDC 2.0)
By 2035: Between 850 $MtCO_2e$ and 1.05 $GtCO_2e$ (NDC 3.0)
By 2050: Long-term objective to achieve climate neutrality by 2050 (NDC 2.0)

ETS COVERAGE & PHASES

SECTORS AND THRESHOLDS

INCLUSION THRESHOLDS: The SBCE will impose obligations on the operators responsible for installations and sources that emit:

- 10,000 tCO_2e/year for monitoring and reporting obligations; and
- 25,000 tCO_2e/year for compliance obligations.

Inclusion thresholds may be amended upwards by the SBCE management body. Obligations will apply only to activities for which consolidated MRV regulations are available.

POINT OF REGULATION

Point source

TYPE OF ENTITIES

Operators responsible for installations and sources that surpass the thresholds (see 'Sectors and Thresholds' section).

ALLOWANCE ALLOCATION & REVENUE

ALLOWANCE ALLOCATION

To be determined through the National Allocation Plan (NAP). The first NAP will be implemented on the basis of free allowance allocation. Auctioning may become possible in subsequent phases, insofar as it is established by regulation and provided for in future NAPs.

USE OF REVENUES

Climate mitigation

Assistance for individuals, households, and businesses

ETS revenues – such as from allowance auctions and non-compliance fees – are to be disbursed as follows:

- at least 15% for the operationalization and maintenance of the SBCE;
- at least 75% for the National Climate Change Fund, to support the financing of mitigation activities; and
- at least 5% for indigenous peoples and traditional communities to compensate them for forest preservation and ecosystem services.

FLEXIBILITY & LINKING

OFFSET CREDITS

QUALITATIVE LIMITS: Eligible activities are those that make use of methodologies accredited by the SBCE management body (to be determined); are measured and reported by those responsible for developing or implementing the project or program and verified by an independent entity, in accordance with the methodology accredited by the SBCE; and registered in the SBCE Central Registry. Once registered in the SBCE registry as Verified Emissions Reduction or Removal Certificates *(Certificado de Redução ou Remoção Verificada de Emissões - CRVE)*, the credits will become eligible for use under the SBCE.

CRVEs may be authorized for transfer under Article 6 of the Paris Agreement by the DNA. The new Department of Market Instruments and REDD+ will support the environmental integrity assessment and other functions related to the instruments established under Article 6.

The law affirms the rights of Indigenous Peoples and Traditional Communities regarding carbon crediting, including the right to commercialize credits generated on their lands, receive compensation for damages, and ensure benefit-sharing in accordance with future regulations.

QUANTITATIVE LIMITS: Quantitative limits for the use of CRVEs against compliance obligations will be determined as part of each National Allocation Plan.

COMPLIANCE

COMPLIANCE MECHANISM

Covered entities will have to surrender one allowance per tCO_2e emitted for all their covered emissions.

COMPLIANCE PERIOD

To be determined by the implementing regulation. As per the law, compliance must occur at the end of each compliance period or at shorter frequency as defined by the SBCE management body.

MRV

FRAMEWORK: Law No. 15,042/2024

MONITORING: From Phase 2 of the SBCE implementation, covered entities will have to submit a monitoring plan to the SBCE management body for approval. Rules for the establishment of monitoring plans will be developed in the 12 to 24 months following the approval of the bill introducing the ETS.

REPORTING: Operators will have to submit an annual report on GHG emissions and removals, adhering to the approved monitoring plan and specific guidelines set by the SBCE management body.

VERIFICATION: The report must undergo a conformity assessment by an accredited inspection body to ensure accuracy and compliance.

PENALTIES AND ENFORCEMENT

Non-compliance will be punishable by fines and activity embargoes, among other penalties. Fines will be limited to 3% of the gross revenue for legal entities (up to 4% in case of repeat offense). For other individuals, as well as for legal entities without revenue, the fine will range from BRL 50,000 (USD 8,949) to BRL 20 million (USD 3.58 million).

MARKET REGULATION

MARKET DESIGN

LEGAL STATUS OF ALLOWANCES: Allowances and CRVEs, when traded on financial and capital markets, are securities *(valores mobiliários)* subject to relevant laws and to the Brazilian Securities and Exchange Commission *(Comissão de Valores Mobiliários – CVM)*.

OTHER INFORMATION

INSTITUTIONS INVOLVED

Interministerial Climate Change Committee: Provides overarching strategic direction and coordination for climate-related policies. Responsible for issuing general guidance for the SBCE and approving major regulatory decisions, such as the National Allocation Plans.

SBCE management body (to be formally constituted): Permanent implementing authority defined in Law No. 15.042/2024. Responsible for proposing the cap through the National Allocation Plans, overseeing allowance allocation, receiving and reviewing emissions reports, managing the registry, setting compliance procedures, and enforcing obligations.

Extraordinary Secretariat for the Carbon Market (Ministry of Finance): Created by Decree No. 12,677/2025 as a transitional body to advance regulatory development until the Management Body is fully established. Leads the preparation of MRV rules, accreditation and conformity-assessment procedures, registry design and early operation, technical cooperation, and public consultations.

Permanent Consulting Technical Committee: Advisory body responsible for providing technical inputs and recommendations to improve the SBCE's design, implementation, and updates to regulations. Includes a Regulatory Affairs Chamber, composed of representatives from regulated sectors and other stakeholders, to ensure structured consultation and sectoral engagement

Department of Market Instruments and REDD+ (Ministry of Environment and Climate Change): Supports the environmental integrity assessment of forestry-based credits, contributes to guidelines on carbon pricing instruments, assists the SBCE executive bodies on land-use crediting, and provides technical support to Brazil's Article 6 Designated National Authority.

REGULATORY FRAMEWORK

→ **Law 15042/2024 establishing the SBCE**
→ **Decree No. 12,677/2025**
→ **Decree No. 12,678/2025/**

CHILE

- "Framework Law on Climate Change" includes provisions for a system of GHG emissions limits
- Energy Sector Mitigation and Adaptation Plan foresees a pilot ETS for the energy sector
- NDC 3.0 proposes a gradual increase of carbon tax for electricity and improvement of carbon taxation elsewhere, acknowledges carbon markets

ETS DESCRIPTION

In June 2022, Chile enacted its Framework Law on Climate Change, which sets a 2050 carbon neutrality goal and describes the national, regional, and local climate policies that Chile will implement to achieve it. These include its NDC, the Long-Term Climate Strategy, the "Climate Change Financial Strategy", and sectoral mitigation and adaptation plans.

Article 14 of the law mandates the Ministry of Environment to specify GHG emissions limits, set by technology, sector, or activity. GHG emissions limits may be set as emissions benchmarks for individual installations or in aggregate, for a group of installations or a sector. If set in aggregate, GHG emissions limits could be akin to a cap. According to Article 15, installations that perform better than their benchmark will have their surplus emissions reductions certified, which may then be used by other regulated entities for compliance with their respective emissions limits.

The Framework Law establishes key elements that could enable an ETS, such as the possibility of setting sector-wide caps. However, further regulatory and legal definitions are still required to determine whether the system will function as an ETS or as a tradable performance standard.

The "Rules for the Development of GHG Emissions Standards and Short-Lived Climate Pollutant Limits" (DS N° 12/2025) was approved in March 2024 by Chile's Council of Ministers for Sustainability and Climate Change and published in July 2025. The document defines procedures and design features of the emission limits to be developed under the Framework Law. The emissions limits system is currently under development. In December 2025, the Ministry of Environment launched the process to draft the preliminary proposals for the hydrofluorocarbon and methane emission limits.

At COP 30, the Ministry of the Environment launched a "Roadmap for Carbon Pricing and Market Instruments", marking a key milestone in strengthening the articulation between these instruments, national climate action, and international cooperation.

Article 37 of the Law provides a basis for the development of market-based, fiscal, and financial instruments to address the negative impacts of GHG emissions. The "Sectoral Plan for Mitigation and Adaptation to Climate Change in Energy" sets the commitment to design a pilot ETS for the energy sector and is expected to begin implementation between 2026 and 2027, with initial participation on a voluntary basis. The pilot design aims to consider key ETS components, including scope, cap, allocation, MRV, transactions, and governance. The purpose of this exercise is to enable hands-on capacity building on emissions trading, engage government and regulated entities in ETS functioning and gather evidence to decide on escalating cap and trade implementation. Work is supported by the World Bank's Partnership for Market Implementation (PMI).

Since 2017, Chile has applied an explicit carbon tax "green tax" that consists of two main components: a tax on new light-duty vehicles and a tax on stationary sources, mainly affecting power-sector and large industrial facilities. As noted in the 2025 NDC 3.0, Chile has committed to progressively increase all carbon-related taxes, with the electricity sector carbon tax to be aligned with the updated Social Cost of Carbon and be incorporated into the marginal cost (electricity dispatch).

EMISSIONS & TARGETS OF CHILE

OVERALL GHG EMISSIONS (including indirect CO_2, excluding LULUCF), 2022

(in $MtCO_2e$, share of total in %)

Energy	84.8	76%
Industrial processes	8.1	7%
Agriculture	9.2	8%
Waste	8.9	8%
Total	**111.0**	

Energy industries	29.0	26%
Manufacturing industries and construction	16.4	15%
Transport	30.0	27%
Commercial, institutional, and residential	7.5	7%
Other energy	1.9	2%

GHG REDUCTION TARGETS

By 2025: Peak GHG emissions and reverse the trend of national methane emissions (NDC 3.0)

By 2030: Peak GHG emissions from the transport sector, source at least 80% of electricity from renewable sources, and a national carbon budget of 1,100 $MtCO_2e$ for 2020 to 2030. (NDC 3.0)

By 2035: Limit national GHG emissions to no more than 90 $MtCO_2e$ in 2035 and total emissions between 2031 and 2035 within a maximum carbon budget of 480 $MtCO_2e$. Methane emissions to decline by at least 10% relative to the maximum level projected for 2025, and black carbon emissions below 70% of 2016 levels. (NDC 3.0)

By 2050: Climate neutrality (Framework Law on Climate Change)

FLEXIBILITY & LINKING

OFFSET CREDITS

Article 14 of the Framework Law on Climate Change stipulates that emissions reduction or removal certificates from projects implemented within Chile may be used for compliance with the emissions standards defined in Articles 14 and 15 of the law. The "Rules for the Development of GHG Emissions Standards and Short-Lived Climate Pollutant Limits" specify that entities may use emissions reductions or removal certificates to meet their compliance obligation for up to a limit set by each standard. The regulation underwent public consultation in 2024 and is currently under review by the Comptroller General of the Republic. It specifies the rules and procedures to verify and approve GHG emission or short-lived climate pollutant reduction or absorption projects, as well as to generate credits from reductions, absorptions or excess in compliance with the standards.

The government has also developed a National Registry of Mitigation Actions (Registro Nacional de Acciones de Mitigación – RENAMI), which will serve as the national platform for registering mitigation activities and is expected to play a central role in the future compensation system under Articles 14 and 15, as well as in Chile's participation in cooperative approaches under Article 6 of the Paris Agreement.

OTHER CARBON PRICING INSTRUMENTS IN THE JURISDICTION

Carbon tax: Chile Green Tax

Domestic offsetting mechanisms: Chile Green Tax Emissions Offsetting Scheme

COMPLIANCE

MRV

FRAMEWORK: The Framework Law on Climate Change requires mandatory monitoring, reporting, and verification for entities subject to emissions limits. For the Green Tax, Supreme Decree 63/2023 establishes annual MRV obligations.

MONITORING: The current GHG MRV system primarily serves the implementation of the green tax. Facilities must quantify their annual CO_2 and PM emissions through direct measurement (CEMS) or through calculation using approved emission factors. Monitoring obligations apply to establishments emitting ≥12,500 tCO_2/year or ≥50 tonnes of PM/year from combustion processes.

REPORTING: Reporting follows the "Reporting Instructions" issued by the Ministry of Environment (MMA) and must include activity data, measurement results, and methodological documentation. Data must be submitted quarterly to the Superintendency of the Environment (SMA), and it is consolidated in the first quarter of the following year.

VERIFICATION: While third-party verification is not currently used, the green tax MRV rules (DS 63/2023) require emissions data to undergo validation and verification by the SMA, which can be supported by accredited auditing entities whose accreditation is overseen by the SMA. Verification frequency is annual, corresponding to each fiscal period. Future Article 14 and 15 emission limit rules are also required to include verification procedures, supervised by the SMA, and will follow the same legal basis for auditor accreditation.

OTHER INFORMATION

INSTITUTIONS INVOLVED

Ministry of Finance: Responsible for designing, implementing, revising and updating the carbon tax, including alignment with the Social Cost of Carbon and broader fiscal reforms affecting carbon-related taxation.

Ministry of Environment: Responsible for implementing the Framework Law on Climate Change and its instruments, as well as the emissions compensation system, and is the designated national authority and national focal point for Article 6 of the Paris Agreement. In particular, it oversees the development and implementation of the systems established in Articles 14 and 15 of the Framework Law, including emission standards, compensation mechanisms, MRV protocols, and the national registry of mitigation actions and certificates. It also leads the Roadmap for Carbon Pricing and Market Instruments.

Ministry of Energy: Leads the development and implementation of the Energy Policy 2050, the Energy Decarbonization Plan, and the Sectoral Mitigation and Adaptation Plan under the Framework Law. It is responsible for the mitigation actions for the energy sector, including designing and implementing the pilot ETS for the energy sector.

Ministry of Foreign Affairs: Coordination of the negotiation processes and signing of implementation agreements associated with Article 6 of the Paris Agreement.

Ministry of Agriculture: Leads discussions on carbon credits in the non-energy sector, specifically LULUCF and Nature-Based Solutions.

Council of Ministers for Sustainability and Climate Change: Reviews and approves key climate-related regulations, including those under Articles 14 and 15, sectoral mitigation and adaptation plans, and advises the President, and coordinates cross-ministerial climate policy.

REGULATORY FRAMEWORK

- → Framework Law on Climate Change
- → NDC 3.0 - 2025 update
- → Supreme Decree N° 12/2025 Rules for the Development of GHG Emissions and Short-Lived Climate Pollutant Limits
- → Draft Rules for the Emissions Compensation System of GHG Emissions Standards and Short-Lived Climate Pollutant Limits
- → Supreme Decree N° 32/2024
- → Energy Policy for 2050
- → Supreme Decree N°4/2023 - Regulation of Projects for The Reduction of Pollutant Emissions to Offset Taxable Emissions Pursuant to Article 8 of Law No. 20.780

COLOMBIA

NATIONAL PROGRAM OF TRADABLE GREENHOUSE GAS EMISSION QUOTAS

- Climate Change Law outlines basic provisions for the establishment of an ETS
- First or preliminary phase expected to start in 2027
- Full ETS implementation targeted for 2030

ETS DESCRIPTION

In 2018, Colombia adopted a law for climate change management ("Climate Change Law", *Ley de Cambio Climático*), which outlines basic provisions for the establishment of an ETS, or the "National Program of Tradable GHG Emission Quotas" (*Programa Nacional de Cupos Transables de Emisión de Gases de Efecto Invernadero* – PNCTE). Non-compliance is to be punishable by a fine of up to double the auction price.

Auction revenues, as updated by Article 262 of Law 2294 of 2023, will now be allocated to the "Fund for Life and Biodiversity" (formerly the "Fund for Sustainability and Climate Resilience"). These resources are designated for purposes set by the national carbon tax, as well as for administering the PNCTE and the Mandatory Emissions Report under Law 2169 of 2021 (the "Climate Action Law", *Ley de Acción Climática*).

The Climate Change Law also includes crediting provisions: voluntary actions of non-regulated entities that generate GHG emissions reductions or removals may be issued allowances if they are verified, certified, and registered in the National Emission Reductions Registry (*Registro nacional de reducción de emisiones de GEI* – Renare), and deemed eligible for the program.

Following the 2024 public consultation, the PNCTE regulatory framework remained under development in 2025. A first or preliminary phase is expected to start in 2027, and full implementation of the system is planned for 2030. Auctioning is expected to be the main allocation method, with the auction reference price aligned with the national carbon tax rate. The cap is to be set annually by the Ministry of Environment and Sustainable Development (MinAmbiente), in line with Colombia's NDC.

The 2021 Climate Action Law sets a goal to fully implement the ETS by 2030, as well as an obligation for legal persons to report direct and indirect GHG emissions, following criteria to be set by Minambiente.

Colombia is exploring how the PNCTE could interact with the existing national carbon tax and potential Article 6 international cooperation, but final arrangements for that interaction are still being defined.

EMISSIONS & TARGETS OF COLOMBIA

OVERALL GHG EMISSIONS (GHG EMISSIONS EXCL. LULUCF), 2021

(in $MtCO_2e$, share of total in %)

Energy	91.6	50%
Industrial processes	11.7	6%
Agriculture	58	31%
Waste	22.2	12%
Total	**183.5**	

Energy industries	19.6	11%
Manufacturing industries and construction	13.5	7%
Transport	42.2	23%
Commercial, institutional, and residential	7.5	4%
Other energy	8.8	5%

GHG REDUCTION TARGETS

By 2030: Maximum GHG emissions of 169.44 $MtCO_2e$; 40% reduction of black carbon emissions compared to 2014 (NDC 2.0)

By 2050: Carbon neutrality (Climate Action Law 2021)

ETS COVERAGE & PHASES

FIRST OR PRELIMINARY PHASE (EXPECTED TO START IN 2027):

This phase is expected to test the general and operational rules of the PNCTE, generate information to evaluate its structure and operation, and identify opportunities for improvement.

The system is expected to move toward full operation by 2030.

FLEXIBILITY & LINKING

BANKING AND BORROWING

Banking is allowed within the same implementation phase.

OFFSET CREDITS

QUANTITATIVE LIMITS: According to the public draft Decree, Minambiente may allocate up to 10% of the cap in each compliance period to reduction or removal activities. As of January 2026, the government is still working on the draft decree following the public consultation.

LINKS WITH OTHER SYSTEMS

The PNCTE is not linked with any other system. The Colombia carbon tax rate serves a reference price for future auctions.

OTHER CARBON PRICING INSTRUMENTS IN THE JURISDICTION

Carbon Tax: Colombia carbon tax

Domestic crediting mechanism: Colombia crediting mechanism (carbon tax exemption mechanism)

COMPLIANCE

COMPLIANCE MECHANISM

Covered entities must surrender one allowance for every tCO_2e emitted for all their covered emissions.

COMPLIANCE PERIOD

One year.

MARKET REGULATION

MARKET DESIGN

LEGAL STATUS OF ALLOWANCES:

Article 29 of the 2018 Climate Change Law defines an emissions allowance as a tradeable right that gives its holder the authorization to emit a tonne of CO_2e into the atmosphere.

MARKET STABILITY PROVISIONS

PRICE STABILIZATION RESERVE

Instrument type: Quantity-based instrument (predominantly)

Functioning: Minambiente may create and reserve a percentage of the allowances of a given compliance period, as a means to stabilize or control allowance prices.

REFERENCE AUCTION PRICE

Instrument type: Price-based instrument

Functioning: The starting price of allowances for the auction may take into account the carbon tax rate. Minambiente may define a starting auction price.

OTHER INFORMATION

INSTITUTIONS INVOLVED

Ministry of Environment and Sustainable Development (Minambiente): Responsible for defining national environmental policy and promoting the recovery, conservation, protection, ordering, management, use and exploitation of renewable natural resources.

Department of National Planning: Entity of the national government that coordinates, articulates, and supports Colombia's short-, medium-, and long-term planning and guides the cycle of public policies and the prioritization of investment resources.

Ministry of Finance: Coordinates macroeconomic policy; defines, formulates, and executes the fiscal policy of the country; and manages the nation's public resources from the budgetary and financial perspective.

National Climate Change System (SISCLIMA): A set of state, private, and non-profit entities, policies, standards, processes, resources, plans, strategies, instruments, mechanisms, and information related to climate change applied to manage the mitigation of GHGs and adaptation to climate change in the country.

REGULATORY FRAMEWORK

→ **Climate Change Law (Ley 1931 de 2018: Ley de Cambio Climático)**
→ **Climate Action Law (Ley 2169 de 2021: Ley de Acción Climática)**
→ **Public consultation on the Decree Project to Regulate the PNCTE**

DOMINICAN REPUBLIC

- ETS Roadmap completed (2020) and pilot design in progress with RCC Caribbean
- Draft design for pilot ETS under review by CNCCMC
- Simulation exercise conducted with stakeholders in November 2023

In force

Under development

Under consideration

ETS DESCRIPTION

The Dominican Republic, through the National Council for Climate Change and Carbon Market (CNCCMC) and in collaboration with the RCC Caribbean, has achieved significant milestones under the Collaborative Instruments for Ambitious Climate Action (CIACA) initiative for carbon pricing evaluation and implementation. This effort was incorporated into the Dominican Republic's 2020 NDC, as an element that will contribute to the development of mitigation actions supported by national and international technical assistance aligning with the updated NDC.

One key achievement was the creation of a Roadmap for Designing an Emissions Trading System (ETS) in the Dominican Republic in 2020, followed by a simulation exercise involving key national stakeholders in November 2023.

Building on the roadmap's recommendations, the CIACA initiative has supported the CNCCMC in designing a pilot ETS. In 2024, RCC Caribbean published terms of reference for consultancy services to support the pilot ETS design. The pilot design includes activities to:

- define emissions, sectors, and facilities to be included, and establish a cap aligned with national climate goals;
- design an allowance allocation process and consider an offset framework;
- develop compliance mechanisms and ensure stakeholder participation;
- prepare a report summarizing design choices, impacts, and implementation considerations.

The RCC Caribbean supported CNCCMC in developing technical inputs for the pilot ETS design, including draft legal text, sectoral coverage options, allocation scenarios, and institutional arrangements. These activities were completed as part of CIACA's 2024 and 2025 work program.

In 2024 and 2025, CNCCMC and RCC Caribbean advanced the design of a pilot ETS, including exploring potential coverage options, allocation approaches, and regulatory considerations. However, no draft decree establishing the pilot has been publicly released as of January 2026.

The pilot ETS design is being assessed for potential alignment with the country's broader climate policy instruments and reporting systems.

EMISSIONS & TARGETS OF THE DOMINICAN REPUBLIC

OVERALL GHG EMISSIONS (including indirect CO_2, excluding LULUCF), **2022**

(in $MtCO_2e$, share of total in %)

Energy	28.7	62%
Industrial processes	5.1	11%
Agriculture	7.4	16%
Waste	5.2	11%
Total	**46.3**	**100%**

Energy industries	15.7	34%
Manufacturing industries and construction	3.1	7%
Transport	7.4	16%
Commercial, institutional, and residential	1.7	4%
Other energy	0.8	2%

GHG REDUCTION TARGETS

By 2030: 20% conditional reduction from the BAU scenario of 51 $MtCO_2e$ by 2030 and a 7% unconditional reduction through domestic resources, divided into 5% from the private sector and 2% from the public sector (2022 NDC).

OTHER INFORMATION

INSTITUTIONS INVOLVED

The National Council for Climate Change and Carbon Market (CNCCMC): Coordinates and unifies efforts from various institutions across the country's development sectors to address climate change. It coordinates the national MRV System and the national GHG Inventory.

The ETS pilot work is coordinated by CNCCMC, with technical support from RCC Caribbean and other international partners (UNDP, UNEP, PMI).

REGULATORY FRAMEWORK

- → **NDC-RD 2020, Dominican Republic Nationally Determined Contribution**
- → **Decree No. 348-21 amending Article 1 of Decree No. 601-08, creating and integrating the National Council for Climate Change and the Clean Development Mechanism**
- → **Decree 269-15, National Climate Change Policy**
- → **Biennial Transparency Report and Fourth National Communication**

MEXICO

MEXICO EMISSIONS TRADING SYSTEM

- First ETS in operation in Latin America
- Pilot phase started in 2020, with 2022 as a transition year to the operational phase
- Pilot regulation remains in force until the operational phase regulation is published

ETS DESCRIPTION

The Mexico ETS, the first in Latin America, started its pilot phase in January 2020. It covers direct CO_2 emissions from fixed sources in the energy and industry sectors emitting at least 100,000 tCO_2 per year, representing around 30% of national GHG emissions and 90% of emissions reported in the National Emissions Registry (RENE)[2]. Under the Mexico ETS, covered entities must surrender allowances for all their covered emissions. Allowances are allocated through grandparenting based on historical emissions, which are verified annually. The level of free allocation is expected to be reduced from the first year of the operational phase, anticipated to begin in 2026.

The Mexican ETS started with a Pilot Program with two phases: a pilot phase between 2020 and 2021, and a transition phase in 2022. The Pilot Program aimed to test system design, contribute to the NDC 3.0 and other national mitigation goals, enhance the quality of emissions data, and build capacity in emissions trading, ultimately improving the design of the operational phase.

The regulation of the Pilot Program ("the Agreement on the establishment of the preliminary basis of the Pilot Program of the Emissions Trading System") remains in force until the regulation for the operational phase is published.

YEAR IN REVIEW

In 2025, the sixth compliance year concluded. 88% of participants presented a positive verification report to the Ministry of Environment and Natural Resources (*Secretaría de Medio Ambiente y Recursos Naturales*, or SEMARNAT) for their 2024 emissions, and 86% complied with their surrender obligations. Between March and June 2025, participants verified their 2024 emissions.

In March 2025, SEMARNAT was restructured. This restructure created the Undersecretary for Sustainable Development and Circular Economy (*Subsecretaría de Desarrollo Sostenible y Economía Circular*), in charge of, among other things, the coordination and operation of the ETS.

In August, the first ordinary meeting of the Consultative Committee of the Emissions Trading System (COCOSCE) took place. The meeting discussed the regulation for the first operational phase of the ETS, as well as allowance allocation, obligations of the electricity sector, offsets and legal aspects.

In September, the government published the 2025 to 2030 Sectoral Program of Environment and Natural Resources. Its line of action 4.1.3 includes putting into operation the first phase of the ETS and guaranteeing the effective operation of the voluntary carbon market, as well as the alignment with other carbon pricing instruments.

1 The Ministry of Environment and Natural Resources is in the process of establishing a domestic offsetting program.
2 According to SEMARNAT.

In force
Under development
Under consideration

SECTORS

MINING AND EXTRACTIVES
POWER
INDUSTRY

CAP OR TOTAL EMISSIONS LIMIT

Absolute cap
273.1 $MtCO_2$ (2021)

GREENHOUSE GASES

CO_2

OFFSET CREDITS

Domestic with quantitative limits[1]

ALLOCATION

Free Allocation: Grandparenting

AVERAGE 2025 PRICES

Secondary market: MXN 0 (USD 0)

In November 2025, the Intersecretarial Commission of Climate Change approved Mexico's NDC 3.0, which was later presented during COP30. The NDC 3.0 sets an unconditional emissions cap of between 364 $MtCO_2e$ and 404 $MtCO_2e$ by 2035, and a conditional goal of between 332 $MtCO_2e$ and 363 $MtCO_2e$ by 2035.

EMISSIONS & TARGETS OF MEXICO

OVERALL GHG EMISSIONS (including indirect CO_2, excluding LULUCF), 2024

(in $MtCO_2e$, share of total in %) (preliminary)[3]

Energy	476.9	63%
Industrial processes	77.5	10%
Agriculture, forestry, and other land use[4]	133.3	18%
Waste	69.0	9%
Total	**756.7**	

Energy industries	173.3	23%
Manufacturing industries and construction	61.8	8%
Transport	169.5	22%
Commercial, institutional, and residential	34.6	5%
Other energy	37.6	5%

GHG REDUCTION TARGETS

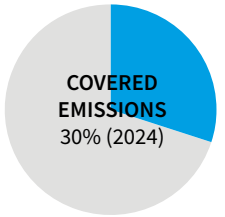
By 2030: Unconditional 35% below BAU GHG emissions baseline (NDC 2.0)

By 2035: Unconditional emissions cap of between 364 $MtCO_2e$ and 404 $MtCO_2e$. Conditional goal of between 332 $MtCO_2e$ and 363 $MtCO_2e$. Both options reflect an approximate 583 $MtCO_2e$ reduction from current levels. (NDC 3.0)

By 2050: Net zero emissions (NDC 3.0)

ETS COVERAGE & PHASES

COVERED EMISSIONS 2024



PHASES

PILOT PHASE: Two years (2020 and 2021)
TRANSITIONAL PHASE: One year (2022)
OPERATIONAL PHASE: From 2025 onwards

CAP OR TOTAL EMISSIONS LIMIT

An absolute cap limits the total emissions allowed in the system and is fixed ex-ante.

PILOT PROGRAM:
2020: 271.3 $MtCO_2$
2021: 273.1 $MtCO_2$[5]

Three reserves are filled each year with allowances additional to the cap:

- auctions reserve (equivalent to 5% of the cap, for regular auctions, which have not yet happened);
- new entrants' reserve (equivalent to 10% of the cap, for new entrants as well as increases in production among existing regulated entities); and
- general reserve (equivalent to 5% of the cap, for ex-post adjustment allocation for entities with higher emissions relative to their baselines).

The reserves function as safeguards to avoid economic impacts on regulated entities during the Pilot phase, as required by the 2018 "General Law on Climate Change".

SECTORS AND THRESHOLDS

PILOT PROGRAM: The Pilot ETS covered the energy and industrial sectors. The energy sector encompasses electricity generation, transmission, and distribution, as well as fossil fuel extraction, production, transport, and distribution.

The industrial sector includes automobile manufacturing, cement, lime, chemicals, food and beverages, glass, iron and steel, metals, mining, petrochemicals, and pulp and paper, as well as other industrial sub-sectors generating direct CO_2 emissions from stationary sources at or above the threshold.

3 Source: **https://www.gob.mx/cms/uploads/attachment/file/1031246/INEGyCEI_1990-2024_Dif_221025.xlsx**
4 Mexico uses the sectors defined in the latest IPCC guidelines (2006 IPCC Guidelines for National Greenhouse Gas Inventories) for the preparation of its inventory, in which the Agriculture and the LULUCF sectors are integrated into "Agriculture, Forestry and Other Land Use". In an effort to make the display of overall GHG emissions comparable with other jurisdictions, the figure shown here excludes the categories "3B Land" and "3D1 Products of collected wood" but includes the categories "3A Livestock" and "3C Aggregate sources and non-CO_2 emissions sources on land".
5 The increase in the cap between 2020 and 2021 is due to an extension in the sectoral allocation for regulated entities categorized as "others".

Inclusion thresholds: The Pilot ETS covers installations with annual direct emissions from stationary sources amounting to at least 100,000 tCO_2.

OPERATIONAL PHASE: Sectors and thresholds are not expected to change during the operational phase.

POINT OF REGULATION
Point source (all sectors)

TYPE OF ENTITIES
Installations

NUMBER OF ENTITIES
300 (2025)[6]

ALLOWANCE ALLOCATION & REVENUE

ALLOWANCE ALLOCATION
PILOT PROGRAM: The Pilot featured free allocation with the following specifications:

Initial allocation: Entities receive free allowances equivalent to 100% of their most recent verified emissions. New entrants receive free allowances based on their verified emissions in the year in which they first crossed the 100,000 tCO_2 threshold. For participants that have not yet verified their emissions, initial allocation is done based on their historical emissions as reported to RENE.

Ex-post adjustment: An adjustment allocation is carried out from the general reserve for those participants that did not receive a quantity of free allowances equivalent to their verified emissions.

Participants may request additional allowances when an expansion in their production results in additional direct CO_2 emissions from stationary sources.

Plant closures: When an installation closes permanently, it may have to surrender the allowances that it has for the compliance period of the year before its closure. As well, it should return the free allowances received for the compliance period in which it closes. Whether the installation must only surrender allowances, return allowances, or both, depends on the date of the year in which it closes. SEMARNAT then cancels these allowances.

Auctions: SEMARNAT may auction allowances from the auction reserve. As of December 2025, no auctions have taken place.

OPERATIONAL PHASE: Free allocation is expected to be reduced from the beginning of the operational phase. SEMARNAT is in the process of developing the auctioning mechanism.

USE OF REVENUES
SEMARNAT is developing institutional arrangements to manage revenues during the operational phase.

FLEXIBILITY & LINKING

BANKING AND BORROWING
Allowances allocated during the Pilot will not be eligible for banking into the operational phase. For the operational phase, banking will be allowed between phases and compliance years.

Although the possibility of borrowing is not explicitly stated, surrender of allowances for a given compliance period is done after allocation of allowances for the subsequent compliance period takes place.

OFFSET CREDITS
The use of offset credits will be allowed in the operational phase.

QUALITATIVE LIMITS: Two types of flexibility instruments are foreseen, both of which will generate offset credits eligible for use under the ETS: offset credits and early action.

Offset credits: SEMARNAT will establish a domestic program for the generation of offset credits that can be surrendered for compliance. Domestic projects that have been validated and verified under internationally or domestically recognized protocols will be eligible. Emission reductions related to all GHGs will be eligible, except for those related to direct CO_2 emissions.

Early action: Offset credits generated by mitigation projects operating in Mexico under recognized protocols before the pilot came into force (2020) can be eligible for use in the ETS. SEMARNAT issues offset credits only if a certificate of cancellation is presented and if they were not used for other compliance purposes. These projects will be expected to continue generating offset credits during the operational phase.

QUANTITATIVE LIMITS: Participants can meet up to 10% of their compliance obligations with offset or early action credits.

SEMARNAT is currently working on the regulations to implement the offset and early action provisions in the Pilot ETS. The eligibility rules for the use of offset credits within the ETS are being developed based on a mapping of activities and projects that could be used for this purpose.

6 According to SEMARNAT.

Articles 89 and 90 of the General Law of Climate Change provide the general framework for the registry of mitigation outcomes, whereas articles 26 to 29 of the RENE regulation provide additional specifications on the projects that can be registered, such as the procedure for registration and basic information on which certificates from international registries are to be accepted.

LINKS WITH OTHER SYSTEMS

The Mexico ETS is not linked with any other system. However, the General Law of Climate Change provides for linkages with other systems.

OTHER CARBON PRICING INSTRUMENTS IN THE JURISDICTION

Carbon tax: National carbon tax.
Carbon taxes (state level): Colima, Durango, Guanajuato, Mexico City, Morelos, Querétaro, San Luis Potosí, State of Mexico, Tamaulipas, Yucatán, Zacatecas.

COMPLIANCE

COMPLIANCE MECHANISM

Covered entities must surrender one allowance per tCO_2 emitted for all their covered emissions.

COMPLIANCE PERIOD

One calendar year. SEMARNAT is evaluating the surrender date of allowances based on the experience obtained during the Pilot.

MRV

FRAMEWORK: Articles 87 and 88 of the General Law of Climate Change provide the general framework for GHG reporting to RENE.

Verified annual CO_2 emissions are reported both to the RENE (in addition to other obligations that regulated entities must report to the RENE) and to the ETS registry.

A monitoring plan is expected to be required in the operational phase from all regulated entities as a part of their obligations.

MONITORING: Under RENE, emitters with annual emissions of at least 25,000 tCO_2 in the energy, industrial, transport, agricultural, waste, commercial, and services sectors are required to report the six key GHGs identified by UNFCCC, as well as black carbon, chlorofluorocarbons (CFCs), hydrochlorofluorocarbons (HCFCs), halogenated ethers, halocarbons, and their mixes.

REPORTING: Annual self-reporting based on electronic templates prepared by SEMARNAT. Reporting is done electronically through the Annual Operating Statement (*Cédula de Operación Anual*).

VERIFICATION: Verification by independent accredited verifiers is required by the end of June of the subsequent year.

Reporting and verification should be made according to the criteria and procedures of the RENE[7]. Verification bodies need to be accredited to the Mexican Accreditation Entity and approved by the Federal Environmental Protection Agency (*Procuraduría Federal de Protección al Ambiente*). Verification organisms need to comply with the standards ISO 14065 (requirements for organizations conducting verification), ISO 14064-3 (verification and validation of GHG reports) and ISO 14066 (competence requirements for GHG validation teams and verification teams).

PENALTIES AND ENFORCEMENT

The Pilot Program is designed to pose no economic impact on regulated entities; however, non-compliant entities lose the opportunity to bank unused allowances into subsequent compliance periods within the pilot and will receive fewer allowances in the first allocation of the operational phase of the ETS (two fewer allowances for each non-delivered allowance during the pilot).

Sanctions are expected to be implemented in the operational phase of the ETS.

MARKET REGULATION

MARKET DESIGN

MARKET PARTICIPATION: Under the pilot rules, market participation is limited to compliance entities and those that provide offset credits. SEMARNAT is designing and developing the process and rules to allow participants without obligations.

MARKET TYPES:
Primary: As of the end of 2025, there had been no auctions in the Mexican ETS pilot. SEMARNAT is preparing institutional arrangements to implement auctions during the operational phase.

Secondary: There is no exchange that trades allowances. As of the end of 2025, transactions can only take place via negotiation between participants.

LEGAL STATUS OF ALLOWANCES: Allowances in the Mexican ETS Pilot are “administrative instruments” and are not considered financial instruments. They are expected to remain as such in the operational phase.

MARKET STABILITY PROVISIONS

None

7 According to SEMARNAT.

OTHER INFORMATION

INSTITUTIONS INVOLVED

SEMARNAT: Ministry in charge of implementing the ETS.
COCOSCE: Formal technical forum for consultation, orientation, social participation, and advice for the Pilot ETS. Its members are representatives from SEMARNAT as well as the ministries of Finance, Energy, and Economy; a representative from the National Institute of Ecology and Climate Change; a representative of the Confederation of Industrial Chambers; a representative from the Coordinating Business Council; and representatives of the regulated sectors.

EVALUATION/ETS REVIEW

Article 10 of the Agreement on the establishment of the preliminary basis of the Pilot Program provided for SEMARNAT to annually review the Pilot, publishing reports on topics such as price behavior and emissions reductions achieved. SEMARNAT developed an internal evaluation on the ETS´s components during the Pilot, in order to improve and update the regulation of the operational phase. Moreover, an evaluation of the Pilot, supported by the COCOSCE, has been conducted to determine if adjustments to the ETS design are necessary.

COCOSCE's working groups have developed different recommendations to the Federal Government on the cap and allocation methods, offset credits, as well as key topics on the energy sector and legal recommendations.

REGULATORY FRAMEWORK

- → General Law of Climate Change
- → Agreement on the establishment of the preliminary basis of the Pilot Program of the Emissions Trading System (implementing regulation of the pilot)
- → Regulation of the General Law of Climate Change on the National Emissions Register
- → Notice on the cap for the years 2020 and 2021
- → Notice on the reserve and sectoral allocation of allowances for the years 2020 and 2021
- → Mexico Emissions Trading System Website
- → Update to the National Strategy on Climate Change
- → Strategy of Sustainable Finance Mobilization of the Ministry of Finance
- → General Organization Manual of SEMARNAT

03 FACTSHEETS

Asia-Pacific

AUSTRALIA

SAFEGUARD MECHANISM

- Reforms to the Safeguard Mechanism commenced on July 1, 2023
- Intensity-based system, regulating the largest industrial facilities
- Facility-level baselines reduce by 4.9% per year to 2030

ETS DESCRIPTION

The Safeguard Mechanism assigns mandatory facility-level emissions baselines for over 200 large facilities in Australia. It applies to all facilities that emit more than 100,000 tonnes CO_2e of covered emissions in a financial year. Covered entities must surrender credits for emissions that exceed the installation's annual emissions limit (baseline), which is set using an emissions intensity framework.

Facilities emitting above their baseline must offset excess emissions by surrendering Safeguard Mechanism Credits (SMCs) or Australian Carbon Credit Units (ACCUs). In some cases, facilities can also apply to average their emissions over a longer period, reduce their baseline decline rate if eligibility criteria are met, or borrow from their baseline from a future year.

The Safeguard Mechanism was introduced in 2016 but had not been classified as a baseline-and-credit system as no tradeable permits were issued. However, following legislative changes passed in March 2023 which took effect as of July 2023, the government is able to issue SMCs to facilities that over-achieve on their baseline. This reform was accompanied by a tightening of baselines and a default decline rate of 4.9% per year, to align the outcome with Australia's 2030 targets and pave the way towards carbon neutrality by 2050. This in effect turned the Safeguard Mechanism into a baseline-and-credit system.

YEAR IN REVIEW

FY2024 was the first full compliance year under the reformed Safeguard Mechanism. Australia's Clean Energy Regulator (CER) issued the first SMCs in February 2025, following emissions reporting for FY2024.

In April 2025, the CER published comprehensive compliance data for FY2024. Of the 219 facilities that were assigned baselines under the Safeguard Mechanism, 62 received a total of 8.3 million SMCs for emissions performance below their baselines, while 7.1 million ACCUs and 1.4 million SMCs were surrendered to meet compliance obligations. The compliance rate was 98%. Covered emissions decreased from 138.7 $MtCO_2e$ in FY2023 to 135.9 $MtCO_2e$ in FY2024, representing a reduction of 2.7 Mt (~1.9%).

1 Default prescribed unit price for FY2025, as published by DCCEEW. It reflects average market prices of both eligible compliance units under the Safeguard Mechanism (Safeguard Mechanism Credits and Australian Carbon Credit Units).

In force
Under development
Under consideration

SECTORS

- MINING AND EXTRACTIVES
- POWER
- INDUSTRY
- TRANSPORT
- AVIATION
- MARITIME
- WASTE

CAP OR TOTAL EMISSIONS LIMIT

Intensity-based emissions limit
135.9 $MtCO_2e$ (2023-24 compliance period)

GREENHOUSE GASES

CO_2, CH_4, N_2O, SF_6, HFCs, PFCs

OFFSET CREDITS

Domestic, unlimited

ALLOCATION

Free Allocation: Output-based Benchmarking

AVERAGE 2025 PRICES

Average secondary market price: AUD 36.05 (USD 23.23)[1]

EMISSIONS & TARGETS OF AUSTRALIA

OVERALL GHG EMISSIONS (including indirect CO_2, excluding LULUCF)**, 2023**
(in $MtCO_2e$, share of total in %)

Energy	398.0	75.5%
Industrial processes	33.0	6.3%
Agriculture, forestry, and other land use	82.4	15.6%
Waste	13.8	2.6%
Total	**527.2**	

Energy industries	186.8	35%
Manufacturing industries and construction	42.0	8%
Transport	96.6	18%
Commercial, institutional, and residential	15.6	3%
Other energy	56.9	11%

GHG REDUCTION TARGETS

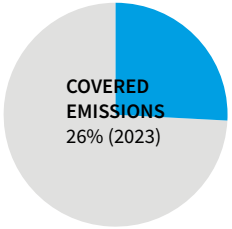
By 2030: 43% below 2005 levels (NDC 2.0)
By 2035: 62-70% below 2005 levels (NDC 3.0)
By 2050: Net zero emissions (Updated first NDC)

Australia's GHG reduction targets cover LULUCF and all other sectors, categories and carbon pools, as defined by the IPCC 2006 guidelines, and additional sources reported in Australia's annual National Inventory Report.

ETS COVERAGE & PHASES

COVERED EMISSIONS 2023

Verified ETS emissions: 138.7 $MtCO_2e$ (FY2023)



CAP OR TOTAL EMISSIONS LIMIT

The total net emissions limit under the Safeguard Mechanism changes as a function of production (output) and is the sum of the bottom-up installation-level emissions limits (baselines) for all individually covered entities. However, the bottom-up emissions limits do not represent an absolute cap.

The facility-level baselines are calculated using output-based benchmarking based on emissions intensity (see 'Allowance Allocation' section). A default decline rate of 4.9% per year applies to standard and landfill baselines up to 2030.

Standard baselines apply to all covered facilities that produce products, whereas landfill baselines are calculated differently and apply exclusively to waste facilities as they provide a service rather than a product.

Net emissions from all Safeguard facilities should not exceed 100 $MtCO_2e$ in FY2030; the total net emissions should not exceed 1,233 $MtCO_2e$ between FY2021 and FY2030; and should reach net zero by FY2050.

Gross emissions from all Safeguard facilities must also reduce over time, measured on a five-year rolling average. Since July 2024, the rolling average of Safeguard-covered emissions over the previous five years must be lower than the five-year rolling average from three years earlier; and from July 2027, the five-year rolling average of Safeguard-covered emissions must be lower than the five-year rolling average from two years prior.

SECTORS AND THRESHOLDS

SECTORS: The Safeguard Mechanism covers all direct (scope 1) GHG emissions from facilities emitting over 100,000 tCO_2e per year. This currently includes around 220 facilities in the mining, manufacturing, domestic transport, oil, gas, and waste sectors.

Grid-connected electricity facilities are covered by a "sectoral" baseline that is not expected to be exceeded and is not declining. Individual grid-connected electricity generators are not covered as long as total emissions do not exceed the sectoral baseline. Grid-connected power sector facilities thus do not face a compliance obligation. Off-grid generators, including electricity generation integrated into Safeguard facilities, are not covered by the sectoral baseline. Their emissions are reported by the facility.

As for waste, only a very small share of total sectoral emissions (~1%) is covered as the majority of installations do not exceed the coverage threshold.

COVERAGE THRESHOLDS: Facilities and companies with annual scope 1 emissions over 100,000 tCO_2e.

POINT OF REGULATION

Point source

TYPE OF ENTITIES
Facilities, domestic transport companies (rail/road freight, shipping, and aviation)

NUMBER OF ENTITIES
219 entities (FY2024)

ALLOWANCE ALLOCATION & REVENUE

ALLOWANCE ALLOCATION
Under the reformed Safeguard Mechanism, baselines are set using a production adjusted emissions intensity framework. Baselines are initially weighted towards a facility's emissions intensity. However, by 2030, baselines transition to being set based on an industry average emissions intensity value. Baselines for new products produced by existing facilities, as well as all products produced by new facilities, from July 2023 are set using 'best-practice' emissions intensity values.

A sectoral baseline applies to grid-connected electricity generation, based on historical emissions.

For facilities with no other baseline determined or where a baseline of less than 100,000 tCO_2e is calculated, a default of 100,000 tCO_2e is applied.

Facilities that overachieve on their baseline (with the exception of landfills and facilities accessing borrowing arrangements or during a multi-year monitoring period) are issued SMCs that can be banked for future use or sold to other facilities.

Facilities that are considered at risk of carbon leakage ("trade-exposed baseline-adjusted", or TEBA, facilities) can apply for reduced baseline decline rates (see 'Compliance Mechanism' section).

FLEXIBILITY & LINKING

BANKING AND BORROWING
Unlimited banking of SMCs is allowed up to 2030. The option to use banked SMCs after 2030 will be considered in the 2026 to 2027 review of the Safeguard Mechanism (see 'Evaluation/ETS review' section).

Borrowing up to 10% of a facility's baseline each year will be allowed until 2030. The facility's baseline would then decrease by a corresponding amount the following year, plus:
- 2% interest for FY2025 and FY2026;
- 10% interest from FY2027 onwards.

OFFSET CREDITS
The use of ACCUs issued under the domestic offset scheme is allowed.

QUALITATIVE LIMITS: Only ACCUs allowed for compliance.

QUANTITATIVE LIMITS: None. However, if a facility surrenders ACCUs equal to more than 30% of its baseline in a given financial year, it must submit a statement to the CER setting out why more onsite abatement has not been undertaken. This statement is then published on the CER's website.

In FY2024, a total of 7.1 million ACCUs were surrendered for compliance purposes under the Safeguard Mechanism.

LINKS WITH OTHER SYSTEMS
The Safeguard Mechanism is not linked with any other system.

OTHER CARBON PRICING INSTRUMENTS IN THE JURISDICTION
Domestic offsetting mechanism: Australian Carbon Credit Unit (ACCU) Scheme

COMPLIANCE

COMPLIANCE MECHANISM
Covered entities must surrender one compliance unit (SMC or ACCU) per tCO_2e that exceeds the installation's annual emissions baseline, which is set using a production-adjusted emissions intensity framework based on an emissions intensity benchmark.

For existing facilities, baselines are initially set weighted towards a facility's current emissions intensity but, over the years to 2030, baselines will transition to being set based on an industry-average emissions intensity value.

A default decline rate of 4.9% per year applies to the baselines of existing and new facilities until 2030. Post-2030 decline rates will be set in predictable five-year periods, aligned with future updates to the Australian NDC targets. The decline rate is consistent with Australia's emissions projections and includes a 'reserve' to account for higher-than-expected production from both new and existing facilities and greater than expected access to trade-exposed baseline adjustments.

Trade exposed facilities in the manufacturing sector can reduce their decline rate to as low as 1% per year, or 2% per year for other sectors, if they apply for TEBA status and demonstrate that they are at an elevated risk of carbon leakage. TEBA facilities receive the discounted baseline decline rate for three years, with the adjusted decline rate being commensurate with their scheme costs.

In some cases, facilities can apply for a multi-year monitoring period (i.e., multi-year baselines, MYMP) of up to five years to smooth their obligation and abatement trajectories up to 2030. This option is only available where facilities can demonstrate they will undertake on-site abatement to achieve below baseline emissions at the end of the monitoring period.

In the FY2024 compliance period, 26 facilities accessed flexibility measures, including 17 TEBA determinations, six new MYMP declarations, and three borrowing adjustment determinations.

COMPLIANCE PERIOD

Annual reporting and compliance

- End of compliance period: June 30
- Reporting deadline: October 31
- SMC issuance: early February in the following year
- Surrendering deadline: March 31 in the following year

MRV

FRAMEWORK: Emissions monitoring according to the "National Greenhouse and Energy Reporting Act" (NGER Act) 2007.

MONITORING: Monitoring and reporting rules under the Safeguard Mechanism use the framework of the NGER Act. The NGER scheme imposes a single national framework for the reporting of GHG emissions (including scope 1 and scope 2), energy production and energy consumption. Reporting obligations apply for all facilities exceeding the annual inclusion threshold (emissions of at least 25,000 tCO_2e, incl. scope 1 and scope 2 emissions; production of 100 TJ or more of energy; or consumption of 100 TJ or more of energy).

REPORTING: Facilities covered under the Safeguard Mechanism are required to report their emissions annually by October 31 to the CER. Reporting is done digitally through the Emissions and Energy Reporting System (EERS).

VERIFICATION: Verification according to the NGER Act. All facilities with emissions greater than 1 $MtCO_2e$ per year are required to undergo an independent emissions audit each year.

PENALTIES AND ENFORCEMENT

The maximum civil penalty is set at one penalty unit per tonne of excess emissions per year. As of November 2024, a penalty unit is valued at AUD 330 (USD 213). The infringement notice is charged at one-third of the maximum civil penalty to a maximum of 150,000 penalty units.

MARKET REGULATION

MARKET DESIGN

MARKET PARTICIPATION: Compliance entities, non-compliance entities (ACCU project proponents).

MARKET TYPES:

Primary: Allowances are currently not auctioned. SMCs are issued for free to facilities that overperform their baseline.

Secondary: The CER in 2024 launched a new Unit and Certificate registry which consolidates previous unit registers and enables the trading, clearing and settling of ACCUs and SMCs.

LEGAL STATUS OF ALLOWANCES: ACCUs and SMCs are treated as financial products under "Australia's Corporations Act (2001)". Certain exemptions apply.

MARKET STABILITY PROVISIONS

COST CONTAINMENT MECHANISM:

Instrument type: Set price (rising over time)

Functioning: Safeguard facilities that exceed their baseline may apply to the CER to purchase the required number of ACCUs at a fixed price. The price of these ACCUs is set at AUD 82.68 (USD 53.27) in FY2026 and will be indexed in future financial years by the Consumer Price Index (CPI) plus an additional 2% per year. This measure is intended to provide certainty to Safeguard facilities about the maximum compliance costs they will face under the reformed scheme.

OTHER INFORMATION

INSTITUTIONS INVOLVED

Clean Energy Regulator (CER): Federal authority overseeing the mechanism; tasked with setting baselines, collecting and publishing emissions data, issuing SMCs, and making determinations on borrowing, MYMPs and TEBA applications.

Department of Climate Change, Energy, Environment, and Water (DCCEEW): Federal ministry responsible for climate policy and the Safeguard Mechanism.

Climate Change Authority (CCA): Independent advisory body providing expert advice to the Australian government on climate policy, including the performance of the Safeguard Mechanism.

EVALUATION/ETS REVIEW

The government will review Safeguard Mechanism policy settings over 2026 and 2027, to ensure they are appropriately calibrated and effectively delivering emissions reductions in line with Australia's targets.

As part of this review, the CCA will advise the government on the extent to which on-site abatement is being driven by the reforms, and whether any additional incentives are required. The review will also consider the use of international offset credits (currently not allowed), the eligibility of SMCs for use after 2030, and alignment with Australia's 2035 NDC target.

Following reforms to the Safeguard Mechanism in 2023, the government reviewed additional policy options to address carbon leakage due to differences in emissions reduction policies between Australia and key trading partners. The review assessed carbon leakage risks and found existing policy measures mitigate leakage risks in the short- to medium-term. The review examined whether further policy measures in the medium to longer term would support a level playing field by ensuring domestic and imported goods face the same emissions reduction obligations in the Australian market.

The review recommended that a border carbon adjustment be introduced for a select group of commodities that are at particular risk of carbon leakage from imports, with it initially covering cement and clinker, and to be considered for other commodities subject to further assessment. The Australian government will give further consideration to the issues and whether to implement a border carbon adjustment in the 2026 to 2027 review of the Safeguard Mechanism.

REGULATORY FRAMEWORK

- → **National Greenhouse and Energy Reporting Act 2007 (NGER Act)**
- → **National Greenhouse and Energy Reporting (Safeguard Mechanism) Rule 2015**
- → **Carbon Credits (Carbon Farming Initiative) Rule 2015**
- → **Australian National Registry of Emissions Units Act 2011**
- → **Australian National Registry of Emissions Units Regulations 2011**

BEIJING

BEIJING PILOT EMISSIONS TRADING SYSTEM

- One of three Chinese pilots with ETS regulation passed by municipal people's congress
- Pioneered cross-regional trading and a price corridor as price stability mechanism
- Wide coverage of sectors and experience of scope expansion

ETS DESCRIPTION

The Beijing Pilot ETS was launched in November 2013 and is one of three Chinese pilots with ETS regulation passed by its regional congress. Beijing applies a bottom-up approach to cap-setting. The ETS covers 30% of the city's total emissions, including from: heat, cement, petrochemicals, and other industrial enterprises; manufacturers; the service sector; and public transport. Covered entities must surrender allowances for all their covered emissions, and allocation is based on auctions or free allocation.

The Beijing pilot has seen a relatively high carbon price level compared to the other ETS pilots in China.

Beijing plays a supporting role in the national offset crediting program. The Beijing Green Exchange operates the China Certified Emissions Reduction (CCER) national exchange.

YEAR IN REVIEW

In 2025, the Beijing Municipal Ecology and Environment Bureau (Beijing EEB) and related authorities updated several ETS management rules according to the "Measures for the Management of Emissions Trading in Beijing" issued in 2024, including rules for registry management, auctions revenue management, and trading management.

In April, the Beijing EEB released the ETS working plan for the compliance year 2025, which included the allowance allocation plan.

In June, the Beijing EEB issued the "Beijing Carbon Inclusive Management Measures". Coming into effect in September 2026, these new measures regulate the issuance, administration, and use of the provincial offset mechanism.

Beijing organized one allowance auction in October. The Beijing EEB auctioned 82,000 allowances for a total of CNY 9.5 million (USD 1.32 million).

In force
Under development
Under consideration

SECTORS

- POWER[1]
- INDUSTRY
- BUILDINGS[2]
- TRANSPORT

CAP OR TOTAL EMISSIONS LIMIT

Intensity-based emissions limit[3]
~45 $MtCO_2$ (2024)

GREENHOUSE GASES

CO_2

OFFSETS AND CREDITS

Domestic (national and provincial), with quantitative limits

ALLOCATION

Free Allocation: Grandparenting
Free Allocation: Output-based Benchmarking
Auctioning

AVERAGE 2025 ALLOWANCE PRICE

Average auction price: CNY 107 (USD 14.88)
Average secondary market price: CNY 96 (USD 13.00)

TOTAL REVENUE

CNY 291.8 million (USD 40.56 million) since beginning of program
CNY 9.5 million (USD 1.32 million) in 2025

1 The power sector transferred to the National Carbon Market in 2019. However, three power companies remain covered by the Beijing pilot ETS for management reasons.
2 The Beijing Pilot ETS covers direct and indirect emissions from service industries in public buildings, such as hotels, hospitals, universities and data centers.
3 Beijing ETS applied output-based historical intensity allocation methods and grandparenting method based on historical emissions for different sectors.

EMISSIONS & TARGETS OF BEIJING

OVERALL GHG EMISSIONS (including indirect CO_2, excluding LULUCF), **2022**
71.6 $MtCO_2e$[4]

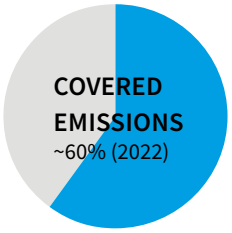
GHG REDUCTION TARGETS

By 2025: At least 10% reduction in CO_2 emissions (excluding passenger and cargo aviation) compared to the peaking level; reduce CO_2 intensity by ~18% compared to 2020 levels ("Beijing 14th Five-Year Plan on Environment Protection")
By 2030: Peak Beijing CO_2 emissions ("Beijing Carbon Peaking Plan")
By 2035: "Significant" reduction of CO_2 emissions ("Beijing 14th Five-Year Plan on Energy Saving and Climate Change")

ETS COVERAGE & PHASES

COVERED EMISSIONS 2022

~60%[5]



CAP OR TOTAL EMISSIONS LIMIT

The cap under the Beijing Pilot ETS is the sum of the bottom-up installation level emissions of all individual covered entities. Caps over the past years have been as follows:
2020: ~50 $MtCO_2$
2021: ~35 $MtCO_2$[6]
2022: ~44 $MtCO_2$[7]
2024: ~45 $MtCO_2$

SECTORS AND THRESHOLDS

Industrial and non-industrial companies and entities, including power grid operators, heating, petrochemicals, other industrial enterprises, manufacturers, the service sector, public transport, and domestic aviation.[8] The power sector transferred to the National Carbon Market in 2019; however, three entities remain covered by the Beijing pilot ETS for management reasons. The cement sector transferred to the National Carbon Market in 2024.

INCLUSION THRESHOLDS:
Until 2015: 10,000 tCO_2 of emissions per year, considering both direct and indirect emissions.
From 2016 onwards: 5,000 tCO_2 of emissions per year, considering both direct and indirect emissions.

MANDATORY REPORTING: 2,000 tonnes of coal equivalent (tce) energy consumption per year.

POINT OF REGULATION

Point source (power and industry); downstream (indirect emissions from electricity and heat consumption)

TYPE OF ENTITIES

Companies

NUMBER OF ENTITIES

921 (2025). In addition, 404 other entities had mandatory reporting but no surrender obligations for the 2025 compliance year.

ALLOWANCE ALLOCATION & REVENUE

ALLOWANCE ALLOCATION

Beijing carbon emission allowances (BEAs) are distributed for free, using benchmarking or grandparenting. For sectors using benchmarking or historical intensity methods, a pre-allocation method is adopted for the annual allowance allocation. Allocation is then adjusted ex-post to reflect the actual production in the respective compliance year.

The allocation plan is updated every year. For the compliance year 2025:

FREE ALLOCATION:
Benchmarking: Free allocation based on sector-specific benchmarks is used for the power sector, heat production, data centers, pumped-storage power stations, grids, and taxis.

Grandparenting: Output-based historical emissions intensity method is used for water supply, integrated circuit manufacturing, and public road transportation.

Grandparenting based on historical emissions is used for service sectors.

To prevent an excessive surplus or shortage of allowances, the Beijing EEB set upper limits for allowance surplus and shortage at 20% of the emissions. Covered entities with free allowances below 80% of their verified emissions will have their allocation adjusted upwards to 80% of their verified emissions. Covered entities with free allowances higher than 120% of their verified emissions will have their allocation adjusted downwards to 120% of their verified emissions.

4 Due to the lack of publicly available data, the data reported here is estimated by local experts based on public sources.
5 No data is publicly available for recent years. This percentage is the covered emissions in Beijing ETS including both direct and indirect emissions divided by the total direct emissions in Beijing.
6 Lower than 2020 mainly due to transfer of the power sector to the National Carbon Market.
7 Higher than 2021 mainly due to 41 new covered entities in Beijing ETS.
8 Currently, the domestic aviation sector is only subject to mandatory reporting.

AUCTIONING: Beijing may set aside up to 5% of allowances for irregular auctions (see 'Market Stability Provisions' section).

USE OF REVENUES

 General budget, including debt reduction

Revenues are attributed to the city treasury

FLEXIBILITY & LINKING

BANKING AND BORROWING

Banking is allowed.
Borrowing is not allowed.

OFFSET CREDITS

The use of offset credits is allowed. These are Chinese domestic, project-based offset credits (CCERs) and Beijing Certified Emission Reductions (BCERs). Eligible BCERs projects include green architecture, low-carbon transportation, landscaping, renewable energy and energy saving.

QUANTITATIVE LIMIT: The use of offset credits is limited to 5% of the annual emissions.

QUALITATIVE LIMIT: CCERs issued under the old CCER scheme, which ran from 2012 to 2017, may still be used to offset emissions in the 2023 compliance period, but will no longer be valid starting in 2024. No qualitative limits on new CCERs issued after January 2024 under the new CCER scheme.

Of the 5% limit, at least 50% must come from projects within the jurisdiction of the city of Beijing. Among non-Beijing CCERs, priority is given to those with regional climate or pollution control cooperation agreements (e.g., Hubei and Tianjin).

LINKS WITH OTHER SYSTEMS

The Beijing Pilot ETS is not linked with any other system.

OTHER CARBON PRICING INSTRUMENTS IN THE JURISDICTION

ETS: China's National Carbon Market
Domestic crediting mechanisms: Carbon Inclusive local offset credits in Beijing (BCER)
Domestic credit mechanism (national): China Certified Emissions Reduction (CCER)

COMPLIANCE

COMPLIANCE MECHANISM

Covered entities must surrender one compliance unit (allowance or offset credit) per tCO_2 emitted for all their covered emissions.

COMPLIANCE PERIOD

One calendar year: the deadline to surrender allowances is set by Beijing EEB in the annual management notice.

MRV

FRAMEWORK: The Beijing EEB has general rules for GHG monitoring and reporting, and sector-specific guidelines for the following sectors: heat production and supply, thermal power generation, cement, petrochemicals, public transport, aviation, other industrial enterprises, and the service sector.

MONITORING: Covered entities are required to set up and follow monitor plans. In addition, all legal entities with energy consumption over 2,000 tce must report their emissions. Verification is not required.

REPORTING: Covered entities submit annual emission reports by the end of April of the year following the reporting year. Legal entities without compliance obligation but with energy consumption over 2,000 tce submit annual emission reports by the end of May of the year following the reporting year.

VERIFICATION: Third-party verification is required. In addition, the government organizes expert review of all verification reports and some reports are subject to further fourth-party verification. Covered entities submit verified annual emission reports by the end of May of the year following the reporting period.

PENALTIES AND ENFORCEMENT

Penalties for failing to submit emissions or verification reports on time can result in fines of up to CNY 50,000 (USD 6,954). Furthermore, companies failing to surrender enough allowances to match their emissions are fined up to five times the average market price over the previous six months for each missing allowance.

MARKET REGULATION

MARKET DESIGN

MARKET PARTICIPATION: Covered entities, domestic non-compliance entities, and domestic individuals that meet the requirements of the carbon emission trading rules set up by Beijing Green Exchange.

MARKET TYPES:

Primary: BEAs are distributed through free allocation. Beijing set aside up to 5% of allowances for irregular auctions.

Secondary: Trading consists of three spot products: BEAs, CCERs, BCERs. The Beijing Green Exchange manages the trading of all three products. The Beijing ETS also allows over-the-counter trading.

Due to financial market regulations in China, no forward markets or derivatives are allowed.

LEGAL STATUS OF ALLOWANCES: Allowances are not considered financial instruments.

MARKET STABILITY PROVISIONS

EXTRA ALLOWANCE AUCTIONS

Instrument type: Price-based instrument

Functioning: The Beijing EEB can auction extra allowances if the weighted average price exceeds 60% of the average transaction price in the previous calendar year for ten consecutive trading days, or when market liquidity is low. It can also buy back allowances from the market using a special funding source from the municipal budget if the weighted average price of allowances is lower than 40% of the average transaction price of the previous calendar year for ten consecutive trading days.

EXCHANGE

Instrument type: Price-based instrument

Functioning: The Beijing Green Exchange implements a system of limits on price increases and decreases for listed trading over the exchange. This is 20% above or below the reference price (the weighted average price of all transactions on the previous trading day) to prevent large price fluctuations. It also sets the maximum position limit for the different market participants: the sum of their annual allocated allowances plus 1 million tonnes for compliance entities, 1 million tonnes for institutional investors, and 50,000 tonnes for natural persons.

OTHER INFORMATION

INSTITUTIONS INVOLVED

Beijing Municipal Commission of Development and Reform: Responsible for establishing the Beijing ETS until governmental restructure in 2019.

Beijing Ecology and Environment Bureau: Responsible for the Beijing ETS after governmental restructure in 2019.

Beijing Green Exchange (previously known as the Beijing Environment Exchange): Responsible for the trading platform.

Beijing Climate Change Management Center: Responsible for the registry.

EVALUATION/ETS REVIEW

No public information is available on the system's evaluation or review. However, the local carbon exchange has published annual reports with an overview of the system's performance from 2014 to 2018. In addition, research on improving legislation, MRV, and benchmarking, among other issues, has been funded by the local government.

According to Beijing EEB, covered emissions decreased by 2% in the 2023 compliance year, compared to 2022.

REGULATORY FRAMEWORK

- → **Beijing Municipal People's Congress ETS Pilot Bill (2013)**
- → **Measures for the Management of Emissions Trading in Beijing (2024)**
- → **Beijing Local MRV Standards for Eight Industries (power generation, cement, petrochemical, heat production, service, road transportation, aviation and other industries) (2021)**
- → **Measures for the Administration of offset use in Beijing ETS (2024)**
- → **Measures for the Administration of Auction and Repurchase of the allowance in Beijing ETS (2024)**
- → **Beijing EEB Notice on the Management of Key Carbon Emission Entities and the Work Plan of Carbon Emission Trading Pilot in 2025**

CHINA

CHINA'S NATIONAL CARBON MARKET

- Began in 2021 as the world's largest ETS, now covering around 8 billion tCO_2
- Operates as an intensity-based ETS
- Covers the power sector and started expansion to steel, cement, and aluminum smelting in 2024

ETS DESCRIPTION

China's National Carbon Market began operating in 2021, with the objective of contributing to the effective control and gradual reduction of CO_2 emissions. China's National Carbon Market is the world's largest in terms of covered emissions, estimated to cover around 8 billion tCO_2 – or more than 60% of the country's CO_2 emissions.

The China National Carbon Market regulates more than 3,300 companies from the power, steel, cement, and aluminum smelter sectors with annual emissions in excess of 26,000 tCO_2e. Covered entities must surrender allowances for all their covered emissions. The allowances in the China National Carbon Market are 100% freely allocated using an output-based approach. Compliance obligations are currently limited and vary between different types of facilities. The system's coverage will expand to other sectors over time.

In January 2024, China relaunched its national GHG voluntary emission reduction trading market, the Chinese Certified Emissions Reduction scheme (CCER). This came after six years of suspension, during which time it was reformed. This could contribute to the implementation of an offsetting scheme in the domestic ETS (see 'Offset Credits' section).

The National Carbon Market builds on the successful experience of regional carbon markets implemented in eight regions. These pilots continue to operate in parallel with the National Carbon Market, covering sectors and entities not included in the national system.

YEAR IN REVIEW

In December 2024, 99.98% of the covered entities in the National Carbon Market surrendered their compliance units for the 2023 compliance year.

In August 2025, China's highest authorities – the General Office of the CPC Central Committee and the General Office of the State Council – issued the "Opinions on Advancing Green and Low-Carbon Transformation and Strengthening the Development of the National Carbon Market". This policy sets out a roadmap for transitioning from an intensity-based cap to an absolute cap and expanding the National Carbon Market's coverage.

In November, the Ministry of Ecology and Environment (MEE) published the allocation plan for the steel, cement, and aluminum smelter sectors for 2024 and 2025. According to the plan, all covered entities in these three sectors will receive free allowances equivalent to their verified emissions in the 2024 compliance year. In 2025, free allocation will be based on a more differentiated, performance-based approach (See 'Allowance Allocation' section).

1 Captive power plants in other sectors are also covered.

In force
Under development
Under consideration

SECTORS

POWER[1]
INDUSTRY

CAP OR TOTAL EMISSIONS LIMIT

Intensity-based emissions limit
~8,000 $MtCO_2$ (2024)

GREENHOUSE GASES

CO_2
CF_4 and C_2F_6 (only for aluminum smelting sector)

OFFSET CREDITS

Domestic (national), with quantitative limits

ALLOCATION

Free Allocation: Output-based Benchmarking

AVERAGE 2025 PRICES

Average secondary market price: CNY 70.78 (USD 9.85)

In November, China submitted its 2035 NDC, committing to reduce economy-wide GHG emissions by 7-10 % from peak levels by 2035. It is the first time China has committed to reducing its absolute GHG emissions. The new NDC also aims to establish a more effective and dynamic National Carbon Market. It envisages expanding the coverage and introducing auctions in the National Carbon Market.

EMISSIONS & TARGETS OF CHINA

OVERALL GHG EMISSIONS (including indirect CO_2, excluding LULUCF), 2021

(in $MtCO_2e$, share of total in %)

Energy	11,007	77%
Industrial processes	2,140	15%
Agriculture	931	7%
Waste	236	2%
Total	**14,314**	

Energy industries	5,354	37%
Manufacturing industries and construction	3,269	23%
Transport	1,002	7%
Commercial, institutional, and residential	532	4%
Other energy	850	6%

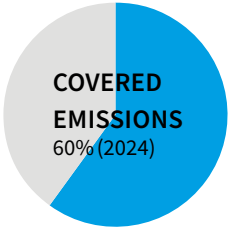
GHG REDUCTION TARGETS

Before 2030: Peak CO_2 emissions; reduction of CO_2 emissions per unit of GDP by over 65% from 2005 levels ("'1+N' policy framework"; NDC 2.0)
By 2035: Reduce economy-wide GHG emissions by 7-10 % from peak levels (NDC 3.0)
Before 2060: Carbon neutrality ('1+N' policy framework; NDC 2.0)

ETS COVERAGE & PHASES

COVERED EMISSIONS 2024

Above 60%



CAP OR TOTAL EMISSIONS LIMIT

The cap is the sum of the bottom-up total allowance allocation to all individual covered entities. It is adjusted according to the actual production levels.

The National Carbon Market is estimated to have had an annual cap of ~4,500 $MtCO_2$ in 2019 and 2020, ~5,100 $MtCO_2$ in 2021 and 2022, ~5,200 $MtCO_2$ in 2023 and ~8,000 $MtCO_2$ in 2024.

SECTORS AND THRESHOLDS

Power (including combined heat and power, as well as captive power plants of other sectors), steel, cement, and aluminum smelter.

Compliance obligations are currently limited (see 'Allowance Allocation' section).

The scope is expected to be gradually expanded to cover other sectors: petrochemicals, chemicals, flat glass, copper smelter, paper, and aviation. Entities in these sectors have MRV obligation since 2015.

INCLUSION THRESHOLDS:

For 2019 to 2020: Entities with annual emissions of 26,000 tCO_2 or greater in any year from 2013 to 2019.

For 2021 to 2022: Entities with annual emissions of 26,000 tCO_2 or more in any year from 2020 to 2021.

From 2023: Entities with annual emissions of 26,000 tCO_2 or more in the previous year.

POINT OF REGULATION

Point source

TYPE OF ENTITIES

Companies[2]

NUMBER OF ENTITIES

~3,300 entities (2024)

2 MRV and compliance obligations apply to the stationary emission facilities operated by these companies, but they are typically handled at the company level. The 3,300 'entities' mentioned here refer to companies, each of which may operate several facilities.

ALLOWANCE ALLOCATION & REVENUE

ALLOWANCE ALLOCATION

Allowances are distributed for free, using output-based benchmarking or output-based intensity method. The competent authorities update the allocation plans every year and the following information refers to the latest allocation plans.

FREE ALLOCATION (Power sector): Output-based benchmarking is used as the main allocation method, with four distinct benchmarks: conventional coal plants below 300 MW; conventional coal plants above 300 MW; unconventional coal; and natural gas.

A pre-allocation method is adopted for the annual allowance allocation. Allocation is then adjusted ex-post to reflect the actual production in the respective compliance year.

Entities received allowances at 70% of their verified emissions in the previous year. Allocation was subsequently adjusted to reflect actual generation in 2023 and 2024. A unit load (output) adjustment factor distributed more allowances for coal-fired entities operating at load rates below 65%.

According to the 2023 to 2024 allocation plan, compliance obligations are limited. Gas-fired plants only need to surrender allowances up to their level of free allocation as per the benchmarks. Coal-fired plants with free allowance below 80% of their verified emissions will have their allocation adjusted upwards to 80% of their verified emissions. This means that 20% remains the maximum shortfall, similar to the previous compliance periods.

FREE ALLOCATION (Steel, cement, and aluminum smelter sector): For the 2024 compliance year, covered entities will receive free allowances equal to their verified emissions.

For the 2025 compliance year, the allocation method is intensity-based, designed to encourage efficiency improvements without immediately limiting overall emissions output or resulting in very large surpluses or shortages of allowances. For covered entities whose emissions intensity falls within 20% above or below the sectoral balance value, their allocation equals their verified emissions multiplied by one minus 15% of their deviation. For covered entities/facilities with deviations exceeding 20% in either direction, the adjustment is capped at 3% of verified emissions.

Production of certain products in the cement sector will receive annual allowances equal to their verified actual carbon emissions.

No pre-allocation for the 2024 compliance year took place. For the 2025 compliance year, entities received pre-allocation at 70% of their 2024 verified emissions. The final allocation was subsequently adjusted after the verification of emissions in 2025 to reflect actual output.

AUCTIONING: Allocation currently takes place through free allocation, but the Interim Regulations clarify that auctioning is to be introduced and gradually expanded. There is currently no timeline for this.

USE OF REVENUES

There is currently no arrangement for the use of revenues generated by the scheme.

FLEXIBILITY & LINKING

BANKING AND BORROWING

Borrowing was temporarily allowed in 2021 and 2022.

Banking was allowed with no limit in the first three compliance periods. Since 2024, covered entities in power sector are allowed to bank up to 10,000 tonnes plus 1.5 times their net sales over the period from 2019 to 2024. Covered entities in the steel, cement, and aluminum smelter sectors are allowed to bank up to 100,000 tonnes plus 1.5 times their net sales over the period from 2019 to 2024.

OFFSET CREDITS

The use of offset credits is allowed.

QUANTITATIVE LIMITS: Covered entities can use CCERs generated from projects not covered by the National Carbon Market for up to 5% of their verified emissions.

QUALITATIVE LIMITS: There were no additional project or vintage restrictions.

In 2012, the National Development and Reform Commission (NDRC) issued the “Interim Measures for the Management of Voluntary GHG Emissions Reduction Transactions”, which provided guidelines for the issuance of CCERs. The registration of CCER projects started in 2015, but the program was suspended in 2017 while regulations were reviewed. MEE launched the CCER system in 2024 with new methodologies, registry, verifiers, and exchange.

Only credits from projects registered in the new CCER program are eligible for offset use in China’s National Carbon Market after January 2025.

The National Center for Climate Change Strategy and International Cooperation (NCSC) operates the CCER registry. The Beijing Green Exchange is dedicated to CCER trading platforms.

LINKS WITH OTHER SYSTEMS

The China National Carbon Market is not linked with any other system.

OTHER CARBON PRICING INSTRUMENTS IN THE JURISDICTION

ETS: Regional ETSs in Beijing, Chongqing, Fujian, Hubei, Guangdong, Shanghai, Shenzhen, and Tianjin

Domestic crediting mechanism (national): CCER

Domestic crediting mechanisms: Local offset crediting mechanism in Beijing, Chongqing, Fujian, Hubei, Guangdong, Shanghai, Shenzhen, and Tianjin

COMPLIANCE

COMPLIANCE MECHANISM

Covered entities must surrender one allowance per tCO_2e emitted for all their covered emissions, and allocation is based on an emissions intensity benchmark.

COMPLIANCE PERIOD

Two calendar years from 2019 to 2022. One calendar year from 2023 onwards.

MRV

MEE publishes an ETS work plan to set the timeline for MRV work each year. MEE published the 2025 work plan in April 2025.

FRAMEWORK: MRV guidelines, supplementary data sheets, verification guidelines, and other guidance are available for the eight sub-sectors to be covered by the ETS. This MRV framework has evolved continuously since 2013 (see 'Sectors and Thresholds' section).

MONITORING: Covered entities are required to set up and follow monitor plans.

REPORTING: Covered entities must submit a monthly emissions report within 40 calendar days after the end of each month, including fuel consumption, low-level calorific value, carbon content of the fuel, and purchased electricity, output products, as well as other parameters. Covered entities must submit the annual emissions reports by the end of March next year.

VERIFICATION: Provincial-level ecological and environmental authorities are responsible for organizing the verification of GHG reports. They may commission technical service agencies to provide verification services. Verification of 2024 emissions from the power sector must be completed by the end of June 2025. Verification of the 2024 emissions from the cement, aluminum smelter and steel sectors should be completed before the end of August 2025. Verification of other key industries should be completed by the end of September 2025.

PENALTIES AND ENFORCEMENT

The Interim Regulations enhanced enforcement measures and penalties for different parties. Covered entities face a fine for not reporting or cheating in reporting, ranging from CNY 500,000 (USD 69,542) to ten times the illegal gains. Failures in compliance obligations result in fines ranging from five to ten times the market value of the gap, a significant increase from the previous maximum fine of CNY 30,000 (USD 4,173). For those who refuse to surrender allowances after receiving a warning, deductions from the following year's allocation and potential production suspension are now in force.

Consultancy firms, third-party verifiers, and testing organizations involved in MRV data fraud may face penalties up to ten times the value of their illegal gains, as well as disqualification. Similar punishments also apply for market manipulation. The regulation rectifies the previous absence of penalties for misconduct by technical service providers and market participants.

Market participants involved in market manipulation behaviors may face penalties up to ten times their illegal gains, starting from CNY 500,000 (USD 69,542).

MARKET REGULATION

MARKET DESIGN

MARKET PARTICIPATION: Compliance entities. The Interim Regulations indicate that other types of institutions or individuals may in the future also be allowed to participate in the market; however, there is no specific timeline for this.

MARKET TYPES:

Primary: Allowances are currently only distributed by free allocation. The Interim Regulations state the intention to introduce auctioning, though without a specific timeline.

Secondary: China Emission Allowances (CEA) can be traded on a dedicated trading platform managed by the Shanghai Environment and Energy Exchange. CEAs for the 2019 to 2020 period, CEAs for 2021, CEAs for 2022, and CEAs for 2023 are categorized as four different products on the exchange, and have similar prices.

Due to financial market regulations, other products (i.e., derivatives) are currently not allowed.

LEGAL STATUS OF ALLOWANCES: Allowances are not considered financial instruments. For financial accounting purposes, the Ministry of Finance published an interim policy that categorizes only purchased allowances, and not those received for free, as assets in financial statements.

MARKET STABILITY PROVISIONS

In May 2021, the MEE announced the option of establishing a market-regulating and protection mechanism. This would enable the MEE to respond to abnormal fluctuations in trading prices, for instance through buy-back, auctioning, or adjusting the rules related to CCER use. The necessary triggers and specifics of this mechanism are yet to be defined.

EXCHANGE

Instrument type: Price-based instrument

Functioning: The Shanghai Environment and Energy Exchange implements a system of limits on price increases and decreases for trading over the exchange. For listed trading (the maximum volume for a single transaction does not exceed 100,000 tCO_2e), this is 10% above or below the reference price (the closing price of the previous trading day). For block trading (minimum transaction volume of 100,000 tCO_2e), this is 30% above or below the reference price. Only transactions within this price range can be successfully completed on the exchange. It also sets the maximum position limit for the different market participants: the sum of their annual allocated allowances plus 1 $MtCO_2$ for compliance entities, 1 $MtCO_2$ for institutional investors, and 50,000 tCO_2 for natural persons.

OTHER INFORMATION

INSTITUTIONS INVOLVED

The China National Carbon Market has a multi-level governance structure involving three levels of government:

Ministry of Ecology and Environment (MEE): Acts as the national competent authority setting the rules and overseeing the system, jointly with other national regulators.

Provincial-level MEE subsidiaries: Oversee the implementation of the ETS, including identifying covered entities, organizing MRV, hiring verifiers, calculating allowance, managing provincial registry account, and oversee compliance.

Municipal-level authorities: Responsible for managing covered entities directly.

China Carbon Emissions Registration and Clearing Co., Ltd.: Responsible for operating the CEA registry and clearing platform.

Shanghai Environment and Energy Exchange: Operates the CEA trading platform.

National Center for Climate Change Strategy and International Cooperation (NCSC): Operates the CCER registry.

The Beijing Green Exchange: Responsible for operating the CCER trading and clearing platform.

EVALUATION/ETS REVIEW

An evaluation framework is currently under development. The MEE has published annual ETS progress reports since 2024. According to the 2025 progress report, the carbon intensity in fossil-fuel power generation in 2024 decreased 10.8%, compared to the 2018 level.

REGULATORY FRAMEWORK

- → The National Measures for the Administration of Carbon Emission Trading (trial) (2021)
- → Allocation Plan for the Power Sector (2023-2024)
- → Management Measures for voluntary Greenhouse Gas Emission Reduction Trading (Trial) (2023)
- → Updated Guidelines for GHG Monitoring and Reporting for the power sector (2023)
- → Updated Guidelines for GHG Monitoring and Reporting for industrial sectors (2023)
- → Interim Regulations on the Administration of Carbon Emission Trading (2024)
- → Guidelines for GHG Monitoring and Reporting for Cement, aluminum smelter and steel industries (2024 and 2025)
- → Work Plan for National Carbon Market covering steel, cement and aluminum smelter sectors (2025)
- → Allocation Plan for the Steel, Cement and Aluminum Smelter Sector (2024, 2025)
- → Opinions of General Office of the CPC Central Committee and the General Office of the State Council on Advancing Green and Low-Carbon Transition and Strengthening the Development of the National Carbon Market (2025)
- → Progress Report of China's National Carbon Market (2025)

CHONGQING

CHONGQING PILOT EMISSIONS TRADING SYSTEM

- The only Chinese pilot to cover non-CO_2 gases
- Up to 8% of an emitter's shortfall can be offset with eligible non-fossil energy purchases
- Absolute caps used in 2014 to 2020 but replaced with intensity-based caps in 2021

ETS DESCRIPTION

Chongqing launched its pilot ETS in June 2014. Among the eight Chinese pilots, the Chongqing ETS is the only one that covers non-CO_2 gases.

The Chongqing Pilot ETS covers 299 entities in the industrial sectors. From 2014 to 2020, the Chongqing Pilot ETS operated with an absolute cap with an annual reduction rate applied to the base-year emissions level (i.e., the sum of each covered entity's highest annual emissions from 2008 to 2012). Until 2015[2], the annual reduction rate was 4.13% and thereafter 4.85%. Auctioning was introduced in 2021 to provide covered entities with additional supply to meet their compliance demand. Covered entities must surrender allowances for all their covered emissions, and allocation is based on auctions or free allocation.

The Chongqing Ecology and Environment Bureau (EEB) revised the ETS management rules in 2022, including general management rules and specific rules for MRV, managing allowances, allocation, and registry. Since the revision, there has been no absolute cap for the system. Output-based methods are now applied in several industrial sectors.

In the short term, the Chongqing Pilot ETS operates in parallel with the China's National Carbon Market. When the National Carbon Market expands to new sectors, the covered entities in these sectors will be integrated into it.

YEAR IN REVIEW

In December 2024, all covered entities surrendered their compliance units for compliance year 2023.

In March 2025, Chongqing EEB updated 14 MRV guidelines for the covered entities in Chongqing ETS.

In September 2025, Chongqing EEB published the allocation plan for the compliance year 2024. It introduced two new benchmarks, policy incentives and banking requirements (See 'Allowance Allocation' and 'Banking and Borrowing' section). Covered entities in steel, cement, and the aluminum smelting sectors were integrated into the National Carbon Market since compliance year 2024.

In force
Under development
Under consideration

SECTORS

MINING AND EXTRACTIVES
INDUSTRY
WASTE

CAP OR TOTAL EMISSIONS LIMIT

Intensity-based emissions limit[1]
157 $MtCO_2e$ (2024)

GREENHOUSE GASES

CO_2, CH_4, N_2O, HFCs, PFCs, SF_6, NF_3

OFFSET CREDITS

Domestic (national and provincial), with quantitative limits

ALLOCATION

Free Allocation: Grandparenting
Free Allocation: Output-based Benchmarking
Auctioning

AVERAGE 2025 PRICES

Average secondary market price: CNY 35.86 (USD 4.99)

TOTAL REVENUE

CNY 354.14 million (USD 49.3 million) since beginning of program

1 Chongqing ETS applied an output-based benchmark, output-based historical intensity allocation, and grandparenting based on historical emissions for different sectors
2 Chongqing ETS launched in 2014, covering the emissions from 2013 in the first compliance period.

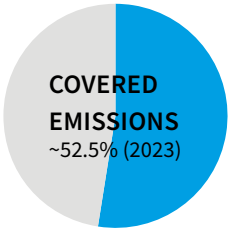
EMISSIONS & TARGETS OF CHONGQING

OVERALL GHG EMISSIONS (including indirect CO_2, excluding LULUCF), **2023**
345.3 $MtCO_2e$ [3]

GHG REDUCTION TARGETS
By 2030: Peak emissions ("Chongqing Working Guidance for Carbon Dioxide Peaking and Carbon Neutrality in Full and Faithful Implementation of the New Development Philosophy")
By 2060: Climate neutrality ("Chongqing Working Guidance for Carbon Dioxide Peaking and Carbon Neutrality in Full and Faithful Implementation of the New Development Philosophy")

ETS COVERAGE & PHASES

COVERED EMISSIONS 2023
~52.5%[4]



CAP OR TOTAL EMISSIONS LIMIT
Currently, the total emissions limit under the Chongqing Pilot ETS is the sum of the bottom-up output-based levels for all individual covered entities. Previously, the system used absolute caps that declined annually at a pre-determined rate. The cap was set in 2013 at 125 $MtCO_2e$. Until 2015, the annual reduction rate of the cap was 4.13%. From 2016 onwards, it was revised to 4.85%. Caps for the following years were:
2018: 97 $MtCO_2e$
2019: 92 $MtCO_2e$
2020: 78.4 $MtCO_2e$
The absolute caps were replaced by intensity-based caps in 2021. Chongqing EEB didn't publish the cap data from 2021 to 2023.
2024: 157 Mt CO_2e

SECTORS AND THRESHOLDS
Unlike most other Chinese pilots, Chongqing does not pre-define which sectors are covered under its ETS; rather, it sets a threshold which applies to all entities in the industrial sectors, including production of electrolytic aluminum, ferroalloys, calcium carbide, cement, caustic soda, and iron and steel, and other industrial sectors. Entities in these sectors with emissions above the threshold are covered by the ETS.

The power sector was covered until 2019, after which it was integrated into the National Carbon Market. Steel, cement, and the aluminum smelting sectors were integrated into the National Carbon Market in 2024.

INCLUSION THRESHOLDS:
Until 2020: Companies with emissions of 20,000 tCO_2e per year.

Since 2021: Chongqing lowered the threshold to include companies with emissions equal to or above 13,000 tCO_2e per year or energy consumption of 5,000 tce per year.

POINT OF REGULATION
Point source (power and industry); downstream (indirect emissions from electricity and heat consumption).

TYPE OF ENTITIES
Companies

NUMBER OF ENTITIES
296 entities (2024)

ALLOWANCE ALLOCATION & REVENUE

ALLOWANCE ALLOCATION
Allowances are distributed for free, using benchmarking or grandparenting. Competent authorities update the allocation plan every year and the following information pertains to the allocation plan for compliance year 2024.

FREE ALLOCATION:
Benchmarking: Free allocation based on sector-specific benchmarks is used for ammonia production (natural gas-based), flat glass, and electric arc furnace (EAF) steelmaking.

Grandparenting: Grandparenting based on historical emissions intensity is used for some industrial sectors with less than two products and comparable product carbon intensities.

Grandparenting based on historical emissions is used for sectors with complex products, generally based on the previous three years' data.

The waste incineration and shale gas production sectors will receive the same amount of allowance as their actual emissions. The same approach also applies to special cases, such as new entrants or companies with more than 50% changes in production.

3 No data is publicly available for recent years. Data here is provided by local experts.
4 This percentage is the covered emissions in Chongqing ETS including both direct and indirect emissions divided by the total direct emissions in Chongqing.

In addition to the basic allocation method, the Chongqing ETS has introduced adjustment coefficients to reward covered entities that demonstrate strong decarbonization effort and were not subject to environmental penalties from 2019 to 2024. Such entities receive an additional 0.5% to 1% of their 2024 allocation, up to 5,000 allowances. Covered entities that met the national benchmark for product energy efficiency in 2024 or build zero carbon emission industrial park will also be granted an extra 1% of their 2024 product allowance.

Ex-post allocation adjustments, e.g., based on production data, are applied for those with historical intensity or benchmarking allocations. For the compliance year 2024, these covered entities received pre-allocated allowance equal to 70% of their 2023 emissions. Ahead of the compliance deadline in 2025, the competent authority adjusted the allowance based on the verified production output in 2024.

AUCTIONING: Auctioning was introduced in 2021. A small share of the annual cap could be auctioned. The main purpose of auctions is to provide compliance entities with additional supply to meet their compliance demand. To date, auctions have been held on an ad hoc basis. Four auctions have been held, in November and December 2021, February 2022, and March 2024.

Chongqing uses a capping mechanism for compliance obligations. If the difference between an entity's annual verified emissions and the allocation exceeds either 20% of the allocation or 100,000 tCO_2 (above or below the allocation), the entity's total emissions limit will be adjusted accordingly to balance out the surplus or deficit.[5]

USE OF REVENUES

General budget, including debt reduction

Revenues are attributed to the city treasury.

FLEXIBILITY & LINKING

BANKING AND BORROWING

Banking is allowed.
Borrowing was not allowed from 2014 to 2020. In the 2021 to 2022 and 2023 allocation plans, borrowing was allowed. Companies with a shortfall of 10% or more could apply to borrow from a pre-allocated allocation for 2024. In the 2024 allocation plan, companies with a shortfall of 5% or more could apply to borrow from a pre-allocated allocation for 2025.

Any remaining free allowances held by covered entities integrated into the National Carbon Market must be cancelled within three years.

OFFSET CREDITS

The use of offset credits is allowed. Since September 2021, a local carbon offset program has been operating, generating Chongqing Certified Emission Reduction (CQCER) credits for both compliance and voluntary use.

QUANTITATIVE LIMITS: Both China Certified Emissions Reductions (CCERs) and CQCERs are allowed for up to 5% of an entity's compliance obligation.

QUALITATIVE LIMITS: For compliance year 2024, Chongqing also allows entities to offset up to 8% of the shortfall in allowance with eligible green electricity purchases to cover up to 2,000 tonnes of their emissions.

LINKS WITH OTHER SYSTEMS

The Chongqing ETS is not linked with any other system.

OTHER CARBON PRICING INSTRUMENTS IN THE JURISDICTION

ETS: China's National Carbon Market
Domestic crediting mechanisms: CQCER
Domestic crediting mechanism (national): CCER

COMPLIANCE

COMPLIANCE MECHANISM

Covered entities must surrender one compliance unit (allowance, CCER, or CQCER) per tCO_2e emitted for all their covered emissions, and allocation is based on auctions or free allocation.

COMPLIANCE PERIOD

One calendar year. The exact date for the covered entities to surrender allowances is set by the government on an annual basis and varies across years.

MRV

FRAMEWORK: The competent authority has published a guidance document for monitoring and reporting that includes methods for different emissions sources, including combustion, industrial processes, and electricity consumption.

MONITORING: Covered entities are required to set up and follow monitoring plans.

REPORTING: Reporting of GHG emissions must be complete by the end of April for the previous year.

VERIFICATION: Third-party verification is required.

5 Two types of limits (upper and lower).

PENALTIES AND ENFORCEMENT

There are no financial penalties for non-compliance. Non-financial penalties may include public reporting, and a record entered in the Chongqing City Enterprise environmental credit system.

MARKET REGULATION

MARKET DESIGN

MARKET PARTICIPATION: Compliance and non-compliance entities and individuals that meet the requirements of the carbon emission trading rules.

MARKET TYPES:

Primary: Allowances thus far have largely been allocated for free, with auctioning introduced in 2021 without a fixed schedule.

Secondary: There is a spot market at Chongqing Carbon Emissions Trading Center for trading of allowances, CCERs, and CQCERs. Due to the financial market-related regulations in China, no forward markets or derivatives are allowed yet.

LEGAL STATUS OF ALLOWANCES: Allowances are not considered financial instruments.

MARKET STABILITY PROVISIONS

RESERVE

Instrument type: Price-based instrument

Functioning: 5% of allowances from the total emissions limit may be set aside for market stability. The Chongqing EEB can organize irregular auctions according to market demand, no fixed triggers are envisaged.

EXCHANGE

Instrument type: Price-based instrument

Functioning: The Chongqing Asset and Equity Exchange implements a system of limits on price increases and decreases for trading over the exchange. For listed trading, this is 10% above or below the reference price (the weighted average price of all transactions on the previous trading day). For block trading (with a minimum trading volume of 10,000 tonnes), this is 30% above or below the reference price. Only transactions within this price range can be successfully completed on the exchange.

OTHER INFORMATION

INSTITUTIONS INVOLVED

Chongqing Ecology and Environment Bureau: Responsible for establishing the Chongqing ETS after governmental restructuring in 2019.

Chongqing Carbon Emissions Trading Center: Responsible for operating the trading platform, which belongs to the Chongqing Asset and Equity Exchange.

Chongqing Climate Change Response and Development Center (Chongqing Resource and Environment Trading Center): Responsible for the registry.

EVALUATION/ETS REVIEW

No public information is available about the evaluation or review system. However, the Chongqing EEB has been revising the major managements rules since 2021.

REGULATORY FRAMEWORK

- → Management rules of Emissions Trading in Chongqing (2023)
- → Chongqing Working Guidance For Carbon Dioxide Peaking and Carbon Neutrality in Full and Faithful Implementation of the New Development Philosophy (2022)
- → Management Rules of Allowance in Chongqing (2023)
- → MRV Guidelines for Chongqing ETS (2022)
- → Chongqing Allowance Allocation Plan for 2024 (2025)
- → Management Rules of Verification agency in Chongqing (2025)

FUJIAN

FUJIAN EMISSIONS TRADING SYSTEM

- Not one of the original seven regional pilots
- Own provincial offset credit scheme with focus on carbon sinks and forestry
- Broad sectoral coverage

ETS DESCRIPTION

The province of Fujian launched its ETS in September 2016. It covered 248 entities across nine sectors in 2024: electricity grid, petrochemicals, chemicals, building materials, iron and steel, nonferrous metals, paper, aviation, and ceramics. The ETS covered electricity generation until 2020, and the steel (ironmaking and sintering processes), cement, and aluminum sectors until 2023, after which they were incorporated into the National Carbon Market.

Covered entities must surrender allowances for all their covered emissions, and allocation is based predominantly on free allocation, using benchmarking or grandparenting based on production levels. Auctioning may take place when considered appropriate by the ETS authorities.

The Fujian ETS pilot has a special focus on carbon sinks. In 2017, the Fujian government outlined a plan to promote forestry offset projects in the province. By the end of 2024, 4.1 million forestry offset credits had been traded in the Fujian ETS.

Unlike other Chinese pilots, which were mandated by the National Development and Reform Commission (NDRC), the mandate for the Fujian ETS came from the State Council with the endorsement of the "National Ecological Civilization Pilot Area (Fujian) Implementation Plan". In the short term, it operates in parallel with the national carbon market. As China's National Carbon Market expands to new sectors, covered entities in these sectors will be integrated into it.

YEAR IN REVIEW

In December 2024, the Fujian Provincial Ecology and Environment Bureau (EEB) issued the "Work Plan for Establishing carbon inclusive system", which sets the roadmap to establish provincial offset system and link it to Fujian ETS.

In November 2025, the EEB released the allocation plan for 2024. The allocation plan is similar to the 2023 one, with slightly tightened benchmarks and changes to the base year for the grandparenting method. It confirmed that covered entities from the steel (ironmaking and sintering processes), cement, and aluminum sectors are integrated into the China's National Carbon Market.

In force
Under development
Under consideration

SECTORS

INDUSTRY

DOMESTIC AVIATION

CAP OR TOTAL EMISSIONS LIMIT

Intensity-based emissions limit[1]
116.2 $MtCO_2$ (2022)

GREENHOUSE GASES

CO_2

OFFSET CREDITS

Domestic (national and provincial), with quantitative limits

ALLOCATION

Free Allocation: Grandparenting
Free Allocation: Output-based Benchmarking
Auctioning

AVERAGE 2025 PRICES

Average secondary market price: CNY 24.81 (USD 3.45)

TOTAL REVENUE

CNY 1.25 million (USD 173,856) since beginning of program[2]

1 Fujian ETS applied output-based benchmarking, output-based historical intensity allocation, and grandparenting based on historical emissions for different sectors.
2 The Fujian ETS has held only one auction, in 2016, which provided 50,000 allowances at a floor price of CNY 25 (USD 3.48) per tonne. The exchange did not disclose the final volume and price. The calculation here assumes that all allowances were sold at the floor price.

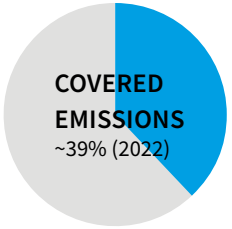
EMISSIONS & TARGETS OF FUJIAN

OVERALL GHG EMISSIONS (including indirect CO_2, excluding LULUCF), **2022**
299.2 $MtCO_2$[3]

GHG REDUCTION TARGETS
By 2030: Peak CO_2 emissions ("Carbon Working Guidance")
By 2060: Achieve carbon neutrality (Carbon Working Guidance)

ETS COVERAGE & PHASES

COVERED EMISSIONS 2022
~39%[4]



CAP OR TOTAL EMISSIONS LIMIT
A cap limits the total emissions allowed in the system.
The cap in recent years has been as follows:

2016 to 2018: ~200 $MtCO_2$
2019: ~220 $MtCO_2$[5]
2020: ~126 $MtCO_2$
2021: 131.7 $MtCO_2$
2022: 116.2 $MtCO_2$

The cap comprises three elements: existing entities' allowances, the new entrants' reserve, and the market stability reserve.

SECTORS AND THRESHOLDS
Petrochemicals, chemicals, building materials, iron and steel, nonferrous metals, paper, aviation, and ceramics. Electricity production was covered until 2020, after which it was integrated into China's National Carbon Market. Steel, cement, and aluminum smelter sectors were integrated into the National Carbon Market from 2024.

INCLUSION THRESHOLDS:
2016 to 2019: Companies with energy consumption of 10,000 tonnes of coal equivalent (tce) per year, for any year between 2013 and 2019.
2020 to 2021: Companies with energy consumption of 5,000 tce or more in any year from 2013 to 2020.
2022 to 2023: Companies with energy consumption of 5,000 tce or more in any year from the latest four years.
2024: Companies with energy consumption of more than 5,000 tce or annual CO_2 emissions of more than 13,000 tonnes in any year from the last three years.

POINT OF REGULATION
Point source (industry, aviation); downstream (indirect emissions from electricity and heat consumption).

TYPE OF ENTITIES
Companies

NUMBER OF ENTITIES
248 entities (2024)

ALLOWANCE ALLOCATION & REVENUE

ALLOWANCE ALLOCATION
Allowances are distributed for free, using benchmarking or grandparenting. The allocation plan is updated every year. For the compliance year 2024:

FREE ALLOCATION:
Benchmarking: Benchmarking is applied to the grid operator, plate glass, chemical and aviation sectors.

Grandparenting: The remaining sectors are allocated allowances based on historical carbon intensity and actual output. These entities can also apply for more allowances as a reward for early mitigation action.

According to the 2024 allocation plan, compliance obligations are limited. For sectors using the benchmarking method, the minimum allocation is 80% of their verified emissions and the maximum is 120%. For sectors using historical intensity methods, the surplus or shortfall is limited to 3% to 10% of verified emissions, according to their emission levels. On top of this limitation, the maximum amount of surplus or shortfall is 200,000 tCO_2e.

AUCTIONING: Auctioning may take place when considered appropriate by the ETS authorities (see 'Market Stability Provisions' section) and may be introduced as a method for allowance allocation over time. Up to 10% of the total cap is reserved for market intervention.

3 No data is publicly available for more recent years. Data here is provided by local experts. Previously reported data is based on public sources from the launch year of the ETS in 2014, of 240.0 $MtCO_2$.
4 No data is publicly available for recent years. This percentage is the covered emissions in Fujian ETS including both direct and indirect emissions divided by the total direct emissions in Fujian in 2022.
5 There is no public data on the total cap or its elements. This number is based on an estimate by experts. The cap for 2019 was estimated to cover 87% of carbon emissions.

In order to increase market liquidity and price discovery, the Fujian DRC organized a discriminatory (non-uniform price) auction of 50,000 allowances in 2016 from the government reserve, with settlement prices ranging from CNY 26.50 (USD 3.69) to CNY 30 (USD 4.17). No further auctions have taken place to date.

USE OF REVENUES


General budget, including debt reduction

Revenues are attributed to the central treasury.

FLEXIBILITY & LINKING

BANKING AND BORROWING

Banking is allowed.
Borrowing is not allowed.

OFFSET CREDITS

The use of domestic project-based carbon offset credits (China Certified Emission Reductions, or CCERs) and Fujian Forestry Certified Emission Reduction credits (FFCERs) is allowed.

QUANTITATIVE LIMITS: The use of FFCER and CCER offset credits are limited to 5% of the annual compliance obligation.

QUALITATIVE LIMITS: Eligible offset credits are restricted to those generated in Fujian province from entities not regulated under the ETS, and from CO_2 or CH_4 reduction projects. Hydropower-related offset credits are not eligible. FFCER projects from three project types (afforestation, forest management, and bamboo management) are eligible if implementation took place after mid-February 2005 and if the project developers have independent legal status.

In the 2024 compliance year, 928 offset credits were used for compliance.

LINKS WITH OTHER SYSTEMS

The Fujian ETS is not linked with any other system.

OTHER CARBON PRICING INSTRUMENTS IN THE JURISDICTION

ETS: China's National Carbon Market
Domestic crediting mechanisms: FFCER
Domestic crediting mechanism (national): CCER

COMPLIANCE

COMPLIANCE MECHANISM

Covered entities must surrender one compliance unit (allowance or offset credit) per tCO_2e emitted for all their covered emissions, and allocation is based primarily on free allocation.

COMPLIANCE PERIOD

One calendar year. Covered entities have until the end of June of the following year to surrender allowances.[6]

MRV

FRAMEWORK: The Fujian DRC and the Fujian Statistical Bureau jointly released a guiding document on GHG emissions monitoring and reporting that includes a monitoring plan template, and guidelines for national measuring and reporting.

MONITORING: Covered entities are required to set up and follow monitoring plans.

REPORTING: Annual reporting of CO_2 emissions to the competent authority by the end of February of the year following the reporting year.

VERIFICATION: Third-party verification is required for all annual emissions reports. In addition, re-verification is required for some reports to further enhance accuracy; this process is called "fourth-party verification" in China.

PENALTIES AND ENFORCEMENT

REGULATED ENTITIES: Penalties for failing to submit an emission or verification report on time, providing false information, or disturbing the verification process range from CNY 10,000 (USD1,391) to CNY 30,000 (USD 4,172). Companies failing to surrender enough allowances to match their emissions are fined between one to three times the average market price of the past 12 months per missing allowance, with a maximum limit of CNY 30,000 (USD 4,172). Additionally, twice the amount of the missing allowances can be withdrawn from the account of the company or deducted from the following year's allocation.

TRADING INSTITUTIONS: Penalties for misconduct, such as not publishing relevant trading information, failing to establish and implement a risk management system or leaking commercial secrets, can range from CNY 10,000 (USD 1,391) to CNY 30,000 (USD 4,172).

THIRD-PARTY VERIFIERS: Penalties for misconduct, such as publishing false reports, reporting with errors, leaking commercial secrets, or participating in the market, can range from CNY 10,000 (USD 1,391) to CNY 30,000 (USD 4,172).

6 This is according to the "Interim Measures of the Fujian ETS". In practice, the provincial government releases executive notices to guide the timeline of the annual compliance cycle.

In addition, in 2018, the Fujian DRC released guidelines concerning ETS non-compliance information management, providing further details on recording of misbehaviors and corresponding incentives and penalties. Incentives for ETS compliance include priority lending and priority approval for government financial support. Punishments for non-compliance include restrictions on approval of new projects, increased frequency of inspections, and a record in the bank credit system.

MARKET REGULATION

MARKET DESIGN

MARKET PARTICIPATION: Compliance entities and institutional investors (domestic only) that meet the requirements of the emissions trading rules set up by Fujian EEB.

MARKET TYPES:

Primary: While most allowances are allocated for free, the Fujian Haixia Equity Exchange organizes ad hoc auctions for the primary market. So far, only one auction has been held.

Secondary: Spot trading of Fujian Emission Allowances (FJEA), CCERs, and FFCERs takes place on the Haixia Resources and Environment Exchange.

LEGAL STATUS OF ALLOWANCES: Allowances are not considered financial instruments.

MARKET STABILITY PROVISIONS

RESERVE

Instrument type: Price-based instrument

Functioning: 5% of the sum of the calculated allowance from covered entities is kept as a government reserve for market stabilization. The Fujian EEB can organize irregular auctions according to market demand, no fixed triggers are envisaged.

EXCHANGE

Instrument type: Price-based instrument

Functioning: The exchange limits day-to-day price fluctuations to a 10% move in either direction for listed trading, as well as 30% for block trading. Only transactions within this price range can be successfully completed on the exchange.

OTHER INFORMATION

INSTITUTIONS INVOLVED

Fujian Provincial Ecology and Environment Bureau: Responsible for establishing the Fujian ETS after governmental restructuring in 2019.

Haixia Resources and Environment Exchange: Responsible for operating the trading platform.

Fujian Information Center of Ecology and Environment: Responsible for operating the registry, market management, and MRV administration.

EVALUATION/ETS REVIEW

Research on improving the Fujian ETS has been undertaken every year, funded by the local government.

REGULATORY FRAMEWORK

→ 2020 Amendments to the Interim Measures

→ Fujian Provincial Ecology and Environment Bureau – Allocation Plan for 2024

GUANGDONG

GUANGDONG PILOT EMISSIONS TRADING SYSTEM

- Largest Chinese regional market with ongoing scope expansion and highest spot trading volume among pilots
- Diverse market participants, including foreign investors
- First pilot to introduce auctioning as well as Carbon Inclusive Offset Mechanism for compliance[3]

ETS DESCRIPTION

The Guangdong ETS was launched in December 2013. With broad sectoral coverage, the Guangdong ETS is the largest of the Chinese ETS pilots, in terms of market size and spot trading volume. Covered entities must surrender allowances for all their covered emissions, and allocation is based on auctions or free allocation.

The Guangdong ETS covers emissions from over 258 entities in the petrochemicals, paper, domestic aviation, ceramics (building and sanitary), transportation (port) industries, and data centers. Allowances are primarily allocated for free, and allowance auctions have been conducted since the launch of the pilot in 2013. In recent years, the Guangdong ETS has introduced new measures to enhance market liquidity and is one of the regional pioneers for forward trading of emissions allowances in China.[4]

The Guangdong ETS was the fourth largest ETS in the world before the power sector was integrated into China's National Carbon Market in 2020. In 2024, the cement and steel sectors were also integrated into the National Carbon Market.

YEAR IN REVIEW

In March 2025, the Guangdong Ecology and Environment Bureau (EEB) released the 2024 allocation plan. The emissions limit dropped from nearly 300 $MtCO_2$ to 94 $MtCO_2$, reflecting the transfer of the cement and steel sectors into the National Carbon Market.

According to the allocation plan, the Guangdong ETS continues to cover the petrochemicals, paper, domestic aviation, ceramics production, ports, and data center sectors. In addition to airports and textile companies, public building above the threshold may now participate in the Guangdong ETS on a voluntary basis.

The 2024 allocation plan also clarified the accounting and management of remaining free allowances from enterprises that have been incorporated into the National Carbon Market. These remaining allowances are now frozen and designated as Special Guangdong Emission Allowance (S-GDEAs). The S-GDEAs and will be unfrozen gradually over a three-year period and may be used to offset compliance obligations when used together with Carbon Inclusive Certified Emission Reductions (PHCERs).

In 2024, only one entity failed to comply and was issued a rectification order.

1 The Guangdong Pilot ETS covers direct and indirect emissions from service industries in public buildings, such as ports and data centers.
2 Guangdong ETS applied output-based benchmarking, and output-based historical intensity allocation methods for different sectors.
3 A local voluntary offset scheme with credits generated via mitigation projects or low-carbon activities. The resultant credits are known as Carbon Inclusive Certified Emission Reductions (PHCERs).
4 China is still in the exploratory and research stage of carbon futures trading; according to the "Administrative Regulations on Futures Trading" document, futures can only be traded on approved professional futures exchanges. Regional ETS pilots thus cannot introduce futures trading; however, a few have developed their own unique carbon forward trading products.

In force
Under development
Under consideration

SECTORS

INDUSTRY
BUILDINGS[1]
DOMESTIC AVIATION

CAP OR TOTAL EMISSIONS LIMIT

Intensity-based emissions limit[2]
94 $MtCO_2$ (2024)

GREENHOUSE GASES

CO_2

OFFSET CREDITS

Domestic (national and provincial), with quantitative limits

ALLOCATION

Free Allocation: Grandparenting
Free Allocation: Output-based Benchmarking
Auctioning

AVERAGE 2025 PRICES

Average auction price: CNY 39.10 (USD 5.44)
Average secondary market price: CNY 36.78 (USD 5.11)

TOTAL REVENUE

CNY 815.46 million (USD 113.40 million) since the beginning of the program

EMISSIONS & TARGETS OF GUANGDONG

OVERALL GHG EMISSIONS (including indirect CO_2, excluding LULUCF), 2022

619.4 $MtCO_2$[5]

GHG REDUCTION TARGETS

By 2025: 20.5% reduction in CO_2 intensity compared to 2020 levels (in line with central government requirement) ("Guangdong Province 14th Five-Year-Plan for Tacking Climate Change")

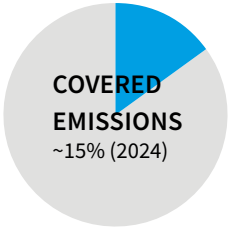
By 2030: Peak carbon emissions ("Guangdong Province Implementation Opinions on Implementing the New Development Concept and Promoting Carbon Neutrality")

By 2060: Climate neutrality (Guangdong Province Implementation Opinions on Implementing the New Development Concept and Promoting Carbon Neutrality)

ETS COVERAGE & PHASES

COVERED EMISSIONS 2024

~15%[6]



PHASES

PHASE 1: Three years (2013 to 2015)
PHASE 2: Five years (2016 to 2020)
PHASE 3: Ongoing (2021 to present)

CAP OR TOTAL EMISSIONS LIMIT

The total emission limit under the Guangdong ETS changes as a function of production (output) and is the sum of the bottom-up output-based/installation-level emissions limits for all individual covered entities. The bottom-up emissions limits do not represent an absolute cap. Guangdong is one of few pilots in China that announces its annual emissions cap. Within the annual cap, the government also keeps a certain amount as a reserve for new entrants and market stability (see 'Market Stability Provisions' section).

PHASE 1:
2013: 388 $MtCO_2$ (including 38 $MtCO_2$ reserves)
2014: 370 $MtCO_2$ (including 38 $MtCO_2$ reserves)
2015: 408 $MtCO_2$ (including 38 $MtCO_2$ reserves)

PHASE 2:
2016: 386 $MtCO_2$ (including 21 $MtCO_2$ reserves)
2017: 422 $MtCO_2$ (including 23 $MtCO_2$ reserves)
2018: 422 $MtCO_2$ (including 23 $MtCO_2$ reserves)
2019: 465 $MtCO_2$ (including 27 $MtCO_2$ reserves)
2020: 465 $MtCO_2$ (including 27 $MtCO_2$ reserves)

PHASE 3:
2021: 265 $MtCO_2$ (including 13 $MtCO_2$ reserves)[7]
2022: 266 $MtCO_2$ (including 13 $MtCO_2$ reserves)
2023: 297 $MtCO_2$ (including 14 $MtCO_2$ reserves)
2024: 94 $MtCO_2$ (including 6.5 $MtCO_2$ reserves)[8]

SECTORS AND THRESHOLDS

PHASE 1:
Power, iron and steel, cement, and petrochemicals

PHASE 2:
2016: Power, iron and steel, cement, aviation, petrochemicals, and papermaking.
Electricity production was covered until 2020, after which it was integrated into the National Carbon Market.

PHASE 3:
2021: Iron and steel, cement, papermaking, aviation, and petrochemicals
2022: As above, plus ceramics, textiles, and data centers
2023: As above, plus ceramics (building and hygiene) and transportation (ports)
2024: Steel and cement were integrated into the National Carbon Market.

INCLUSION THRESHOLDS:
2013 to 2021: Companies with emissions of at least 20,000 tCO_2 per year or energy consumption of 10,000 tce per year

2022 onwards: Companies with emissions of at least 10,000 tCO_2 per year or energy consumption of 5,000 tce per year

POINT OF REGULATION

Point source (industry, aviation); downstream (indirect emissions from electricity and heat consumption).

5 No data is publicly available for recent years. Data here is provided by local experts.
6 No data is publicly available for recent years. This percentage is the covered emissions in Guangdong ETS including both direct and indirect emissions divided by the total direct emissions in Guangdong in 2022.
7 The drop from 2020 is largely due to the transfer of the power sector into the National Carbon Market.
8 The drop from 2024 is largely due to the transfer of the cement and steel sectors into the National Carbon Market.

TYPE OF ENTITIES
Companies

NUMBER OF ENTITIES
258 existing entities, eight new entrants (2024)

ALLOWANCE ALLOCATION & REVENUE

ALLOWANCE ALLOCATION
Allowances are distributed largely for free, using benchmarking or grandparenting based on output data.

The allocation plan is updated every year. For the compliance year 2024:

FREE ALLOCATION: Allowances are distributed primarily via free allocation through grandparenting based on historical emissions or emissions intensity, or benchmarking.

Benchmarking: Benchmarking is applied to industrial processes in papermaking, data center and domestic aviation sectors.

Grandparenting: Grandparenting on the basis of total historical emissions is applied to some processes in the petrochemicals industry, as well as voluntary participants from textile industry and public buildings.

Grandparenting on the basis of historical emissions intensity is also applied to coal-to-hydrogen plants in the petrochemical industry, special paper and paper product manufacturers, enterprises with chemical pulp manufacturing, other aviation enterprises, ceramic (building and hygiene) and ports. Airport enterprises that participate voluntarily also use this method.

Ex-post adjustments based on real production data of the respective compliance year are applied for those sectors that use benchmarks and emissions intensity methods. For the compliance year 2024, these covered entities will receive the same volume of allowances as in compliance year 2023 as pre-allocation. New entrants will receive pre-allocated allowances based their emissions in the previous year. Before the compliance deadline in 2025, the competent authority supplemented or deducted allowances, based on the verified output in 2024.

Guangdong ETS applies different free allocation factors in different sectors. The remaining allowances will be auctioned in a sale open to all market participants.
In 2024:
- 95% of allowances for entities in petrochemicals, papermaking, domestic aviation, ceramics, ports, and data centers were allocated for free.
- 97% of allowances for covered entities in textiles, airports, and public buildings that voluntarily participated were allocated for free.
- 90% of allowances for covered entities as new entrants were allocated for free.

AUCTIONING: Guangdong auctions a small share of allowances.

Quarterly auctions were held until 2016; since 2017, they have been on an ad hoc basis. Auctions are also subject to a reserve price (see 'Market Stability Provisions' section).

The last auction for the compliance year 2024 took place in June 2025, with 110,000 allowances available. The floor price was CNY 39.10 (USD 5.44). Three new entrants participated in the auction, and 107,349 allowances were sold at the floor price.

USE OF REVENUES


General budget, including debt reduction

Revenues are attributed to the provincial treasury.

FLEXIBILITY & LINKING

BANKING AND BORROWING
Banking is allowed. These remaining allowances from cement and steel sectors are now frozen and designated as S-GDEAs. They will be unfrozen gradually over a three-year period.
Borrowing is not allowed.

OFFSET CREDITS
The use of offset credits, namely Chinese Certified Emissions Reductions (CCERs) and PHCERs, stemming from a local offset program introduced in 2017, is allowed. Since 2024, covered entities may also use S-GDEAs to offset part of their compliance obligation.

QUANTITATIVE LIMITS: The use of offset credits is limited to 10% of covered entities' annual emissions. In addition to the quantitative limit applied to individual entities, Guangdong sets an upper limit on the total volume of offset credits allowed. In 2020, entities could use up to 1.5 million offset credits towards compliance obligations, with priority given to CCERs and PHCERs from projects within Guangdong. In 2021 and 2022, entities could use up to one million offset credits for compliance. For 2023, no quantitative limit was announced. In 2024, entities generally could use up to 0.5 million offset credits for compliance.

QUALITATIVE LIMIT: At least 70% of offset credits (CCERs and/or PHCERs) used by each covered entity must come from within Guangdong province. If an entity applies to use S-GDEAs, they must be used in conjunction with PHCERs. The PHCERs must account for no less than 70% of the total combined use.

Pre-CDM credits are not eligible. Offset credits from hydropower and from most fossil fuel projects are also not eligible. Offset credits generated in other Chinese ETS pilot regions are not eligible.

OFFSET CREDIT AUCTIONS: Guangdong employs auctioning for PHCERs on an ad hoc basis since 2021, with an auction reserve price set by the local exchange and offset project developers. In 2021, six PHCER auctions were held. No auctions were held in 2022. In 2023, four PHCER auctions were held.

In compliance year 2024, 50,721 offset credits were surrendered for compliance purposes.

LINKS WITH OTHER SYSTEMS

Guangdong plans to explore the feasibility of the construction of a joint or linked carbon market within the Guangdong-Hong Kong-Macao Greater Bay Area. Details of such a plan are not yet available.

Guangdong and Hubei explored linking their pilot markets in 2012 and 2013, but the linking did not materialize.

OTHER CARBON PRICING INSTRUMENTS IN THE JURISDICTION

ETS: China's National Carbon Market
Domestic crediting mechanisms: Carbon Inclusive Offset Mechanism in Guangdong (PHCER)
Domestic crediting mechanism (national): Chinese Certified Emissions Reductions (CCER)

COMPLIANCE

COMPLIANCE MECHANISM

Covered entities must surrender one compliance unit (allowance or offset credit) per tCO_2e emitted for all their covered emissions.

COMPLIANCE PERIOD

One calendar year. Covered entities have until June or August of the following year to surrender allowances.

MRV

FRAMEWORK: The Department of Ecology and Environment of Guangdong Province (GDEE) revised "Reporting Guidelines for Covered Entities in Guangdong ETS" and verification guidelines for third-party auditors in 2025.

MONITORING: Covered entities are required to set up and following monitoring plans.

Industrial enterprises with annual emissions of 5,000 to 10,000 tCO_2 are also required to monitor and report their emissions, albeit with no compliance obligation. Verification is not required.

REPORTING: Annual. In 2026, covered entities must have submitted the 2025 annual emission report by April 15.

VERIFICATION: Third-party verification is required. In addition, further verification was initially carried out by government-assigned expert groups in the first three compliance years. Onsite cross re-verification was conducted for entities with questionable verification reports, as well as for randomly selected entities. The verification of 2024 annual emissions reports was finalized by the end of June 2025.

A "fourth-party independent evaluation system" has been in place since the 2016 compliance period. "Technical evaluation organizations" selected by the government carry out technical review and evaluation of annual emissions and verification reports and undertake further onsite review and random inspection. These organizations do not undertake regular third-party verification tasks. The government also conducts random checks on emissions reports.

PENALTIES AND ENFORCEMENT

ENTITIES: Penalties for failing to submit emissions or verification reports on time range from CNY 10,000 (USD 1,391) to CNY 50,000 (USD 6,954). Companies failing to surrender sufficient allowances are deducted twice the number of allowances from the following year's allocation and fined CNY 50,000 (USD 6,954). Other non-financial penalties include negative impacts on access to bank loans and subsidy programs.

TRADING INSTITUTIONS: Penalties for failing to publish transaction information or failing to establish and implement a risk management system range from CNY 10,000 (USD 1,391) to CNY 50,000 (USD 6,954).

THIRD-PARTY VERIFIERS: Third-party agencies are fined between CNY 30,000 (USD 4,173) and CNY 50,000 (USD 6,954) for issuing false verification reports, material errors in verification reports, or for unauthorized use or publication of confidential corporate and emissions information.

MARKET REGULATION

MARKET DESIGN

MARKET PARTICIPATION: Compliance entities; domestic and international institutional investors that meet the requirement of the carbon emission trading rules set by China Emissions Exchange (CEEX).

MARKET TYPES:

Primary: As the first Chinese region to introduce auctioning as a method for allowance allocation, Guangdong held quarterly auctions until 2016. Since 2017, auctions have been held on an ad hoc basis. The CEEX organizes auctions for the primary market.

Secondary: The Guangdong Emissions Allowance is the main spot trading product in the secondary market. Bidding transfer was introduced in 2020 to organize auctions for covered entities to enhance market efficiency. CCERs and PHCERs are also traded in the secondary market. All products are traded on the CEEX.

Due to the financial market regulations in China, no standardized forward markets or derivatives are allowed. However, with the April 2021 establishment of the Guangzhou Futures Exchange, Guangdong is seeing new momentum to study and explore the launch of carbon futures and other innovative financial products.

LEGAL STATUS OF ALLOWANCES: Allowances are not considered financial instruments.

MARKET STABILITY PROVISIONS

AUCTION RESERVE PRICE

Instrument type: Price-based instrument

Functioning: In 2015, a "policy reserve price" was set as an effective reserve price, which links the auction reserve price with the secondary market price. Each year, 5% of allowances are set aside as government reserves for new entrants and market stability. The specific rules for market stability are provided by the "Trial Measures for ETS".

In 2016, the policy reserve price was set at 100% of the weighted average price for allowances over the previous three months. When auctions resumed in April 2020 for the compliance year 2019, the policy reserve price was set at 90% of the weighted average price for allowances over the previous three months, considering the impact of the COVID-19 pandemic. In the latest auction in June 2025, the reserve price was based on the weighted average price for allowances over the preceding three months.

EXCHANGE

Instrument type: Price-based instrument

Functioning: The CEEX Guangzhou implements a system of limits on price increases and decreases for trading over the exchange. This is 10% above or below the reference price (the weighted average price of all transactions on the previous trading day) for listed trading, as well as 30% for block trading. Only transactions within this price range can be successfully completed within the Exchange.

OTHER INFORMATION

INSTITUTIONS INVOLVED

Department of Ecology and Environment of Guangdong Province (GDEE): Responsible for ETS affairs, including MRV and administrating the registry.

China Emissions Exchange Guangzhou (CEEX): Responsible for operating the trading platform.

EVALUATION/ETS REVIEW

No public information about the evaluation or review system is available. However, the Guangdong Research Center for Climate Change has published a biannual/annual report on the Guangdong ETS with an overview of its performance from 2013 to 2021. In addition, research on improving MRV and allowance allocation has been undertaken, funded by the local government.

REGULATORY FRAMEWORK

- → Implementation Plan of Guangdong Emissions Trading to Support Peaking Carbon Emissions and Achieving Carbon Neutrality (2023-2030)
- → Trial Measures for Carbon Emissions Trading in Guangdong (2014)
- → GDEE – Regulations of PHCER trading management
- → GDEE - Allocation Plan for 2024

HUBEI

HUBEI PILOT EMISSIONS TRADING SYSTEM

- Among the largest Chinese pilots, with diversified participants and an established market stability mechanism
- Sets a threshold which applies to all industrial sectors
- Hubei Province operates the National Carbon Market registry system

ETS DESCRIPTION

The Hubei Pilot ETS was launched in April 2014. Covered entities must surrender allowances for all their covered emissions, and allocation is based on auctions or free allocation.

Hubei's system covers around 500 entities in a broad range of industrial sub-sectors and data centers. Unlike the other Chinese pilots, Hubei does not pre-define which sectors are covered under its ETS; rather, it sets a threshold which applies to all industrial sectors. Allowances have primarily been freely allocated, through both grandparenting and benchmarking, although several ad hoc auctions have been held since 2014.

Hubei has been one of the most active regional markets in China and has the second largest market, in terms of spot trading volume, after Guangdong. It is also one of the regional pioneers for allowance forward trading in China. Hubei has also played an important role in the National Carbon Market: in 2017, it was selected to lead the development of the registry for the National Carbon Market, which the China Hubei Emission Exchange has operated since the National Carbon Market began. In 2022, Hubei established the China Carbon Emissions Registration and Clearing Co., Ltd. in Wuhan to manage the registry and clearing system for the National Carbon Market.

The Hubei ETS operates in parallel with China's National Carbon Market. As the National Carbon Market expands, covered entities in these sectors are being integrated into the national system.

YEAR IN REVIEW

In November 2024, the Hubei Ecology and Environment Bureau (EEB) issued the "Work Plan for Establishing and Implementing Carbon Inclusive System (2024 to 2027)", which sets the roadmap to establish provincial offset credits system and link it to Hubei ETS. In June 2025, Hubei EEB conducted a public consultation for "Hubei Carbon Inclusive Emission Reductions Management Measures (Trial)", which will regulate the issuance, administration, and usage of the provincial offset mechanism.

In January 2025, Hubei announced that all covered entities surrendered their compliance units for compliance year 2023.

In June, the Hubei EEB issued the "Work Plan for expanding the coverage of Hubei ETS". It sets the plan to lower inclusion threshold, brings in certain transport sub-sectors and public buildings, and adds coverage of non-CO_2 emissions in selected sectors. The expansion will be implemented over compliance years 2025 to 2027.

1 The Hubei Pilot ETS covers direct and indirect emissions public buildings and data centers.
2 Hubei ETS applies output-based benchmarking, output-based historical intensity allocation, and grandparenting based on historical emissions for different sectors.

In force
Under development
Under consideration

SECTORS

INDUSTRY

BUILDINGS[1]

CAP OR TOTAL EMISSIONS LIMIT

Intensity-based emissions limit[2]
80.7 $MtCO_2$ (2024)

GREENHOUSE GASES

CO_2, CH_4

OFFSET CREDITS

Domestic (provincial), with quantitative limit

ALLOCATION

Free Allocation: Grandparenting
Free Allocation: Output-based Benchmarking
Auctioning

AVERAGE 2025 PRICES

Average secondary market price: CNY 31.47 (USD 4.38)

TOTAL REVENUE

CNY 430.81 million (USD 59.9 million) since the beginning of the program

In October, the Hubei EEB released the 2024 allocation plan, which applies similar allocation methods as the 2023 plan. For paper, automobile manufacturing, and phosphorus chemical industries, output-based benchmarking started to apply. It confirmed that covered entities from the steel, cement, and aluminum sectors have transitioned to the National Carbon Market.

EMISSIONS & TARGETS OF HUBEI

OVERALL GHG EMISSIONS (including indirect CO_2, excluding LULUCF), 2022

372.8 $MtCO_2$[3]

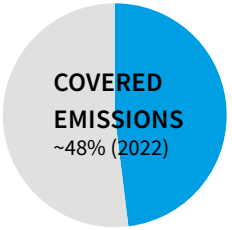
GHG REDUCTION TARGETS

By 2030: Peak carbon emissions ("Hubei Province Implementation Opinions on Implementing the New Development Concept and Promoting Carbon Neutrality")
By 2060: Climate neutrality (Hubei Province Implementation Opinions on Implementing the New Development Concept and Promoting Carbon Neutrality)

ETS COVERAGE & PHASES

COVERED EMISSIONS 2022

~48%[4]



CAP OR TOTAL EMISSIONS LIMIT

The total emission limit under the Hubei ETS changes as a function of production (output) and is the sum of the bottom-up output-based/ installation-level emissions limits for all individual covered entities. The bottom-up emissions limits do not represent an absolute cap. Inclusive of reserves, the caps for past years were as follows:

2014: 324 $MtCO_2$
2015: 281 $MtCO_2$
2016: 253 $MtCO_2$
2017: 257 $MtCO_2$
2018: 256 $MtCO_2$
2019: 270 $MtCO_2$
2020: 166 $MtCO_2$[5]
2021: 182 $MtCO_2$
2022: 180 $MtCO_2$
2023: 179 $MtCO_2$
2024: 80.7 $MtCO_2$

SECTORS AND THRESHOLDS

Unlike other Chinese pilots, Hubei does not pre-define which sectors are covered under its ETS; rather, it sets a threshold which applies to all industrial sectors. Sub-sectors with entities above the threshold are then covered.

Those currently covered include heat supply, iron and steel, nonferrous metals, petrochemicals, chemicals, textiles, glass and other building materials, pulp and paper, ceramics, automobile manufacturing, equipment manufacturing, food and beverages, medicine producers, data centers and water supply. Until 2019, power generation was also covered, after which it was integrated into the National Carbon Market. Steel, cement, and aluminum were integrated into the National Carbon Market from 2024 onwards. From 2025, the Hubei ETS has started to cover certain non-industrial sectors, such as public buildings for data centers.

INCLUSION THRESHOLDS:

Until 2015: Annual energy consumption of more than 60,000 tonnes of coal equivalent (tce) in any year between 2010 and 2011, applying to all energy and industrial sectors.

2016 to 2022: Annual energy consumption of more than 10,000 tce in any of the most recent two years, applying to all energy and industrial sectors.

2023 onwards: Entities with annual emissions of 13,000 tCO_2 or more.

2025: Previously covered sectors plus data centers with annual emissions of more than 5,000 tCO_2 or annual energy consumption of more than 2,000 tce. Methane (CH_4) in paper manufacturing, food and beverages, and pharmaceuticals is covered.

2026: Previously covered sectors plus public buildings with annual emissions of more than 10,000 tCO_2 or annual energy consumption of more than 4,000 tce; cargo ports with annual emissions of more than 5,000 tCO_2 or annual energy consumption of more than 2,000 tce. N_2O and fluorinated gases in industrial sectors will be covered.

2027 (upcoming): Previously covered sectors plus road freight transport with annual emissions of more than 5,000 tCO_2 or annual energy consumption of more than 2,000 tce and cargo ports with annual emissions of more than 3,000 tCO_2 or annual energy consumption of more than 1,000 tce. The threshold for industrial sector companies will be lowered to annual emissions of more than 8,000 tCO_2 or annual energy consumption of more than 3,000 tce.

POINT OF REGULATION

Point source (industry); downstream (indirect emissions from electricity and heat consumption).

3 Due to the lack of publicly available data, the data reported here is estimated by local expert based on public sources.
4 No data is publicly available for recent years. This percentage is the covered emissions in Hubei ETS including both direct and indirect emissions divided by the total direct emissions in Hubei.
5 This decrease is mainly due to the transfer of the power sector into the national ETS.

TYPE OF ENTITIES
Companies

NUMBER OF ENTITIES
499 entities (2024)

ALLOWANCE ALLOCATION & REVENUE

ALLOWANCE ALLOCATION
Allowances are distributed for free, using benchmarking or grandparenting.
The allocation plan is updated every year. For the compliance year 2024:

FREE ALLOCATION:
Benchmarking: Benchmarking is used for plate glass, complete vehicle manufacturing, some paper types (toilet paper, printing paper and corrugated paper), and the phosphorus chemical industry.

Grandparenting: Grandparenting based on historical emissions intensity is used for heat production and supply, other paper making, glass and building materials, water supply, textiles, and equipment manufacturing, based on the previous three years' data.

Grandparenting based on historical emissions or emissions intensity is used for other sectors except data centers.

For compliance year 2024, covered data centers received the number of allowances equal to their verified emissions.

Ex-post allocation adjustments are applied, especially for those sectors that use benchmarks and emissions intensity. In this case, entities first receive a volume of allowances equivalent to 70% of their previous year's verified emissions; actual production data is then used to update allocation ex-post, after verification.

Hubei also uses a "market adjustment factor", which is applied to all covered entities to reduce overall allocation. This is determined based on the previous year's supply-demand balance, while taking the province's overall economic development and the achievement of its climate mitigation targets and strategies into consideration. For the 2024 compliance year, it was set at 0.9344 (as compared to 0.9706 for the previous year). Covered entities that demonstrate strong efforts in reducing both air pollution and carbon emissions and are not subject to environmental penalties in 2024, will apply 0.97 as market adjustment factor.

Hubei uses a capping mechanism for compliance obligations. If the difference between an entity's annual verified emissions and the allocation exceeds either 20% of the allocation or 200,000 tCO_2 (above or below the allocation), the cap will be adjusted accordingly to balance out the surplus or deficit.[6]

AUCTIONING: A small share of the annual cap can be auctioned. The main purpose of auctions is to promote price discovery and provide regulated entities with additional supply to meet their compliance demand. To date, auctions have been held on an ad hoc basis and took place in 2014, 2019, 2020, 2021, 2022, and 2023. Recent years have seen two auctions per year, with the first for covered entities only and the second open to all participants. The reserve price of the auctions is the weighted average spot market price of the previous two years. Allowances have sold at the reserve price or slightly above.

USE OF REVENUES
General budget, including debt reduction

Revenues are attributed to the provincial treasury.

FLEXIBILITY & LINKING

BANKING AND BORROWING
Banking is allowed, but only for allowances that have been traded at least once.
Borrowing is not allowed.

OFFSET CREDITS
The use of provincial credits generated from the Hubei Carbon Inclusive system and green electricity certificates is allowed. The green electricity certificates are the proof of the environmental attributes of China's renewable energy power, which can be commercially transferred between power producers and consumers. The use of Chinese Certified Emission Reductions is no longer allowed since compliance year 2024.

QUANTITATIVE LIMITS: Only covered entities with a shortfall can use green electricity certificates and provincial credits to offset their emissions. This use is limited to the shortage and maximum 5% of the annual initial allocation for each entity. Green electricity certificates cannot be banked to offset the emission in the future.

QUALITATIVE LIMITS: Green electricity certificates must be certified both by the China Hubei Emission Exchange and the Hubei Electricity Exchange.

6 Two types of limits, as opposed to only one, are set based on the consideration that 20% may suit smaller entities better while 200,000 tCO_2 may suit larger ones.

LINKS WITH OTHER SYSTEMS

Though Hubei explored linking with the Guangdong ETS pilot in 2012 and 2013, this did not materialize and there are no further plans for linking.

OTHER CARBON PRICING INSTRUMENTS IN THE JURISDICTION

ETS: China's National Carbon Market
Domestic crediting mechanisms: Carbon Inclusive local offset credits in Hubei
Domestic crediting mechanisms (national): China Certified Emissions Reduction (CCER)

COMPLIANCE

COMPLIANCE MECHANISM

Covered entities must surrender one compliance unit (allowance or offset credit) per tCO_2e emitted for all their covered emissions.

COMPLIANCE PERIOD

One calendar year; covered entities have until the last working day of November of the following year to surrender allowances.

MRV

FRAMEWORK: The Hubei government has released general rules on monitoring and reporting guiding for all sectors. It also released Verification Guidelines for Hubei Province Enterprise Carbon Emission Verification (Trial) to guide the verification agencies and verifiers.

MONITORING: Covered entities are required to set up and implement plans to monitor their emissions.

REPORTING: Annual. Covered entities must submit their emission reports to the Hubei EEB by the end of March in the year following the compliance year.

VERIFICATION: Third-party verification is required. Third-party verifiers may be involved in mutual evaluation of each other's verification reports. In addition, "fourth-party verification" is carried out by government-assigned experts to further enhance accuracy.

PENALTIES AND ENFORCEMENT

COVERED ENTITIES: Penalties for failing to submit an emissions or verification report on time range from CNY 10,000 (USD 1,391) to CNY 30,000 (USD 4,173).

Between CNY 20,000 (USD 2,782) and CNY 30,000 (USD 4,173) can be imposed for non-compliance, in addition to the obligation to surrender the missing number of allowances.

TRADING INSTITUTIONS: Trade participants who manipulate the market face up to CNY 150,000 (USD 20,863) in fines.

THIRD-PARTY VERIFIERS: Verifiers submitting false verification reports face up to CNY 150,000 (USD 20,863) in fines.

MARKET REGULATION

MARKET DESIGN

MARKET PARTICIPATION: Compliance entities; non-compliance entities such as domestic and international institutional investors; individual investors meeting the participation requirements of the relevant local trading exchange.

MARKET TYPES:
Primary: The China Hubei Emission Exchange organizes ad hoc auctions for the primary market. Since 2019, Hubei has held two separate rounds of auctions targeting different types of entities.

Secondary: Spot products include Hubei Emission Allowances (HBEAs) and CCERs. The HBEA spot forward product was introduced in 2016 but has not been traded since May 2017. The China Hubei Emission Exchange manages trading of all products.

LEGAL STATUS OF ALLOWANCES: Allowances are not considered financial instruments.

MARKET STABILITY PROVISIONS

ALLOWANCE RELEASE AND REPURCHASE
Instrument type: Price-based instrument
Functioning: In case of market fluctuations, severe supply-demand imbalances, or liquidity issues, the Hubei EEB – in consultation with an advisory committee consisting of government institutions and other stakeholders – can buy or sell allowances in order to stabilize the market. Specifically, the Hubei EEB takes action if the allowance closing price reaches a low or high point of the daily negotiation range six times during a 20-day period.

6% of the total cap is kept as a government reserve for market stabilization. The Hubei EEB can organize irregular auctions according to market demand, no fixed triggers are envisaged

EXCHANGE
Instrument type: Price-based instrument
Functioning: The exchange limits day-to-day price fluctuations to a 10% move in either direction for listed trading, as well as 30% for block trading. Only transactions within this price range can be successfully completed on the exchange.

OTHER INFORMATION

INSTITUTIONS INVOLVED

Hubei Ecology and Environment Bureau (EEB): Responsible for establishing and overseeing the Hubei ETS after governmental restructure in 2019.

China Hubei Emission Exchange: Responsible for operating the trading platform and registry.

EVALUATION/ETS REVIEW

No information is publicly available regarding the evaluation or review system. However, research on improving the Hubei ETS has been undertaken every year, funded by the local government.

REGULATORY FRAMEWORK

- → Interim Management rules of Emission Management and Trading (2024)
- → Hubei Province Implementation Opinions on Implementing the New Development Concept and Promoting Carbon Neutrality (2022)
- → Hubei Pilot ETS 2024 allocation plan (2025)
- → Work Plan for expanding the coverage of Hubei ETS (2025)

INDIA

CARBON CREDIT TRADING SCHEME (CCTS)

- Government adopted regulations to establish a domestic carbon market
- Intensity-based baseline-and-credit system covering energy-intensive industrial sectors
- Targets have been notified for seven industrial sectors, with compliance obligations for FY2026 and FY2027

ETS DESCRIPTION

The Indian parliament adopted an amendment to the "Energy Conservation Act, 2001" in 2022, providing the legal basis for the establishment of the Carbon Credit Trading Scheme (CCTS) and issuance of carbon credit certificates (CCCs). It provides the legislative framework to establish an Indian carbon market (ICM) and grants the power to issue CCCs for the reduction of emissions.

Following passage of the amendment, the government began work on the institutional and regulatory framework for the CCTS. Following stakeholder consultation, the CCTS was officially notified in June 2023. This notification established an institutional framework, including the National Steering Committee for the Indian Carbon Market (NSCICM), tasked with overseeing the ICM framework. Additionally, roles and responsibilities of the administrator, technical committee, and other stakeholders were defined. CCCs (denominated in 1 tCO_2e) will be issued or surrendered based on performance against emissions intensity targets for covered entities.

In July 2024, the government adopted detailed regulations for the compliance mechanism under the CCTS. It takes the form of an intensity-based baseline-and-credit system, initially covering entities from eight energy-intensive industrial sectors (see 'Sectors and Thresholds' section).

Applying a "gate-to-gate" approach to cover the emissions along the entire value chain, the scope of the CCTS includes both direct emissions from fuel combustion and industrial processes, and indirect emissions from electricity and heat consumption (scope 1 and 2). In addition, some scope 3 emissions are also considered (import and export of intermediary products). It initially covers CO_2 and perfluorocarbons (PFCs).

The CCTS is based on the existing Perform, Achieve and Trade (PAT) scheme – a mandatory energy efficiency scheme covering more than 1,000 entities from 13 energy-intensive sectors – that is being gradually transitioned into a compliance carbon market. The NSCICM, co-chaired by the Ministry of Power and the Ministry of Environment Forest, and Climate Change (MoEFCC), directly oversees the compliance carbon market function, with the Bureau of Energy Efficiency (BEE) acting as administrator of the scheme.

The compliance mechanism will be complemented by a voluntary domestic crediting mechanism that will allow non-covered entities to register eligible projects for GHG emission reduction, removal, or avoidance for the issuance of CCCs. This separate instrument aims to incentivize emission reductions in sectors outside of the compliance market and to increase market liquidity, encompassing a comprehensive approach for GHG reduction.

In force
Under development
Under consideration

SECTORS

INDUSTRY

CAP OR TOTAL EMISSIONS LIMIT

Intensity-based emissions limit

GREENHOUSE GASES

CO_2, PFCs

OFFSET CREDITS

Not allowed

ALLOCATION

Free Allocation: Output-based Benchmarking

YEAR IN REVIEW

A gradual transition from the PAT scheme to the CCTS started in 2025, with seven sectors successfully shifting to the CCTS from FY2026.

The targets for the seven industrial sectors — aluminium, cement, chlor-alkali, pulp and paper, petroleum refining, petrochemicals, and textiles — covering approximately 490 units, were notified in two phases. The first four energy-intensive sectors (aluminium, cement, chlor-alkali, and pulp and paper) were notified in October 2025, with the remaining three sectors notified in January 2026. Based on these targets, entities have legally binding emissions intensity targets for the compliance years FY2026 and FY2027, using data from FY2024 as the baseline. The first CCC trading is expected to be launched by mid-2026.

EMISSIONS & TARGETS OF INDIA

OVERALL GHG EMISSIONS (including indirect CO_2, excluding LULUCF), **2020**

(in $MtCO_2e$, share of total in %)

Energy	2,238.4	76%
Industrial processes	238.5	8%
Agriculture	405.9	14%
Waste	75.6	3%
Total	**2,958.6**	

Energy industries	1,265.3	43%
Manufacturing industries and construction	390.6	13%
Transport	297.3	10%
Commercial, institutional, and residential	258.1	9%
Other energy	26.9	1%

GHG REDUCTION TARGETS

By 2030: Reduce emissions intensity to 45% below 2005 levels (updated NDC)

By 2070: Net zero (updated NDC)

ETS COVERAGE & PHASES

PHASES

PHASE 1: Two years (FY2026 to FY2027)

CAP OR TOTAL EMISSIONS LIMIT

The total emissions limit under the Indian CCTS changes as a function of production (output) and is the sum of the bottom-up output-based emissions limits for all individual covered entities. The bottom-up emissions limits do not represent an absolute cap.

SECTORS AND THRESHOLDS

Aluminium, chlor-alkali, cement, pulp and paper, petrochemicals, petroleum refining, and textiles.[1]

INCLUSION THRESHOLDS:

Entities currently covered under the PAT scheme are being transitioned to the CCTS, using the same inclusion thresholds. The following table indicates the sectoral thresholds.

Sector	Minimum annual energy consumption
Aluminium	7,500 TOE
Cement	30,000 TOE
Cement grinding	10,000 TOE
Chlor-alkali	12,000 TOE
Iron and steel	20,000 TOE
Petrochemical	1,00,000 TOE
Petroleum refining	90,000 TOE
Pulp and paper	7,500 TOE
Textiles	3,000 TOE

POINT OF REGULATION

Point source

TYPE OF ENTITIES

Industrial units

NUMBER OF ENTITIES

490 entities[2]

1 The emissions intensity targets for the iron and steel sector have not yet been notified by MoEFCC as of February 2026.

2 This number reflects entities from the seven industrial sectors for which final emissions intensity targets have been notified by MoEFCC as of February 2026: Aluminium, chlor-alkali, cement, pulp and paper, petrochemicals, petroleum refining, and textiles.

ALLOWANCE ALLOCATION & REVENUE

ALLOWANCE ALLOCATION

Within the CCTS, sectoral GHG emissions intensity trajectories have been developed, extending up to 2030. These sectoral trajectories were formulated based on India's NDC, incorporating sector-specific marginal abatement cost curves to assess the technical and economic feasibility, as well as the potential for energy efficiency improvements and fuel switching within each sector.

Entity-specific targets were derived from the sectoral emissions trajectories, considering the respective sub-sector's trajectory and their relative emissions performance, with annual compliance targets assigned accordingly.

The sectoral emissions intensity trajectories and corresponding target ranges are deliberated and finalized by the relevant sectoral technical committees. Once agreed upon, the emissions targets undergo review by the sub-working groups and receive approval from the NSCICM.

Emissions intensity targets spanning a three-year period for entities covered under the scheme are notified by the MoEFCC. These targets are denominated in tCO_2e per unit of product.

Entities that overachieve their GHG emissions intensity target will be eligible for the issuance of CCCs, while entities that fall short of their target will be required to purchase and surrender an equivalent number of certificates.

The BEE will issue the CCCs, which will be traded through the country's power exchanges. Covered entities will be required to register on a national registry, while non-covered entities may do so if they wish to participate in trading.

FLEXIBILITY & LINKING

BANKING AND BORROWING

Unlimited banking of CCCs is allowed. Banked CCCs can be either sold within the ICM or used to meet future compliance obligations.
Borrowing is not allowed.

OFFSET CREDITS

The use of offset credits is not allowed.

LINKS WITH OTHER SYSTEMS

The Indian CCTS is not linked with any other system.

OTHER CARBON PRICING INSTRUMENTS IN THE JURISDICTION

Domestic offsetting mechanism: Offset Mechanism (notified in December 2023, under development)

COMPLIANCE

COMPLIANCE MECHANISM

Covered entities must surrender one compliance unit per tCO_2e of excess emissions.

The annual emissions targets for the first entities covered under the CCTS were set using FY2024 emissions data as baseline. New emissions intensity targets will be announced every three years, to enable longer-term planning for covered entities.

For the seven sectors where final targets for FY2026 and FY2027 have been notified, the average reduction rate for FY2027 is provided in the table below:

Sector/sub-sector	Average reduction percentage till 2027
Alumina	4.5%
Aluminium	4.9%
Textiles	6.6%
Cement Integrated	2.7%
Cement Grinding	6.6%
Pulp & Paper	6.5%
Petroleum Refining	3.1%
Petrochemical	3.6%
Chlor-Alkali	6.5%

COMPLIANCE PERIOD

One financial year (FY) (from April 1 to March 31).

Covered entities must submit a performance assessment document within four months after the end of the compliance year, e.g., by July 31.

MRV

FRAMEWORK: The regulatory framework for the compliance mechanism under the CCTS is defined in the "Detailed Procedure for Compliance Mechanism under CCTS version 1.0", published by the BEE in July 2024.

MONITORING: Annual monitoring of GHG emissions based on a monitoring plan, using a "gate-to-gate" approach to cover the emissions along the entire value chain (scope 1 and 2). BEE provides a standardized monitoring template (GHG Emission calculation pro forma) to be used for monitoring and reporting.

REPORTING: Covered entities are required to report their emissions annually to the BEE and State Designated Agency within four months after the end of the compliance year (by July 31).

VERIFICATION: Emissions reports need to be verified by a carbon verification agency accredited by BEE for the purpose of preparation of the verification report and the verification of compliance with respect to the entity's GHG emissions intensity targets.

PENALTIES AND ENFORCEMENT

Should covered entities fail to meet their compliance obligations by surrendering the CCC, the Central Pollution Control Board shall impose an environmental compensation order on such entities for the shortfall which shall be equal to twice the average price at which CCCs are traded during the trading cycle of that compliance year.

MARKET REGULATION

MARKET DESIGN

MARKET PARTICIPATION: Compliance entities

MARKET TYPES:

Primary: CCCs are not auctioned under the CCTS. All certificates are issued by the BEE to entities overperforming their targets.

Secondary: CCCs will be traded through the country's power exchanges, with the Central Electricity Regulatory Commission (CERC) acting as the regulator for trading activities.

LEGAL STATUS OF ALLOWANCES: CCCs will not be considered financial instruments in the initial stage of CCTS.

OTHER INFORMATION

INSTITUTIONS INVOLVED

Ministry of Environment, Forest and Climate Change (MoEFCC): Responsible for national climate strategy. Formally designates facilities as covered entities under the CCTS and notifies GHG emissions targets under the "Environment Protection Act (1986)".

Ministry of Power (MoP): Responsible for national energy policy and the national carbon market. Recommends GHG emissions targets to the MoEFCC for notification.

Bureau of Energy Efficiency (BEE): Responsible for the administration and implementation of the CCTS. Its responsibilities include identifying relevant sectors and their potential for GHG reduction, developing emissions trajectories and targets for covered entities under the compliance mechanism, issuing CCCs, and developing the necessary IT infrastructure for the operation of the ICM.

Grid Controller of India (GCI): Registry operator for the CCTS.

Central Electricity Regulatory Commission (CERC): Regulator for trading activities under the CCTS. It provides market oversight and takes necessary corrective action to prevent fraud.

National Steering Committee for the Indian Carbon Market (NSCICM): Advisory committee that oversees the governance and functioning of the Indian carbon market. The NSCICM includes representatives from relevant ministries, state governments, and industry experts.

REGULATORY FRAMEWORK

- → Carbon Credit Trading Scheme, 2023
- → Energy Conservation (Amendment) Bill (2022)
- → Energy Conservation Act (2001)
- → The Environment Protection Act (1986)
- → Detailed Procedure for Compliance Mechanism under CCTS (2024)
- → Notification of GHG emission intensity targets for the first four sectors (2025)
- → Notification of GHG Emission intensity target for the three sectors (2025)
- → Published Offset methodology

INDONESIA

ECONOMIC VALUE OF CARBON (NILAI EKONOMI KARBON)TRADING SCHEME

- Intensity-based ETS covering the power sector, launched in 2023
- Covered 563 power plants in 2025
- Presidential Regulation No.110/2025 formalizes a national carbon pricing framework (ETS, carbon levy, results-based payments)

ETS DESCRIPTION

Indonesia's Economic Value of Carbon, or *Nilai Ekonomi Karbon* (NEK), Trading Scheme is a mandatory, intensity-based ETS for the power sector that was launched in early 2023. In its first phase spanning from 2023 to 2024, it exclusively targeted coal-fired power plants (CFPPs) connected to the *Perusahaan Listrik Negara* (PLN) grid with a capacity of 25 MW or greater. In 2025, 563 installations – both connected to and not connected to the PLN grid – were covered under the ETS, consisting of CFPPs with a capacity above 25 MW, combined-cycle power plants, gas engine power plants, and gas-fired power plants. The majority of the plants covered by the NEK are operated by the state-owned electricity company PLN.

The Indonesian government has established intensity targets, known as Technical Emissions Ceiling Approvals, or *Persetujuan Teknis Batas Atas Emisi* (PTBAE). These targets determine the number of allowances that installations receive for each MWh of electricity generated. Covered entities must surrender allowances for all their covered emissions, with allocation based on PTBAE, emission intensity, and emission average. Additionally, entities have the option to purchase allowances via auctions.

Eventually, the Indonesia ETS is expected to function as a hybrid "cap-tax-and-trade" system, operating concurrently with a carbon tax. Facilities failing to meet their obligations under the ETS will be subject to this tax, the rate of which will be aligned with the domestic carbon market's price.

While the system currently regulates the power sector, the government is actively preparing to extend coverage to the industrial sector. The Ministry of Industry is coordinating the development of sectoral emissions reporting systems for energy-intensive industries, including cement and fertilizers, which are intended to be integrated into the national MRV framework and the national registry to support a future extension of ETS coverage to industrial sectors.

The Indonesian Carbon Exchange (IDXCarbon) was officially launched in September 2023, under the supervision of the Financial Services Authority of Indonesia (*Otoritas Jasa Keuangan*, OJK).

"Presidential Regulation No.110/2025" on carbon pricing established the national legal framework for a domestic trading system, a carbon levy that functions as a compliance backstop, and a results-based payment mechanism tied to Article 6 of the Paris Agreement.

YEAR IN REVIEW

In 2025, the scope of the ETS was expanded to cover captive CFPPs that are not connected to the electricity grid and gas power plants (gas fired power plants, gas engine power plants and combined cycled power plants). As a result, the total number of covered installations rose from 146 in 2024 to 563 in 2025.

In force
Under development
Under consideration

SECTORS

POWER

CAP OR TOTAL EMISSIONS LIMIT

Intensity-based emissions limit
256.8 $MtCO_2e$ (2024)

GREENHOUSE GASES

CO_2, CH_4 and N_2O

OFFSET CREDITS

Domestic offset credits, unlimited

ALLOCATION

Free Allocation: Output-based Benchmarking

Due to regulatory changes and revisions of legislation, the allocation of allowances for 2025 has been postponed, no allowances were issued and no trading operations took place as of January 2026. Reporting obligations for covered installations still apply.

In 2025, OJK and the Ministry of Environment (MoE) operationalized IDXCarbon as the national carbon exchange, recording participation from more than 130 entities and transactions totaling ~0.6 $MtCO_2e$.

EMISSIONS & TARGETS OF INDONESIA

OVERALL GHG EMISSIONS (including indirect CO_2, excluding LULUCF), 2023

(in $MtCO_2e$, share of total in %)

Energy	752.2	71%
Industrial processes	59.8	6%
Agriculture	104.9	10%
Waste	136.3	13%
Total	**1,053.4**	

Energy industries	291.4	28%
Manufacturing industries and construction	230.5	22%
Transport	165.7	16%
Commercial, institutional, and residential	30.3	3%
Other energy	34.2	3%

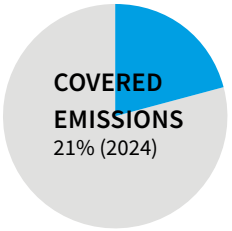
GHG REDUCTION TARGETS

By 2030: Absolute national emissions cap of ~1.35 $GtCO_2e$ (unconditional) and ~1.49 $GtCO_2e$ (conditional on international support), replacing previous BAU-based targets (NDC 2.0).
By 2060: Climate neutrality (NDC 2.0; Long-Term Strategy, 2021).

ETS COVERAGE & PHASES

COVERED EMISSIONS 2024

Verified ETS emissions: 225.3 $MtCO_2e$



PHASES

PHASE 1: Two years (2023 and 2024)
PHASE 2: Three years (2025 to 2027)
PHASE 3: Three years (2028 to 2030)

CAP OR TOTAL EMISSIONS LIMIT

The total emissions limit under the Indonesian ETS is the sum of the bottom-up output-based emissions limits for all individual covered entities.

The Ministry of Energy and Mineral Resources (MEMR) establishes the PTBAE, or the emissions limit, for the power sector. This is based on: (i) actual emissions, which must be below the emissions reduction target set for the sector, and (ii) the carbon trading roadmap for the power sector.

PHASE 1:
The ETS was applicable only to coal-fired power plants connected to PLN's grid. The total emissions limit was approximately 256.8 $MtCO_2e$.

The emissions limit for the power subsector for Phase 1 was as follows:
- non-mine mouth coal-fired power plants with a capacity of ≥25 MW to <100 MW: 1.3 tCO_2e/MWh
- mine mouth coal-fired power plants with a capacity of ≥100 MW: 1.1 tCO_2e/MWh
- non-mine mouth coal-fired power plants with a capacity of 100 MW to ≤400 MW: 1 tCO_2e/MWh
- non-mine mouth coal-fired power plants with a capacity of >400 MW: 0.9 tCO_2e/MWh

PHASE 2 and **PHASE 3:**
The emissions limits for the second and third phases have not yet been determined, but they are expected to be more stringent than in the first.

Indonesia's October 2025 NDC introduces an absolute national emissions cap (1.35 $GtCO_2e$ in 2030, unconditional), which the government describes as the carbon budget that future ETS phases will align with as coverage expands beyond the power sector.

SECTORS AND THRESHOLDS

PHASE 1: Coverage was limited to coal-fired power generators connected to PLN's grid only. Details on thresholds are provided below. Phase 1 covered about 37% of national power generation capacity via 99 PLN-connected coal units. With Phase 2 (2025 to 2027) expanding to captive coal and gas-fired plants supplying energy-intensive industries, the system is expected to regulate roughly 55–60% of power-sector emissions.

PHASE 2: The government expanded the scheme to include coal-fired power plants with capacity above 25 MW and not connected to PLN's grid (captive CFPPs), gas-fired power plants, gas engine power plants and combined cycled power plants connected to PLN's grid.

PHASE 3: The expansion will encompass all fossil fuel power plants, including diesel power plants with a capacity of 2 MW or greater and coal-fired power plants with capacity below 25 MW regardless of their connection to PLN's grid.

INCLUSION THRESHOLDS: In 2024, coal-fired power generation facilities with installed capacity exceeding 25 MW are included. Smaller coal and fossil fuel plants will be incorporated at a later point (see above).

MoE has indicated that the government plans to implement emission caps for four additional sectors in the future: forestry, industrial processes and product use, agriculture, and waste management.

Beyond the power sector, the government has indicated its intention to gradually expand ETS coverage to major emitting industrial subsectors, supported by ongoing development of MRV frameworks in the industrial sector under the Ministry of Industry.

The government has stated that future ETS phases are expected to align sectoral caps with the national absolute carbon budget defined in the 2025 NDC, moving the ETS from a purely intensity-based instrument in the power sector toward a broader economy-wide system.

POINT OF REGULATION
Point source

TYPE OF ENTITIES
Installations/facilities

NUMBER OF ENTITIES
In 2023: 42 entities covering 99 installations
In 2024: 63 entities covering 146 installations
In 2025: 563 installations

Note: The number of entities and installations is expected to continue increasing as new installations commence operations and additional categories are included, in line with the roadmap's expansions.

ALLOWANCE ALLOCATION & REVENUE

ALLOWANCE ALLOCATION
In Indonesia, allowances are referred to as *Persetujuan Teknis Batas Atas Emisi Pelaku Usaha* (PTBAE-PU).

PHASE 1 and 2:
Auctioning: In the NEK, auctioning is conducted through a system managed by IDXCarbon, where bid and offer instructions are matched based on a time and price priority scheme (refer to the 'Market Design' section).
- Auction share: 0% (2025)
- Auction volume: None

To date, no auctions have taken place. Details regarding auction shares and related requirements or provisions are yet to be determined.

Benchmarking: MEMR sets intensity targets based on cap/PTBAE, installations' average emissions of the previous year, and installations' average emissions intensity of the previous year. These targets dictate the number of PTBAE-PU allowances allocated for every MWh of electricity generated. If the necessary data is unavailable, allocation is based on comparison with similar plants of equivalent installed capacity. In the first year, allowances will be given 100% for free. For the second year or the following year, installations will receive either 75% or up to 85% of their allowances for free. The gradual reduction from 100% free allocation toward 75-85% is framed by the government as transitional support for energy-intensive and trade-exposed industries such as nickel processing, steel, and cement that currently rely on captive coal and gas power. The deduction percentage depends on the installation's compliance with the ETS.

Covered entities that receive allowances must participate in trading. If they do not, they receive a written warning and free allocation for the next compliance period is reduced to 75%.

Presidential Regulation No.110/2025 positions a future "carbon levy" as a compliance backstop alongside free allocation and future auctions. The regulation empowers the government to introduce an administratively managed reserve and results-based payment channels so that ETS-covered entities can access additional compliance units or face a financial charge aligned with prevailing market prices.

USE OF REVENUES
Not defined.
The Ministry of Finance has indicated that future ETS auction proceeds and carbon levy revenues will be channeled through Indonesia's Environment Fund to support power sector decarbonization, MRV infrastructure, and the financing of the energy transition.

FLEXIBILITY & LINKING

BANKING AND BORROWING

Banking is allowed within phases, though PTBAE-PUs are valid for a maximum of two years from the end of the previous compliance period. Banking is not allowed across phases.
Borrowing is not allowed.

OFFSET CREDITS

The use of domestic offset credits – known as carbon reduction units, or *Sertifikat Pengurangan Emisi Gas Rumah Kaca* (SPE-GRK) – is allowed. Credits equivalent to SPE-GRKs may also be used.

QUALITATIVE LIMITS: Offset credits must stem from mitigation activities from:

1. New and renewable energy power plants;
2. Transportation, construction, and industry including energy efficiency activities; or
3. Other activities in the energy sector.

They must also be issued on the national registry.

QUANTATIVE LIMITS: None
In 2023, 6,260 tCO_2 in offset credits were retired, all from the Lahendong geothermal project.

Since January 2025, Indonesia has authorized selected projects (including ~1.78 $MtCO_2e$ from PLN-affiliated power projects) for international transfer under Article 6, following the lifting of a four-year moratorium on cross-border carbon credit exports. These credits, issued under national MRV and registered in the national registry, can generate revenue to help meet Indonesia's 2030 cap under the updated NDC.

LINKS WITH OTHER SYSTEMS

The NEK Trading Scheme is not linked with any other system.

OTHER CARBON PRICING INSTRUMENTS IN THE JURISDICTION

Carbon tax: Indonesia carbon tax (upcoming)
Domestic crediting mechanism: Indonesia Emissions Reduction Certification

COMPLIANCE

COMPLIANCE MECHANISM

Covered entities must surrender one compliance unit (allowance or offset credit) per tCO_2e emitted for all their covered emissions.

COMPLIANCE PERIOD

The compliance period for the Indonesian ETS is one year, with trading occurring from January 1 to April 20 of the following year. Surplus allowances at the end of the trading period may be traded in the following period, provided it is within the same phase.

MRV

FRAMEWORK: The national MRV system is stipulated in the Presidential Regulation 110/2025 and in the "Ministry of Environment and Forestry Regulation 21/2022". For the power subsector, the MRV system is stipulated in the "Ministry of Energy and Mineral Resources Regulation 16/2022".

MONITORING: An MRV system is currently in operation in the industrial sector and the power generation sub-sector. Pilot MRV programs are also being conducted in the cement and fertilizer sectors.

REPORTING: Reports are submitted to the MEMR through the Directorate General of Electricity via an online platform, the APPLE-Gatrik. These reports must be submitted by the end of January of the year following the reporting year. Installations must report CO_2, CH_4, and N_2O emissions, expressed in units of CO_2e.

VERIFICATION: Emissions must be verified by a third-party verifier that is accredited by the *Komite Akreditasi Nasional* (KAN), Indonesia's national accreditation body. This verification should be completed by the end of March, following the January reporting deadline. Verifiers are required to adhere to the guidelines for GHG emission verification in the power subsector.

PENALTIES AND ENFORCEMENT

The plan was to concurrently implement carbon trading and a carbon tax, with the latter serving as a penalty mechanism. However, as discussions on carbon tax regulations continue and their implementation is postponed, an alternative enforcement approach was introduced:

1. Should verified emissions exceed the allocated PTBAE-PU by the end of the period, allocations will be given according to the results of carbon trading transactions in the previous carbon trading period up to a maximum of 85% and the PTBAE-PU will be reduced by up to 15%.
2. Entities which fail to report their GHG emissions or participate in carbon trading by the end of the period will see a 25% reduction in their PTBAE-PU.

Presidential Regulation No.110/2025 clarifies that, going forward, entities that do not surrender sufficient units will face a carbon levy set in line with prevailing market prices. This embeds the "cap–tax–and–trade" model in national law by tying the financial penalty directly to the ETS price signal.

MARKET REGULATION

MARKET DESIGN

MARKET PARTICIPATION: Compliance entities, specifically those holding an "Electricity Supply Business License for Public Purpose" or "Electricity Supply Business License for Own-Use," are eligible to engage in carbon trading. The government has positioned IDXCarbon as the central infrastructure not only for domestic allowance and offset trading but also for Article 6-authorized international transactions, following the October 2025 presidential decree lifting the export moratorium.

MARKET TYPES

Primary: In the primary market, allowances and offset credits are traded through a mechanism that may be activated upon request by the relevant ministry. This platform facilitates offset selling, with a potential reserve price set as low as IDR 1 (less than USD 0.01), and bids commencing from this figure or higher. As of January 2026, there have been no auctions conducted under this system, and specific details about auction shares, along with associated requirements and provisions, remain to be defined.

Secondary: Operated by IDXCarbon, launched at the Indonesia Stock Exchange (IDX) in September 2023 and licensed by the Financial Services Authority (OJK), the secondary market encompasses:

- Regular Market or 'Continuous Auction': Matching of bids and offers based on time and price priority, with minimum prices set at IDR 200 (USD 0.01) and governed by fraction price rules and an 'auto rejection' rule.
- Negotiated Market: Facilitates the settlement of pre-agreed trades through the exchange, requiring details of counterpart, carbon units, price, and volume.
- Marketplace: Enables project developers to list their projects and set prices.

IDXCarbon is integrated with the new centralized registry for carbon units and trading, Sistem Registri Unit Karbon (SRUK). Introduced by Presidential Regulation No. 110/2025, it replaces the SRN-PPI (Sistem Registri Nasional Pengendalian Perubahan Iklim) system for trading purposes; SRN-PPI will now be used solely for reporting mitigation and adaptation actions.

OJK has begun integrating IDXCarbon with the national registry to enable automated tracking of issuance, transfer, and surrender, including for internationally transferred mitigation outcomes under Article 6.

LEGAL STATUS OF ALLOWANCES: PTBAE-PUs and SPE-GRKs are classified as securities, allowing their transfer and trade in the capital market.

MARKET STABILITY PROVISIONS

EVALUATION BY MEMR

Instrument type: Quantity-based instrument

Functioning: The MEMR evaluates on a regular basis the implementation of the ETS. If the evaluation reveals a shortage of allowances, the Minister and Director General may conduct additional auctions of PTBAE-PUs.

OTHER INFORMATION

INSTITUTIONS INVOLVED

Coordinating Ministry of Food Affairs: Chair of the National Steering Committee for Carbon Pricing Implementation; coordinates ministries/agencies in developing the national carbon pricing framework.

Coordinating Ministry for Economic Affairs (CMEA): Vice Chair of the National Steering Committee for Carbon Pricing Implementation.

Ministry of Environment (MoE): National focal point for UNFCCC; leads NDC development and implementation, including national mitigation and adaptation and implementation of carbon pricing (including providing authorization for national and international emission trading, and overseeing offsetting; oversees MRV; operates the national registry, SRUK).

Ministry of Energy and Mineral Resources (MEMR): Coordinates ETS implementation in the power subsector, including oversight of an integrated MRV system with the SRUK; responsible for preparing and implementing the 2021 voluntary pilot carbon market.

Ministry of Industry: Coordinates implementation of CPIs on the Industrial Processes and Product Use sector, including an emissions reporting system to be integrated with the SRUK.

Ministry of Finance: Leads the development and implementation of the carbon tax.

Indonesian Environment Fund: Handles climate funding; manages ETS revenues, including any international carbon credit trading.

Financial Services Authority (OJK): Oversees IDXCarbon, which is hosted on the Indonesia Stock Exchange.

Presidential Regulation No.110/2025 designates a national carbon pricing steering structure that coordinates the ETS, the carbon levy, and Article 6 results-based payments across the Ministry of Environment and Ministry of Forestry, the Ministry of Finance, the Ministry of Energy and Mineral Resources, and the Financial Services Authority (OJK) and other related ministries.

EVALUATION/ETS REVIEW

The Minister of Energy and Mineral Resources, through the Directorate General of Electricity, evaluates the Indonesian ETS every six months. Results of this evaluation may lead to adjustments in the policy.

The Ministerial Regulation of Energy and Mineral Resources 16/2022 is currently being revised to align with the Presidential Regulation 110/2025.

REGULATORY FRAMEWORK

- → **Regulation 46/2017 on Environmental Economic Instruments**
- → **Law 7/2021 Concerning Harmonization of Tax Regulations**
- → **Presidential Regulation No.110/2025 on the Implementation of Carbon Economic Value Instruments and National Greenhouse Gas Emission Control**
- → **MoEF Regulation 21/2022 on Guidelines for Carbon Economic Value Implementation**
- → **MEMR Regulation 16/2022 on Guidelines for Carbon Economic Value Implementation for the Power Generation Sub-sector**
- → **OJK Regulation 14/2023 concerning Carbon Trading Through the Carbon Exchange**

JAPAN

GX-ETS

- Voluntary GX-ETS launched in 2023, transitioned to a mandatory ETS in April 2026
- Ten-year decarbonization roadmap includes the mandatory ETS
- Auctioning planned from 2033

ETS DESCRIPTION

Japan started its GX-ETS as a voluntary baseline-and-credit system during its first phase spanning FY2023 and FY2025. In the FY2026, which started in April 2026, the GX-ETS transitioned to a mandatory baseline-and-credit system.

Under the GX-ETS, allowances are traded on the market. Upper and lower price limits apply. From FY2033, auctioning will be introduced for high-emitting corporations in the power sector.

More than 700 companies, accounting for over 50% of national GHG emissions, participated in the voluntary ETS.

Japan combines several carbon pricing instruments to help achieve net zero emissions by 2050: an existing carbon tax, the ETS, and a carbon levy (GX-Surcharge) to be introduced from 2028 on fossil fuel importers and domestic fossil fuel extractors. Plans for this are outlined in the Basic Plan for the "Green Transformation (GX) Policy", Japan's ten-year decarbonization strategy.

Japan is actively participating in international carbon markets. Its Joint Crediting Mechanism (JCM) is a bilateral scheme to incentivize decarbonizing technologies and mitigation actions in 31 partner countries. JCM credits are eligible for use in the GX-ETS. Separately, 90 partner countries and over 300 organizations have joined Japan's global capacity-building initiative, the Article 6 Implementation Partnership.

YEAR IN REVIEW

The mandatory GX-ETS began in April 2026, following a three-year voluntary phase and the adoption of the "Amended GX Promotion Act" by the Upper House of the Parliament in May 2025.

Over the course of 2025, the Ministry of Economy, Trade and Industry (METI) held several working group meetings to consult stakeholders on various design aspects of the mandatory GX-ETS such as benchmarks and grandfathering for setting the baselines and upper and lower price limits of emission allowances.

In force
Under development
Under consideration

SECTORS[1]

- POWER
- INDUSTRY
- TRANSPORT[2]
- AVIATION
- MARITIME

CAP OR TOTAL EMISSIONS LIMIT

Absolute cap[3]

GREENHOUSE GASES

CO_2

OFFSET CREDITS

Domestic (J-Credits) and international (JCM credits) offset credits, with quantitative limits

ALLOCATION

Free Allocation: Grandparenting
Free Allocation: Fixed Benchmarking

1 Companies with annual direct CO_2 emissions of 100,000 tonnes or more may be covered regardless of the sector.
2 Only cargo road transport.
3 The cap is the sum of all individual companies' emission limits (baselines), which are set during a compliance period for the entire compliance period. The baselines are absolute limits and not intensity based.

EMISSIONS & TARGETS OF JAPAN

OVERALL GHG EMISSIONS (including indirect CO_2, excluding LULUCF), **2023**
(in $MtCO_2e$, share of total in %)

Energy	944.5	88%
Industrial processes	76.1	7%
Agriculture	32.4	3%
Waste	16.1	2%
Total	**1,070.9**	

Energy industries	411.5	38%
Manufacturing industries and construction	224.5	21%
Transport	185.0	17%
Commercial, institutional, and residential	105.6	10%
Other energy	18.0	2%

GHG REDUCTION TARGETS

By FY2030: 46% reduction from FY2013 GHG levels, including LULUCF credits; and continue efforts to cut emissions by 50% (NDC 1.0)
By 2050: Net zero GHG emissions (NDC 2.0)

ETS COVERAGE & PHASES

PHASES

PHASE 1: Three years (2023 to 2025) (voluntary phase)
PHASE 2: Seven years (2026 to 2032)

CAP OR TOTAL EMISSIONS LIMIT

A bottom-up absolute cap limits the total emissions allowed in the system and is fixed ex-ante.

SECTORS AND THRESHOLDS

PHASE 1: voluntary
PHASE 2: all sectors

INCLUSION THRESHOLDS: Companies with annual CO_2 emissions of 100,000 tonnes or more in power, industry, transport and aviation as well as in other sectors if their annual CO_2 emissions exceed the 100,000 tonnes threshold.

POINT OF REGULATION

Point source

TYPE OF ENTITIES

Companies

NUMBER OF ENTITIES

More than 700 entities in voluntary phase; 300-400 entities in the mandatory phase

ALLOWANCE ALLOCATION & REVENUE

ALLOWANCE ALLOCATION

PHASE 1: Voluntary participation
PHASE 2: Free allocation with benchmarking and grandfathering

Benchmarking applies for:

- Paper (Western-style paper)
- Paperboard
- Soda (sodium carbonate manufacturing)
- Carbon black
- Organic chemical products
- Petroleum refining
- Rubber products
- Plate glass
- Glass bottles
- Cement
- Lime
- Lime nitrogen (calcium cyanamide)
- Electric furnace general steel
- Electric furnace special steel
- Aluminum
- Automobiles
- Power generation (gas, coal, oil, etc.)
- Freight automobile transportation
- Domestic marine transportation
- Air transportation

Allocation based on grandparenting applies to the other sectors.

USE OF REVENUES

Revenues from auctioning for power generation companies, together with revenues from the fossil fuel surcharge, will be used to redeem GX Economic Transition Bonds.

FLEXIBILITY & LINKING

BANKING AND BORROWING

Banking: There are currently no regulations for banking in place, but the government is examining the possibility of implementing banking rules in FY2027.

Borrowing is not allowed.

OFFSET CREDITS

PHASE 1: The use of offset credits was allowed.
PHASE 2: The use of offset credits is allowed.

QUALITATIVE LIMITS: Domestic (J-Credits) and international (JCM credits) credits are allowed with quantitative limits.

QUANTITATIVE LIMITS: The use of offset credits is capped at 10% of an entity's compliance obligation.

LINKS WITH OTHER SYSTEMS

The GX-ETS is not linked with any other system.

OTHER CARBON PRICING INSTRUMENTS IN THE JURISDICTION

- **Carbon tax:** Tax for Climate Change Mitigation on fossil fuels since 2012
- **Carbon tax:** GX-Surcharge on fuel imports and domestic extractors (upcoming, FY2028)
- **Sub-national ETSs:** in Tokyo and Saitama
- **Domestic and international crediting mechanism:** J-Credits and JCM credits

COMPLIANCE

COMPLIANCE MECHANISM

Covered entities must surrender one compliance unit per tCO_2 that exceeds the facility's annual emissions limit.

COMPLIANCE PERIOD

One year.

MRV

FRAMEWORK: GX Promotion Act
REPORTING: Covered entities must submit their emissions reports annually by January 31 of the year following the reporting year.
VERIFICATION: Emissions reports require third-party verification by an accredited verifier.

PENALTIES AND ENFORCEMENT

If the required number of allowances cannot be surrendered, a payment equal to the shortfall in emission allowances × upper price × 1.1 must be made.

MARKET REGULATION

MARKET STABILITY PROVISIONS

INSTRUMENT NAME: N/A
Instrument type: Price-based instrument
Functioning: When allowance prices rise above an established upper price limit, entities can meet their obligations by paying the upper limit.
Upper price limit in FY2027: JPY 4300 (USD 28.73)

When a certain number of days pass with trading prices below the lower limit, a reverse auction will be held to balance the supply and demand for allowances.
Lower price limit in FY2027: JPY 1700 (USD 11.36)

OTHER INFORMATION

INSTITUTIONS INVOLVED

Ministry of the Environment: Administers the J-Credit and JCM schemes; tasked with developing carbon pricing in Japan jointly with METI.
Ministry of Economy, Trade, and Industry (METI): Administers the implementation of the J-Credit and JCM schemes; responsible for the GX League; tasked with developing carbon pricing in Japan jointly with the Ministry of Environment.
Central Environment Council: Advisory body to the Japanese Cabinet.
GX Acceleration Agency: Established to carry out operations related to the ETS and the GX-Surcharge system.

REGULATORY FRAMEWORK

→ GX Basic Plan
→ GX Promotion Act
→ Cabinet Decision on the Bill for the Act for Partially Amending the Act on the Promoting Transition to the Decarbonized Growth Economic Structure and the Act on the Promotion of Effective Utilization of Resources

MALAYSIA

- National Climate Change Policy 2.0 identifies carbon pricing and carbon markets as key to achieving climate targets
- Introduction of a domestic ETS announced as part of the 13th Malaysia Plan (2026 to 2030)
- Introduction of a carbon tax for industrial sectors announced in Budget 2026

In force

Under development

Under consideration

ETS DESCRIPTION

On September 25, 2025, Malaysia's Cabinet approved the "National Climate Change Policy 2.0" (NCCP 2.0), which highlights the country's aspiration to utilize carbon pricing instruments and carbon markets to unlock climate financing. It also highlights the strategic need to formulate a Climate Change Act and establish an entity to regulate certain aspects of climate change-related mechanisms.

A consultation paper for a Climate Change Bill released in 2024 includes the legal basis to establish a domestic ETS and its related ecosystem.

Under the 13th Malaysia Plan (2026 to 2030), the government announced that it will introduce a National Carbon Market Policy and launch a domestic ETS to facilitate a structured transition towards a low-carbon economy. This scheme will serve as a key market-based instrument to incentivize the private sector to reduce GHG emissions by placing a price on carbon.

On October 18, 2025, during the Budget 2026 tabling, the Prime Minister announced that to facilitate the transition to a low-carbon economy, the government will introduce a carbon tax on the iron, steel, and energy industries by 2026. The implementation of this tax will be aligned with the National Carbon Market Policy (DPKK) and the forthcoming National Climate Change Bill.

EMISSIONS & TARGETS OF MALAYSIA

OVERALL GHG EMISSIONS (including indirect CO_2, excluding LULUCF), 2021

(in $MtCO_2e$, share of total in %)

Energy	259.7	79%
Industrial processes	37.0	11%
Agriculture	8.6	3%
Waste	23.7	7%
Total	**329.0**	

Energy industries	149.3	45%
Manufacturing industries and construction	33.7	10%
Transport	49.6	15%
Commercial, institutional, and residential	4.0	1%
Other energy	22.8	7%

GHG REDUCTION TARGETS

By 2030: 45% reduction of economy-wide carbon intensity compared to 2005 levels, emissions peak (unconditional, updated NDC)

By 2035: Absolute reduction of 15-30 million tonnes of CO_2e from the peak level (up to 20 $MtCO_2e$ unconditional reduction, and an additional 10 million tonnes reduction conditional on international support) (NDC 3.0)

By 2050: Net-zero ("The 12th Malaysia Plan 2021-2025")

OTHER INFORMATION

INSTITUTIONS INVOLVED

Ministry of Natural Resources and Environmental Sustainability (NRES): Responsible for overseeing the implementation of national climate policy, including the national carbon market mechanisms, Climate Change Bill and ETS

REGULATORY FRAMEWORK

→ **Consultation paper for a "National Climate Change Bill" (2024)**

→ **National Policy on Climate Change 2.0 (2024)**

→ **13th Malaysian Plan 2026 to 2030 (2025)**

NEW ZEALAND

NEW ZEALAND EMISSIONS TRADING SCHEME

- Broad sectoral coverage with upstream regulation, including the forestry sector
- Cap trajectory aligned with national net-zero targets
- Allocation based primarily on auctioning with robust market stability provisions

ETS DESCRIPTION

The New Zealand Emissions Trading Scheme (NZ ETS) was launched in 2008 and is a central climate change mitigation policy for the country. Designed as an economy-wide system, excluding only the agriculture sector, it covers nearly half of New Zealand's GHG emissions. The "Climate Change Response Act 2002" sets the legislative framework for the NZ ETS and incorporates all of New Zealand's key climate legislation under one Act.

The cap is set in a top-down process to align with New Zealand's 2050 net zero targets and associated emissions budgets. Covered entities must surrender allowances for all their reported emissions.

The NZ ETS has broad sectoral coverage, including forestry, stationary energy, industrial processing, liquid fossil fuels, waste, and synthetic GHGs. Allocation is based primarily on auctioning, which began in March 2021. Free allocation is only granted for emissions-intensive, trade-exposed (EITE) activities and depends on a combination of emissions intensity benchmarks, production levels, and international trade exposure. Uniquely to the NZ ETS, the forestry sector has both surrender obligations and the opportunity to earn units for emissions removals.

The agricultural sector used to face processor-level reporting obligations with the prospect of compliance obligations under the NZ ETS, but this is no longer the case.

YEAR IN REVIEW

In 2025, the government made 6 million units available for auction across four quarterly sales, down from 14.1 million units in 2024. However, all four auctions failed to clear as secondary market prices remained below the floor price of NZD 68 (USD 39.52). In line with NZ ETS auctioning regulations, all 6 million units that remained unsold after the December 2025 auction, as well as 7.1 million units held in the Cost Containment Reserve (CCR) for 2025, were permanently withdrawn from the market.

In August 2025, the government announced the annual unit supply settings for the five-year period 2026 to 2030, maintaining a tight supply trajectory through 2030. Base auction volumes, excluding CCR, will decline from 5.2 million units in 2026 to 1.7 million units in 2030. The overall limit on units, or cap, comprising all units from auctioning and industrial allocation, will decline from 16.3 million in 2026 to 9.6 million in 2030.

The 2026 auction reserve price floor is NZD 71 (USD 41.27), and the first CCR trigger price is NZD 201 (USD 116.83).

1 This is the overall limit on the number of New Zealand Units (NZUs) that may be released to the market from auctioning and industrial allocation, as well as from any international units (not currently allowed). One NZU is equivalent to one tonne CO_2e. There is no limit on NZUs generated from removal activities.
2 International offsets were allowed until June 2015.
3 No auctions cleared in 2025. Revenue was received from the Fixed Price Option.

In force
Under development
Under consideration

SECTORS

- MINING AND EXTRACTIVES
- POWER
- INDUSTRY
- BUILDINGS
- TRANSPORT
- AVIATION
- MARITIME
- WASTE
- FORESTRY
- FUEL USE IN AGRICULTURE AND/OR FORESTRY

CAP OR TOTAL EMISSIONS LIMIT

Absolute Cap
16.3 $MtCO_2e$ (2026)[1]

GREENHOUSE GASES

CO_2, CH_4, N_2O, SF_6, HFCs, PFCs

OFFSET CREDITS

Offset credits are not allowed[2]

ALLOCATION

Free Allocation: Benchmarking
Auctioning
Allowances granted for forestry and other removal activities

AVERAGE 2025 PRICES

Average secondary market price: NZD 55.04 (USD 31.99)

TOTAL REVENUE

NZD 5.6 billion (USD 3.7 billion) since the beginning of the program
NZD 5.7 million (USD 3.3 million) in 2025[3]

In September 2025, the government took steps to prevent productive agricultural land from being converted into exotic forestry plantations due to the NZ ETS. Parliament passed the "Climate Change Response (Emissions Trading Scheme Forestry Conversions) Amendment Bill", restricting new ETS registrations for plantation forests on high and medium productivity land, while allowing registrations on low-productivity land.

In November 2025, the government announced amendments to the Climate Change Response Act 2002 aimed at reducing costs and improving the efficiency of NZ ETS governance. Most significantly, the government has removed the requirement for NZ ETS unit supply settings to accord with the country's NDC, while retaining the requirement for these settings to align with New Zealand's domestically legislated 'Net Zero by 2050' targets and associated emissions budgets. The changes also streamline climate governance by reducing the Climate Change Commission's role in providing advice on emissions reduction plans and by making public consultation on emissions budgets discretionary rather than mandatory. Additional changes include moving to biennial (instead of annual) ETS supply settings updates. While some changes were passed under urgency at the end of 2025, the full legislative changes will be introduced to Parliament in 2026.

EMISSIONS & TARGETS OF NEW ZEALAND

OVERALL GHG EMISSIONS (including indirect CO_2, excluding LULUCF), **2023**
(in $MtCO_2e$, share of total in %)

Energy	28.9	38%
Industrial processes	4.0	5%
Agriculture	40.6	53%
Waste	2.9	4%
Total	**76.4**	

Energy industries	2.9	4%
Manufacturing industries and construction	6.1	8%
Transport	14.2	19%
Commercial, institutional, and residential	3.0	4%
Other energy	2.6	3%

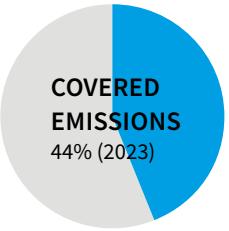
GHG REDUCTION TARGETS

By 2030: 50% reduction of net emissions below gross 2005 levels (NDC); 10% reduction of biogenic methane emissions below 2017 levels (Climate Change Response Act 2002, through an amendment in 2019)
By 2035: 51-55% reduction of net emissions below gross 2005 levels (NDC 2.0)
By 2050: Reduce net emissions of all GHGs (except biogenic methane) to zero; reduce biogenic methane emissions to 14-24% below 2017 levels (Climate Change Response Act 2002, through an amendment in December 2025)

ETS COVERAGE & PHASES

COVERED EMISSIONS 2023

Verified ETS emissions: 33.3 $MtCO_2e$



CAP OR TOTAL EMISSIONS LIMIT

The NZ ETS has an absolute cap that is set in advance. It limits the number of New Zealand Units (NZUs) that may be released to the market from auctioning (including the CCR), industrial allocation, and from any international units (not currently allowed). There is no limit on NZUs generated from removal activities. The NZ ETS cap thus limits the volume of net emissions that are emitted by ETS regulated entities, without imposing a limit on gross emissions within the ETS.

In 2026, the cap is 16.3 Mt CO_2e.

The Climate Change Response Act 2002 requires the government to set a cap on emissions covered by the NZ ETS, based on five-yearly emissions budgets and in line with New Zealand's 2050 targets. Unit supply settings are announced over a rolling five-year period with annual updates. To provide a degree of regulatory certainty, settings for the upcoming two years can only be amended under special circumstances.

The government updated regulations for unit supply settings in September 2025, setting the annual cap for the years 2026 to 2030. In setting supply limits, the government also considers the stockpile of banked allowances already in circulation and projected unit supply from removal activities.

NZUs generated from removal activities are forecast to be 17 million units in 2026, of which 15 million would come from the forestry sector.

The NZ ETS was originally designed to operate without a specific domestic cap, as this accommodated carbon sequestration from forestry activities and a full link to the international Kyoto Protocol carbon markets. However, in 2015, the types of units eligible for compliance in the NZ ETS were restricted to NZUs. No decisions have been made on potential future access to and use of international units.

SECTORS AND THRESHOLDS

SECTORS: Sectors were gradually phased in between 2008 and 2013.

- Forestry (mandatory: deforesting pre-1990 forest land; voluntary: post-1989 forest land)
- Stationary energy
- Industrial processing
- Liquid fossil fuels
- Waste
- Synthetic GHGs

From 2011 until November 2024, companies carrying out certain agricultural activities had an obligation to report their emissions at the processor level, with farm-level reporting set to begin in 2026. Agricultural emissions were intended to enter the NZ ETS at the processor level in 2025, with pathways for farm-level participation at a later date. However, this legislation was repealed in 2024, removing agriculture activities from the NZ ETS.

TYPES OF FUEL COVERED: petrol, diesel, aviation gasoline, jet kerosene, light fuel oil, heavy fuel oil. Emissions from fuel used for international aviation and marine transport are exempt.

INCLUSION THRESHOLDS: Thresholds for participation are typically low.[4]

- **Forestry** (as per definition of 'forest cover'
  - → mandatory: deforesting pre-1990 forest land (at least 1 hectare)
  - → voluntary: post-1989 forest land (at least 1 hectare)
- **Stationary energy**
  - → Mining or stockpiling at least 2,000 tonnes of coal per year or importing any amount of coal for combustion.
  - → Using geothermal fluid to generate electricity or for industrial heat (emitting more than 4,000 tCO_2e per year).
  - → Combusting more than 1,500 tonnes of used/waste oil per year, or combusting waste tyres (no threshold)
  - → Extracting natural gas (no threshold).
- **Industrial processing**
  - → Producing iron and steel (more than 100 tonnes of process carbon added per year)
  - → Producing gold (emitting more than 5000 tCO_2e per year)
  - → Producing cement inputs, aluminium, or glass (no thresholds)
- **Liquid fossil fuels**
  - → Owning more than 50,000 liters of any obligation fuel (petrol, diesel, aviation gasoline, jet kerosene, light fuel oil, and heavy fuel oil)
- **Waste**
  - → Operating a disposal facility (exemptions only for small remote landfills)
- **Synthetic GHGs**
  - → Importing hydrofluorocarbons (HFCs) or perfluorocarbons (PFCs) in bulk (no threshold).
  - → Operating electrical switchgear that contains at least 1 tonne of sulphur hexafluoride (SF_6).
  - → Synthetic GHGs not covered by the NZ ETS (e.g., those embedded in imported products) are subject to an equivalent levy.

POINT OF REGULATION

Upstream (power, aviation, buildings, transport, maritime, fuel use in agriculture and/or forestry); point source (mining and extractives, industry, waste, forestry).

For all fossil fuels, the point of obligation is generally upstream. Some large businesses that purchase fossil fuels directly from mandatory NZ ETS participants can choose to opt into the NZ ETS rather than have the costs passed down from their suppliers.

TYPE OF ENTITIES

Companies, private individuals, and local government entities

NUMBER OF ENTITIES

As of December 2025, 5,417 entities were registered as participants in the NZ ETS for 6,037 different activities* of which:

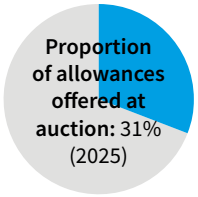
- 178 entities have mandatory reporting and surrender obligations for 185 activities
- 5,283 entities have voluntary (opt-in) reporting and surrender obligations for 5,852 activities – 99% of these being post-1989 forestry removal activities.

*Some entities have obligations under multiple activities.

4 Detailed threshold information can be found in Schedule 3 of the Climate Change Response Act 2002 and in the Climate Change (General Exemptions) Order 2009.

ALLOWANCE ALLOCATION & REVENUE

ALLOWANCE ALLOCATION



6 million units were made available at auction in 2025 (excluding units from the CCR) although none were sold.

FREE ALLOCATION:

Leakage protection/Industrial free allocation: Free allocation is provided to firms in 26 eligible industrial activities, based on emissions intensity benchmarks, production levels, and one of two rates of assistance. Activities are deemed eligible if two EITE criteria are met. For 2025, highly emissions-intensive activities (over 1,600 tCO_2e per NZD 1 million [USD 581,250] of revenue) receive 85% free allocation, while moderately emissions-intensive activities (over 800 tCO_2e per NZD 1 million [USD 581,250] of revenue) receive 55% free allocation. An activity is deemed to be trade-exposed if there is transoceanic trade in the good produced.

In 2024, 5 million NZUs were allocated for industrial EITE activities.

Industrial free allocation is being phased down. A minimum annual phase-down rate of 1% across all industrial activities applies from 2021 to 2030. That rate will increase to 2% for the years 2031 to 2040, and to 3% for 2041 to 2050. The phase-down rate can be increased for activities that are considered at lower risk of carbon leakage alongside other criteria as set in legislation. It can also be decreased after 2030 if carbon leakage risk remains. All adjustments first require recommendations from the independent Climate Change Commission.

AUCTIONING:

Auctioning was introduced in 2021. The volume of NZUs made available for auctioning is set on an annual basis, five years in advance (see 'Cap' section). The annual quantity is split between the quarterly auctions. In 2025, 6 million allowances were made available for auctioning, plus an additional 7.1 million allowances in the CCR. No NZUs were sold in 2025.

Auctions follow a sealed-bid, single-round format. The clearing price is set at the lowest successful bid and NZUs are sold to all successful bidders at this price, providing it is not below the confidential reserve price (see 'Market Stability Provisions' section). If the auction does not clear, all allowances on offer are rolled forward to the next auction within the same calendar year. Any units that remain unsold after the last auction of the year are permanently withdrawn from the market.

ALLOWANCES GRANTED FOR REMOVALS:

Post-1989 forestry sector and other removal activities: NZUs are granted to participants that voluntarily register in the scheme for removal activities.

Forestry removal activities: Participants are entitled to receive one NZU per tCO_2 removed for registered post-1989 forest land. If the forest is harvested[5] or the land is permanently deforested, units must be surrendered to account for the emissions. If the participant chooses to deregister from the scheme, NZUs equivalent to the number received must be returned. 11.5 million NZUs were issued for forest removal activities in 2024.

Other removal activities: 1.4 million allowances were granted in 2024 for other removal activities, such as destroying synthetic GHGs or producing and exporting a product with embedded GHGs, such as methanol.

USE OF REVENUES

General budget, including debt reduction

When NZ ETS auctioning commenced in March 2021, proceeds were allocated to the Climate Emergency Response Fund (CERF), which funded climate-related initiatives including decarbonisation, public transport, and international climate finance. In 2024, the government closed the CERF so that ETS revenue is no longer ring-fenced and climate investment proposals now go through the standard government Budget process.

Approximately NZD 2.6 billion (USD 1.5 billion) of existing CERF initiatives were retained. These include:

- Funding for nationwide low-emission transport, such as electric vehicle charging infrastructure and grants for clean heavy vehicles
- Measures to decarbonise public transport and improve access, including support for local government to purchase electric buses and providing public transport concessions for low-income citizens
- International climate finance contributions
- Support for upgrades aimed at lowering energy bills and emissions in low-income homes

5 In 2019, forest carbon accounting shifted from the short term "stock change" to the long term "averaging" method for post-1989 forests, which then became compulsory for new entrants since 2023. Under the new method, allowances are granted only up to the long-term average carbon stock of the forest and therefore do not need to be surrendered at harvest, as long as replanting occurs.

FLEXIBILITY & LINKING

BANKING AND BORROWING

Banking is allowed. NZUs do not expire.
Borrowing is not allowed.

OFFSET CREDITS

The use of offset credits is not allowed.

However, NZUs granted for forestry and other removals may be considered as offsetting emissions within the scope of the NZ ETS.

Units from Kyoto Protocol flexibility mechanisms were eligible for use in the system with no restrictions until June 2015 but have since been ineligible. Access to high-integrity international carbon markets may be part of New Zealand's strategy to meet its 2030 target. The government can decide to allow international units as part of the annual unit supply-setting process.

LINKS WITH OTHER SYSTEMS

The NZ ETS is not linked with any other system.

Until June 2015, the NZ ETS was indirectly linked to other systems (e.g., the EU ETS) via the international Kyoto Protocol flexible mechanisms. Since then, the NZ ETS has been an exclusively domestic system.

OTHER CARBON PRICING INSTRUMENTS IN THE JURISDICTION

Carbon tax: Synthetic GHG levy

COMPLIANCE

COMPLIANCE MECHANISM

Covered entities must surrender one compliance unit (NZU) per tCO_2e emitted for all their covered emissions.

COMPLIANCE PERIOD

For most sectors, the NZ ETS has annual surrender obligations. For post-1989 forestry participants, annual reporting of emissions and removals is optional, with five-year mandatory reporting periods. As a result, unit allocations and surrenders for these participants occur in the year they choose to submit reports.

MRV

FRAMEWORK: The legal framework is established by the Climate Change Response Act 2002. This Act legally requires participants to monitor their activities, report emissions annually, and surrender the corresponding number of units. Specific methodologies and calculation rules for each sector are detailed in supporting regulations.

MONITORING: The thresholds for MRV are the same as for mandatory inclusion in the ETS. Formal, pre-approved monitoring plans are not generally required. Instead, participants must follow the calculation methods in the regulations, unless they apply for a Unique Emissions Factor (UEF), which requires detailed information similar to a monitoring plan.

Up until 2025, entities processing agricultural products had MRV obligations without compliance obligations. This was supposed to transition to farm-level MRV in 2026. However, there are no longer any obligations for agricultural activities.

REPORTING: Most sectors (all those with mandatory participation) are required to report annually; the deadline is the end of March of the year following the reporting year to submit an Annual Emissions Return (emissions report). There is a different reporting cycle for forestry (see Compliance Cycle). Other removal activities may be reported more frequently (quarterly).

VERIFICATION: MRV follows a system of self-reporting supplemented by a program of official government audits. Each year, a sample of NZ ETS participants are selected for compliance review. Third-party verification is not required for emissions reports. However, third-party verification is required for first establishing a UEF, which may then be used in emissions reports as opposed to the default factors supplied by the government.

PENALTIES AND ENFORCEMENT

An entity that fails to submit an emissions report by the due date must pay a fine equal to the number of units involved, multiplied by the current unit price and a "culpability factor".

An entity that fails to surrender or repay emissions units when required must surrender the units and pay a cash penalty of three times the current market price for each unit that was not surrendered by the due date. Entities can be fined up to NZD 24,000 (USD 13,950) on conviction for failure to collect emissions data or other required information, calculate emissions and/or removals, keep records, register as a participant, submit an Annual Emissions Return when required, or notify the administering agency or provide information when required to do so.

Entities can also be fined up to NZD 50,000 (USD 29,062) on conviction for knowingly altering, falsifying, or providing incomplete or misleading information about any obligations under the scheme, including in the Annual Emissions Return report. This penalty and/or imprisonment of up to five years also applies to entities that deliberately lie about obligations under the NZ ETS to gain financial benefit or avoid financial loss.

MARKET REGULATION

MARKET DESIGN

MARKET PARTICIPATION: Any individual or organization can own and trade NZUs, if they hold an account with the NZ ETS Registry.

MARKET TYPES:

Primary: Auctions are operated jointly by NZX (New Zealand Exchange) and the European Energy Exchange (EEX) and are held four times a year. Any NZ ETS Register Account Holder can participate in the auctions. Other transfers of allowances to participants, such as industrial allocation and allocation for removals, are also considered under the primary market.

Secondary: Most NZUs are traded on the secondary market. Trades can take place directly between companies (OTC) or via a trading platform. Trades can be on a spot basis or through forward contract.

LEGAL STATUS OF ALLOWANCES: Allowances are not financial products in New Zealand law and, as a result, there is currently no single integrated market governance framework that would manage risks of misconduct in the NZ ETS. The government is currently working on options to improve market governance.

MARKET STABILITY PROVISIONS

COST CONTAINMENT RESERVE (CCR)

Instrument type: Price-based instrument

Functioning: If a predetermined trigger price is reached at auction, a specified number of allowances from the CCR are additionally released for sale. The CCR follows a two-tier system, with a specific number of allowances available for auction at each trigger. The government updates the CCR trigger prices each year, together with other auction supply settings (see 'Cap' section).

In 2025, the volume of the CCR was set at a total of 7.1 million allowances for both triggers. The trigger price was not reached during 2025, so none of these were released to market. Currently, the volume of the reserve is set at 6.5 million in 2026, dropping annually to 3.9 million in 2030.

At the start of 2026, the first CCR trigger price is NZD 203 (USD 117.99), with a total of 2.3 million units available. The second trigger price is NZD 254 (USD 147.64), with 4.2 million units available. These triggers will rise annually to reach NZD 248 (USD 144.15) and NZD 309 (USD 179.61) respectively in 2030.

PRICE FLOOR

Instrument type: Price-based instrument

Functioning: With the start of auctioning, the government introduced a price floor operating through a reserve price or minimum accepted bid at auction.

In addition to the hard auction reserve price floor, the government introduced a confidential reserve price. This is set by referencing prices from the secondary market and uses a confidential methodology to determine a reserve price below which units cannot be sold. If it is set higher than the hard auction reserve price, then it becomes the new reserve price floor for that auction.

The hard auction reserve price floor is NZD 71 (USD 41.27) in 2026, rising annually to NZD 87 (USD 50.57) in 2030.

OTHER INFORMATION

INSTITUTIONS INVOLVED

Ministry for the Environment: Responsible for establishing the regulatory framework of the NZ ETS.
Environmental Protection Authority: Responsible for the NZ ETS registry and compliance.
Ministry for Primary Industries: Responsible for the forestry sector under the NZ ETS.
Climate Change Commission: Independent body providing advice on NZ ETS settings as well as other advice that might include the NZ ETS.

EVALUATION/ETS REVIEW

The Climate Change Response Act 2002 includes provisions for reviews of the operation and effectiveness of the NZ ETS. These reviews were originally required every five years, but the timing is now discretionary. The first review took place from 2011 to 2012, and the second review took place from 2015 to 2017. A third review of the NZ ETS was opened in early 2023. Following the 2023 General Election, this was closed by the new government.

REGULATORY FRAMEWORK

→ **Climate Change Response Act 2002 – Part 4 New Zealand greenhouse gas emissions trading scheme**[6]

6 To keep New Zealand's key climate change legislation under one Act, the Climate Change Response Act incorporates both the "Climate Change Response (Emissions Trading Reform) Amendment Act 2020", and the "Climate Change Response (Zero Carbon) Amendment Act 2019" (along with many other amendment Acts). The "Zero Carbon Act" details domestic targets to 2050, established the Climate Change Commission, and mandated a process of setting and meeting five-year national emission budgets.

PHILIPPINES

- "Low Carbon Economy Investment Act" approved by the House in 2025; currently with the Senate
- If adopted, the Act will establish an ETS in the energy, transport, industry, AFOLU, and waste sectors
- Innovative 'investment-first' design foresees individual emissions limits and decarbonization funds

ETS DESCRIPTION

On June 4, 2025, the House of Representatives approved on the third reading the Low Carbon Economy Investment Act (LCEIA) (House Bill No. 11375) during the 19th Congress. The Act was transmitted to the Philippine Senate after approval by the House and refiled for the 20th Congress (2025 to 2028). On December 10, 2025, it was then approved by the Committee on Climate Change, subject to amendment and style and the recommendation of the Committees on Appropriations and Ways and Means. The LCEIA is now due to be deliberated in the Senate. If passed, any differences between the House and Senate versions will be reconciled before it is transferred to the President for signing.

The LCEIA provides for a carbon pricing framework and implementation mechanism aimed at achieving national climate targets. It will mandate large and medium emitters from the energy, transportation, industry, agriculture, forestry and waste sectors to develop decarbonization plans. Based on these, the Climate Change Commission (CCC) will then consolidate sectoral decarbonization pathways and determine annual allowance allocation plans both at the sectoral level and for individual covered entities, proportionate to their contribution to sectoral emissions and their reduction potential.

The LCEIA provides for an 'investment-first' approach to compliance. When a covered entities' emissions exceed its allocated allowance, it must first establish an individual decarbonization fund equal to the carbon price (set by the CCC) multiplied by each tonne of CO_2e above the allowed limit. The covered entity may then allocate these funds in three ways:

1. Investment in emissions reductions within the value chain, e.g., investing in energy efficiency, renewable energy, or improved waste management within its own operations and supply chain
2. Investment in viable business models beyond the value chain, e.g., establishing or investing in decarbonization enterprises
3. Transfer of decarbonization funds and obligations
   a. transferring funds to government-led climate programs and initiatives, or
   b. purchasing excess allowances from covered entities that emitted below their limit, or
   c. purchasing certified carbon offsets from projects in the Philippines.

EMISSIONS & TARGETS OF THE PHILIPPINES

OVERALL GHG EMISSIONS (including indirect CO_2, excluding LULUCF), 2020

(in $MtCO_2e$, share of total in %)

Energy	129.3	56%
Industrial processes	16.8	7%
Agriculture	54.1	23%
Waste	30.1	13%
Total	**230.3**	

Energy industries	74.5	32%
Manufacturing industries and construction	11.1	5%
Transport	29.4	13%
Other energy	13.7	6%

GHG REDUCTION TARGETS

By 2030: By 2030: Commitment to keep emissions 75% below BAU levels (excluding LULUCF), of which 2.71% is unconditional and 72.29% is conditional (NDC)

OTHER INFORMATION

INSTITUTIONS INVOLVED

Department of Environment and Natural Resources: Manages environmental and natural resources policies on IPPU, FOLU, and waste.

Climate Change Commission: Policy-making body of the government tasked to coordinate, monitor and evaluate government programs and ensure mainstreaming of climate change in developing plans; responsible for national GHG inventory development and reporting.

REGULATORY FRAMEWORK

→ **House Bill No. 2055 (formerly HB 11375) (20th Congress, 2025)**

REPUBLIC OF KOREA

KOREA EMISSIONS TRADING SYSTEM

- East Asia’s first national ETS
- Legislative changes to the K-ETS, adopted in October 2025, strengthen market stability and transparency
- The fourth Allocation Plan, published in November 2025, increases auctioning and market stability measures

ETS DESCRIPTION

The Korea Emissions Trading System (K-ETS) launched in 2015 as East Asia’s first nationwide, mandatory ETS. It covered 77.75% of Korea's GHG emissions in 2023. The K-ETS aims to help the country in its objective to become carbon neutral by 2050, a target embedded in the 2021 “Carbon Neutral Framework Act”.

The K-ETS covers 813 of the country’s largest emitters in the power, industrial, buildings, waste, transport, domestic aviation, and maritime sectors (2025 compliance year). Covered entities must surrender allowances for all their covered emissions, and allocation is done via free distribution or auctions. By 2030, 50% of allowances in the power generation sector must be auctioned, with a gradual phase-in (2026: 15%, 2027: 20%, 2028: 30%, 2029: 40%, 2030: 50%). For the other sectors, 15% of allowances must be auctioned by 2030. Free allocation is provided for emissions-intensive, trade-exposed (EITE) sectors based on carbon intensity and trade intensity benchmarks. Since 2021, domestic financial intermediaries and other third parties have been able to participate in the exchange.

The K-ETS was established by the “Framework Act on Low Carbon, Green Growth” (2010). It was preceded by a mandatory Target Management System (TMS), launched in 2012, following a two-year pilot phase. The TMS facilitated the collection of verified emissions data and training in the MRV process and still applies to smaller entities not covered by the K-ETS.

YEAR IN REVIEW

In November 2025, Korea approved the National Emission Allowance Allocation Plan for the fourth phase of the K-ETS, covering 2026 to 2030. It sets the total GHG emissions cap, introduces a quantity-based Market Stability Reserve (K-MSR), and increases the share of auctioned allowances.

The total cap for the period is set at 2.5 billion tCO_2e. A new linear reduction factor will apply, differentiating between the power generation and the non-power generation sectors, marking a shift from the previous proportional roadmap method. Sectoral reduction targets are also included in the allocation plan. The electricity, transport, buildings and waste sectors are all set to reduce emissions by more than 50% by 2035 relative to 2018 levels, with the electricity sector targeting a 69% to 75% cut. The other sectors have a lower reduction target.

Allocation rules are streamlined into two broad categories: power generation and non-power generation sectors. The auctioning share for the power generation sector will be gradually increased to 50% by 2030. Sectors at risk of carbon leakage, such as steel, non-ferrous metals, petrochemicals, cement, and semiconductors, will continue to receive 100% free allocation. These sectors account for around 95% of industrial emissions. Other non-power sectors will face a 15% auction rate. Benchmark-based allocation will be expanded to include semiconductors, displays and non-ferrous metals, and to cover fuel use across all industries. The benchmarking coefficient will gradually be tightened, moving from the weighted average of the top 37% of performers to the top 20%.

In force
Under development
Under consideration

SECTORS

POWER
AVIATION
INDUSTRY
MARITIME
BUILDINGS
WASTE
TRANSPORT

CAP OR TOTAL EMISSIONS LIMIT

absolute cap
562.5 $MtCO_2e$ (2025)

GREENHOUSE GASES

CO_2, CH_4, N_2O, HFCs, PFCs, SF_6

OFFSET CREDITS

Domestic and international offset credits, with quantitative limits.

ALLOCATION

Free Allocation: Grandparenting
Free Allocation: Fixed Benchmarking
Auctioning

AVERAGE 2025 PRICES

Average auction price: KRW 9,956 (USD 6.99)
Average secondary market price: KRW 9,393 (USD 6.60)

TOTAL REVENUE

KRW 1.55 trillion (USD 1.25 billion) since the beginning of the program
KRW 189.2 billion (USD 133 million) in 2025

In aggregate, approximately 2.1 billion allowances will be allocated for free and 260 million auctioned during the fourth phase. A further 85 million allowances will be placed in the K-MSR, and around 89 million in the new entrants' reserve. Excluding the K-MSR and new entrants' reserve, roughly 11% of total allowances will be auctioned. Additional revenues from increased auctioning are earmarked to support business decarbonization.

The quantity-based K-MSR forms part of the overall cap and will be further defined in the first half of 2026 following public consultation.

EMISSIONS & TARGETS OF THE REPUBLIC OF KOREA

OVERALL GHG EMISSIONS (including indirect CO_2, excluding LULUCF), 2023

(in $MtCO_2e$, share of total in %)

Energy	545.0	77.0%
Industrial processes	121.5	17.2%
Agriculture	22.5	3.2%
Waste	18.1	2.6%
Total	**707.2**	

Energy industries	248.2	35.1%
Manufacturing industries and construction	147.2	20.8%
Transport	97.8	13.8%
Commercial, institutional, and residential	45.5	6.4%
Other energy	6.2	0.9%

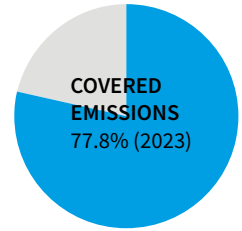
GHG REDUCTION TARGETS

By 2030: 40% reduction below 2018 levels (NDC 2.0)
By 2035: 53%-61% reduction compared to 2018 levels (NDC 2035)
By 2050: Carbon neutrality (Carbon Neutral Framework Act)

ETS COVERAGE & PHASES

COVERED EMISSIONS 2023

Verified ETS emissions: 549.9 $MtCO_2e$



PHASES

PHASE 1: Three years (2015 to 2017)
PHASE 2: Three years (2018 to 2020)
PHASE 3: Five years (2021 to 2025)
PHASE 4: Five years (2026 to 2030)

CAP OR TOTAL EMISSIONS LIMIT

An absolute cap limits the total emissions allowed in the system and is fixed ex-ante.

PHASE 1: The cap was 1,689.2 $MtCO_2e$, including a reserve of 89.4 $MtCO_2e$ for early action and new entrants. 84.5% of the reserve was used within the phase. 14.3 million allowances were set aside in a reserve for market stabilization (see 'Market Stability Provisions' section), bringing the total number of allowances in Phase 1 to 1,704.2 million.

Annual Caps in Phase 1:
2015: 540.1 $MtCO_2e$
2016: 560.7 $MtCO_2e$
2017: 585.5 $MtCO_2e$

PHASE 2: The cap was 1,777 $MtCO_2e$, including 134 million for new entrants and other purposes. 14 million allowances were set aside for market stabilization and 5 million for the market makers (see 'Market Design' section) bringing the total amount of allowances to 1,796.1 million in Phase 2.

Annual Caps in Phase 2:
2018: 593.5 $MtCO_2e$
2019: 563.2 $MtCO_2e$
2020: 562.5 $MtCO_2e$

The higher caps in Phase 2 reflected the expansion of the sectoral scope of the K-ETS (see 'Sectors and Thresholds' section).

PHASE 3: The cap was 3,010.3 $MtCO_2e$. This corresponds to an average annual cap of 602 $MtCO_2e$, including reserves. Annual caps appear higher in Phase 3 due to the expansion in scope but reflect a 4.7% decrease in emissions compared to the 2017 to 2019 baseline. In addition, 14 million allowances were set aside for market stability purposes and 20 million for market makers, bringing the total amount of allowances in Phase 3 to 3,044.3 million.

Annual Caps in Phase 3 (excluding reserves):
2021: 584.5 $MtCO_2e$
2022: 584.5 $MtCO_2e$
2023: 584.5 $MtCO_2e$
2024: 562.5 $MtCO_2e$
2025: 562.5 $MtCO_2e$

PHASE 4: The cap is 2,537.3 $MtCO_2e$ (including reserves).[1]

SECTORS AND THRESHOLDS

PHASE 1: 23 sub-sectors from the following five sectors: heat and power, industry, buildings, waste, and transportation (domestic aviation).

PHASE 2: According to the Phase 2 Allocation Plan, the public and waste sectors were disaggregated such that the K-ETS covered the following six sectors: heat and power, industry, buildings, transportation, waste, and the public sector. These were divided into 62 sub-sectors.

PHASE 3: Coverage within the transport sector was widened to include freight, rail, passenger, and maritime shipping. Construction industries have also been brought into the system's scope. This increased the number of sub-sectors to 69.

PHASE 4: The fourth allocation plan only differentiates the power generation sector and the non-power sector instead of the previous six sectors. The number of sub-sectors was increased from 69 to 73.

INCLUSION THRESHOLDS: Companies with total annual covered emissions of 125,000 tCO_2e and if a company has at least one facility with over 25,000 tCO_2e.

Covered emissions include direct but also indirect emissions from externally supplied electricity and heat. The same inclusion thresholds apply.

POINT OF REGULATION

Point source (power, industry, buildings, transport, domestic aviation, waste, public/other); downstream (buildings)

TYPE OF ENTITIES

Installations/facilities, companies

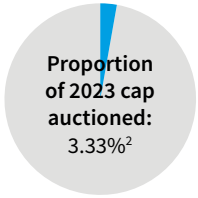
NUMBER OF ENTITIES

813 compliance entities (2025)

ALLOWANCE ALLOCATION & REVENUE

ALLOWANCE ALLOCATION[2]

Volume of 2024 cap offered for auction: 18.75 million vintage 2024 Korean Allowance Units (KAUs) between July 2024 and June 2025



PHASE 1:
Free Allocation: 100% of total allowance supply. Most sectors received free allowances based on the average GHG emissions of the base years (2011 to 2013). Three sub-sectors (grey clinker, oil refining, and aviation) were allocated free allowances following benchmarks based on previous activity data from the base years.

PHASE 2:
Free Allocation: 97% of allocation to entities in sub-sectors subject to auctioning; 100% for EITE sectors. Toward the end of Phase 2, the share of sector-specific benchmarking reached 50% of total primary allocation and was expanded to a total of seven sub-sectors: grey clinker, oil refining, domestic aviation, with the addition of waste, industrial parks, electricity generation, and district heating/cooling.

EITE sectors received 100% of their allowances for free if they met one of the following three criteria:[3]
- Additional production cost of >5% and trade intensity of >10%; or
- Additional production cost of >30%; or
- Trade intensity of >30%[4]

Auctioning: Regular auctions began in 2019. Participation in auctions was subject to some limitations. Only companies that did not receive all their allowances for free were eligible to bid, with a list of eligible bidders published by the Ministry of Environment. Bidders could purchase 15-30% of the allowances on offer. The auctions were subject to a minimum price.
- Auction share: 3% of allocation to entities in 26 eligible sub-sectors, including entities from the electricity, domestic aviation, wooden products, and metal foundry sectors.
- Auction volume: 7.95 million allowances (2019) and 9.3 million (2020)

1 The individual caps per year had not been published by the time of finalizing this report.
2 Based on the overall 2025 annual allocation including KAU24 and KAU25 allowances. The requirement that at least 10% of allowances must be auctioned only applies to the aggregation of the sub-sectors that are subject to auctioning.
3 Additional Production Cost: *(annual average GHG emissions during base year x average market price of allowances during base year)/annual average value-added production during base year*
4 Trade Intensity is calculated relative to the base year: (annual average exports + annual average imports)/(annual average sales + annual average imports)

PHASE 3:

Free Allocation: Less than 90% of free allocation to entities in sub-sectors that were subject to auctioning; 100% for EITE sectors. The share of sector-specific benchmarking was to reach 60% and expanded to a total of 12 sub-sectors: grey clinker, oil refining, domestic aviation, waste, industrial parks, electricity generation, and district heating/cooling, with the addition of steel, petrochemicals, buildings, paper, and wood processing. EITE sectors received 100% free allocation if they met the following criteria:
Production cost x Trade intensity ≥ 0.2%

Allocation was calculated using the following formulas:

- Benchmark allocation: *Benchmark value (tCO_2e/t) x historical activity level (t) x correction factor x carbon leakage factor*
- Grandparenting allocation: *Average GHG emissions of base year x correction factor x carbon leakage factor*

The carbon leakage factor was 1.0 for sectors exposed to significant risk; for non-EITE sectors, it was 0.9.

Auctioning: Bidders could purchase a maximum of 15% of the allowances on offer.

Auction share: At least 10% of allocation to entities in sub-sectors was subject to auctioning. Entities from 41 sub-sectors, excluding EITE sectors, could participate in auctions.

Auction supply: 23.5 million allowances (KAU2021), 18.2 million allowances (KAU2022), and 16.2 million allowances (KAU2023) which represented ~3% of the 589.3 $MtCO_2e$ 2023 cap (excluding reserves).

PHASE 4:

Free Allocation: Sectors at risk of carbon leakage receive 100% free allocation. The share of sector-specific benchmarking is to reach 77% and has been expanded to a total of 15 sub-sectors: grey clinker, oil refining, domestic aviation, waste, industrial parks, electricity generation, district heating/cooling, steel, petrochemicals, buildings, paper and wood processing, with the addition of semiconductors, displays, and non-ferrous metals as well as fuel use by all industries. EITE sectors receive 100% free allocation if they meet the following criteria:
Carbon intensity x trade intensity ≥ 0.1%

Allocation is calculated using:

- Benchmark allocation
- Grandparenting allocation

Auctioning: The auctioning share for the power generation sector will be gradually raised to 50% by 2030. Other non-power sectors will face a 15% auction rate.

Auction supply: 260 million allowances for the entire Phase 4
KAU2026: 17 million allowances
Auctioning represents ~11% of the 2,360 $MtCO_2e$ Phase 4 cap (excluding reserves).

USE OF REVENUES

Climate mitigation

Low-carbon innovation

Assistance for individuals, households, and businesses

Revenues from auctioning go into the Climate Response Fund, financing NDC-aligned emissions reduction investments, low-carbon technology deployment and commercialization, support for the transition of carbon-intensive sectors and affected stakeholders, and the operation and strengthening of ETS-related infrastructure.

CLIMATE RESPONSE FUND EXPENDITURES

Revenue Use Purpose	2022 in USD	2023 in USD	2024 in USD
GHG reduction	697.0 million	724.1 million	718.0 million
Creating low-carbon ecosystem	472.3 million	467.1 million	445.0 million
Just transition	134.8 million	149.6 million	144.8 million
Building carbon neutral foundation	423.4 million	460.6 million	350.9 million
Other	77.4 million	23.7 million	96.6 million
Total	**1,804.9 million**	**1,824.9 million**	**1,755.3 million**

FLEXIBILITY & LINKING

BANKING AND BORROWING

Banking is allowed with restrictions across and within phases.
Borrowing is allowed within a single trading phase.

PHASE 1: Borrowing was limited to 20% of an entity's obligation.

PHASE 2: From Phase 2 to Phase 3, banking was initially limited to the higher of two limits: the net annual number of allowances sold by the entity in Phase 2; or company- and facility-specific limits of 250,000 KAUs and 5,000 KAUs, respectively. Borrowing was limited to 15% of an entity's obligation in 2018.

Rules on banking and borrowing were adjusted in 2019. The borrowing limit was set by each

entity's past borrowing activity, according to the following formula: Compliance obligation of the entity x [Borrowing limit of previous year – ("borrowing ratio" in previous year x 50%)]/entity's emission volume.

The banking limit for the transition between Phase 2 and Phase 3 was calculated as follows:

- For 2018 vintage allowances, entities could bank either three times the net sales (total allowances sold minus total allowances bought) or 75,000 allowances for companies emitting >125,000 tCO_2e or 15,000 allowances for companies emitting >25,000 tCO_2e — whichever was higher;
- For KAU19s, the amounts above were reduced by one-third, i.e., two times the net selling amount or 50,000 for large entities (10,000 for smaller entities) allowances, whichever was higher;
- For KAU20s, the amount represented a two-third reduction compared to the KAU18 rule.

PHASE 3: In the first trading year, entities could borrow up to 15% of their compliance obligation. From the second to fourth trading years, the same borrowing formula as for 2019 applied.

Banking in Phase 3:

- In the first and second compliance years (2021 and 2022), entities could bank up to double their net number of KAUs and Korean Credit Units (KCUs) sold on the secondary market (excluding swaps and auctions).
- In the third and fourth compliance years (2023 and 2024), entities' banking limits were equal to their net number of allowances (total allowances sold minus total allowances bought) and offset credits sold.

Phase 3 allowances and offset credits could only be carried over to the first compliance year of Phase 4 (2026 to 2030). The banking limit in the fifth compliance year (2025) had been expanded to "five times of net sales".

PHASE 4: In the first trading year, entities can borrow up to 30% of their compliance obligation. From the second to fourth trading years, the same borrowing formula as for 2019 applies.

Banking: Gradual easing of carry-over restrictions:
2026: Companies with a surplus can bank allowances equivalent to six times their net sales
2027: Seven times their net sales
2028: Eight times their net sales
2029: Nine times their net sales
2030: Ten times their net sales
The net sales condition is not applied to short companies.

OFFSET CREDITS

Domestic offset credits, i.e., Korean Offset Credits (KOCs), were allowed in Phase 1. KOCs and international credits (subject to qualitative criteria) have been allowed since Phase 2. Both domestic and international credits must be converted to KCUs to be used for compliance.

PHASE 1:
Qualitative limit: The use only of domestic offset credits from external reduction activities implemented by non-ETS entities — and that met international standards — was allowed. Domestic CDM credits (CERs) and KOCs were allowed. Eligible activities included those permitted under the CDM plus carbon capture and storage, and had to have been implemented after mid-April 2010.

Quantitative limit: Up to 10% of each entity's compliance obligation.

PHASE 2:
Qualitative limit: The use of CERs generated from June 2016 from international CDM projects developed by Korean companies was allowed if:

- at least 20% of the ownership rights, operating rights, or the voting stocks were owned by a Korean company; or
- a Korean company supplied low-carbon technology worth at least 20% of the total project cost.

Quantitative limit: Up to 10% of each entity's compliance obligation (of which up to 5% could be international offset credits).

PHASE 3:
Qualitative limit: The use of offset credits was allowed according to the same qualitative criteria outlined for Phase 2. However, limitations applied to the issuance and conversion of credits:

- GHG reduction projects (according to reduction period coverage) to KOC conversion: 1) April 2010 to December 2020: within two years (2021 to 2022); 2) January 2021 onwards: within two years (2022 to 2023).
- KOC to KCU conversion: within five years of KOC issuance.

Quantitative limit: Up to 5% of each entity's compliance obligation, regardless of type.
As of December 2024, there were 317 registered methodologies (211 for CDM and 106 for domestic offset credits). The government aims to use 37.5 million international credits to fulfill its 2030 NDC.

For the 2022 compliance period, 7.6 million KOCs, 7 million of which were from domestic projects and the remainder from overseas projects, were converted into KCU22s, all of which were used for surrender of emission permits (65 entities).

In the 2023 compliance period, 7.6 million KOCs (1.6 million from domestic projects and 6 million from overseas) were converted into KCU23s. Only 732,872 were submitted for compliance.

In the 2024 compliance period, 1.9 million KOCs (1.7 million from domestic projects and 0.2 million from overseas) were converted into KCU24s. Only 71,491 were submitted for compliance.

Allocation was largely sufficient to cover compliance obligations, which can explain the drop in offset use.

PHASE 4:
Qualitative limit: The use of offset credits is allowed. Domestic credits can be supplied by entities that are not subject to legal obligations under the K-ETS and that began after December 2016, the domestic entry into force of the Paris Agreement. International ex post credits that comply with international rules of Article 6 of the Paris Agreement are accepted. Additionally, credits from old projects that started after 2010 are accepted.

Quantitative limit: Up to 5% of each entity's compliance obligation, regardless of type.

LINKS WITH OTHER SYSTEMS
The K-ETS is not linked with any other system.

COMPLIANCE

COMPLIANCE MECHANISM
Covered entities must surrender one compliance unit (allowance or offset credit) per tCO_2e emitted.

COMPLIANCE PERIOD
One year. Entities must surrender allowances for the previous year by the end of August.

MRV
FRAMEWORK: The legal basis is contained in the "Act on the Allocation and Trading of Greenhouse Gas Emission Allowances" and the "Enforcement Decree of the ETS Act". Administrative rules on the MRV system are contained in the "Guidelines on Reporting and Certification of Emissions under the Greenhouse Gas Emissions Trading System".

MONITORING: Monitoring may be conducted either periodically or continuously using approved measurement devices, in accordance with an entity's monitoring plan, while emissions reporting and third-party verification are carried out on an annual basis. The monitoring plan must define core elements, including company information and organizational boundaries, facility-level monitoring methodologies, activity data measurement points, tier selection, QA/QC procedures, and plans for developing emission factors. MRV requirements also extend beyond the ETS to non-ETS entities designated under the TMS, under which companies with annual emissions below 50,000 tCO_2e (or below 15,000 tCO_2e at the worksite level) are required to submit a verified emissions statement.

REPORTING: Annual reporting of emissions from the previous year must be submitted by the end of March. Liable entities are required to revise and resubmit emission reports which are found to be incorrect.

VERIFICATION: Emissions must be verified by a third-party verifier. Emission reports are reviewed and certified by the Certification Committee of the Ministry of Environment by the end of May.

PENALTIES AND ENFORCEMENT
The penalty shall not exceed three times the average market price of allowances of the given compliance year.

MARKET REGULATION

MARKET DESIGN
MARKET PARTICIPATION: Compliance entities. Limited participation for non-compliance entities. Initially limited to compliance entities, the "market maker" system was introduced in Phase 2 to improve market liquidity. Market makers are third-party participants in the K-ETS who can draw on a separate government-held reserve of allowances set aside at the time of original allocation, to increase liquidity in the market through daily allowance trade. Three new financial firms were appointed in 2021, in addition to the two market makers that had been appointed in 2019. In December 2022, the government announced a further two market makers who began operating from 2023. Eight market makers were appointed later in 2023. In 2025, a total of nine market makers were admitted to the K-ETS market.

From Phase 3, as per the 2012 "Emissions Trading Act" and the Presidential Decree, non-compliance entities in the form of other non-market maker domestic financial intermediaries can participate in the secondary market and trade allowances on the Korea Exchange (KRX). In line with this, 20 financial intermediaries were approved for participation in the carbon market from 2021 (the total as of December 2025 was 21 financial intermediaries). Though they initially could only hold up to 200,000 allowances each, to avoid excessive market shares, this number was increased to 500,000 in December 2022, and to 1 million in 2023.

MARKET TYPES:

Primary: Monthly auctions have been held since 2019. Auctions are open to all companies with compliance obligations under the K-ETS. Auctions take place via the KRX.

Secondary: The K-ETS has traditionally had a high share of over-the-counter transactions. Additionally, the KRX manages the platform where secondary spot market transactions take place. Allowances, KCUs, and KOCs are traded on the exchange for different vintage years. Consignment trading was launched in November 2025.

LEGAL STATUS OF ALLOWANCES: The legal status of KAUs is not explicitly referenced in the 2012 Emissions Trading Act or the Presidential Decree. However, KAUs are not regulated under financial market law. For the purpose of preventing market price manipulation, unfair trade and to regulate exchange of information, Article 22, paragraph 3 of the Act specifies that certain provisions of the "Capital Market and Financial Investment Business Act" apply.

MARKET STABILITY PROVISIONS

KOREAN MARKET STABILITY RESERVE (K-MSR)

Instrument type: Quantity-based and price-based instrument

Functioning of the quantity-based mechanism: The fourth allocation plan announced the establishment of a quantity-based K-MSR, which is to be detailed in the first half of 2026, after public consultation. 85 million allowances will be placed in the K-MSR for Phase 4.

Functioning of the price-based mechanism: An Allocation Committee is in place to implement market stabilization measures if:

- the market allowance price of six consecutive months is at least three times higher than the average price of the two previous years;
- the market allowance price of the last month is at least double the average price of the two previous years and the average trading volume of the last month is at least twice the volume of the same month of the two previous years;
- the average market allowance price of a given month is lower than 60% of the average price of the two previous years; or
- it is difficult to trade allowances due to an imbalance of supply or demand.

Stabilization measures include:

- additional auctioning of up to 25% of allowances from the market stabilization reserve, which contains 14.3 million allowances;
- the establishment of a limit to the number of allowances entities can hold: minimum (70%) or maximum (150%) of the allowances of the compliance year;
- an increase or decrease of the borrowing limit;
- an increase or decrease of the offset limit; and
- the temporary establishment of a price ceiling or price floor.

In 2018, the Allocation Committee put up for auction an additional 5.5 million allowances from the stability reserve to ease the market in the lead-up to the 2017 compliance deadline; 4.7 million of these were sold. No more such sales have occurred since.

In 2021, the Allocation Committee set a price floor of KRW 12,900 (USD 9.47) per tonne in April and KRW 9,450 (USD 6.93) per tonne in June.

In 2023, the government set two temporary price floors. The measure's trigger price remained at an average of KRW 12,088 (USD 8.87), calculated as 60% of the average price from the preceding two years. The first price floor of KRW 7,020 (USD 5.15) was established in July and the last price floor of KRW 7,750 (USD 5.69) was set in November and lifted in early December (when prices were maintained at KRW 8,520 (UDS 6.25) for five consecutive days).

OTHER INFORMATION

INSTITUTIONS INVOLVED

Ministry of Climate, Energy and Environment: Holds overall responsibility for the K-ETS.

Ministry of Economy and Finance: Established the Allocation Committee; briefly held overall responsibility for the K-ETS between June 2016 and January 2018.

Korea Exchange (KRX): Trading and auctioning platform.

Greenhouse Gas Inventory and Research Center (GIR): Responsible for the registry and technical implementation.

International Carbon Reduction Council: Ministry-level body that promotes GHG reduction projects.

EVALUATION/ETS REVIEW

The GIR regularly releases evaluation reports with emissions statistics, market indicators, and survey results from covered entities.

The 2024 report[5] states that verified emissions from 735 entities receiving allocated allowances totaled 549.9 $MtCO_2e$ in 2023—3.9% lower than the previous year (572.0 Mt, 713 entities). All covered entities met their surrender obligations. While certified emissions exceeded allocations in buildings, waste, and public services sectors, all sectors met targets through trading, banking, and offset mechanisms.

Power sector (60 entities): 212.0 Mt, down 18.2 Mt (7.9%) due to lower electricity demand, increased carbon-free generation, and reduced coal/LNG-based generation.

Industry sector (476 entities): 311.3 Mt, down 4.4 Mt (1.4%), driven by global economic slowdown, sluggish construction, and expanded GHG reduction facilities for semiconductor processing.

5 See **Research Report - Greenhouse Gas Information Center**

Buildings sector (40 entities): 4.9 Mt, down 0.05 Mt (0.9%), attributed to reduced city gas consumption from higher temperatures and increased gas prices.

Transport sector (67 entities): 6.7 Mt, down 0.03 Mt (0.5%), reflecting reduced travel distances in railway and aviation, plus increased zero-emission vehicle supply.

REGULATORY FRAMEWORK

- → **Carbon Neutral Framework Act**
- → **Act on the Allocation and Trading of Greenhouse Gas Emissions Allowances**
- → **Enforcement Decree of the Act on the Allocation and Trading of Greenhouse Gas Emissions Allowances**
- → **First Basic Plan for the ETS (2015 to 2024)**
- → **Second Basic Plan for the ETS (2017 to 2026)**
- → **Third Basic Plan of the ETS (2021 to 2030)**
- → **Fourth Basic Plan for the ETS (2026 to 2035)**
- → **First Allocation Plan**
- → **Second Allocation Plan**
- → **Third Allocation Plan**
- → **Fourth Allocation Plan**

SAITAMA

SAITAMA TARGET SETTING EMISSIONS TRADING SYSTEM

- Covers large buildings and factories
- Linked to the Tokyo Cap-and-Trade Program since its 2011 launch

ETS DESCRIPTION

Saitama Prefecture's ETS was launched in April 2011. It covers around 17% of the prefecture's 2022 emissions.

Saitama's ETS covers about 600 entities in the industrial and commercial buildings sectors. The cap is aggregated bottom-up from annual facility-level emissions limits (baselines). Covered entities must surrender compliance units for emissions that exceed the installation's baseline, which is calculated using base-year emissions and a compliance factor, but also things such as expected energy efficiency gains and the extent to which the installation consumes energy supplied by other facilities. The Governor of Saitama, after expert consultation, sets the compliance factor for each period.

The ETS was instituted as part of the "Saitama Prefecture Global Warming Strategy Promotion Ordinance", with the aim of eventually establishing a common system with other prefectures in the metropolitan area. Saitama's ETS is linked to Tokyo's cap-and-trade program, with credits mutually exchangeable between the two.

YEAR IN REVIEW

In 2025, the fourth compliance period (FY2025 to FY2029) started. The compliance factor rose to 50% for office buildings and 48% for factories. Off-site renewable energy, including self-consignment and PPA, counts as zero emissions to boost the use of renewables, and certificates derived from renewable energy can be deducted from energy-related CO_2 emissions. In addition, actual emission factors, instead of fixed emission factors, are used to calculate emissions from electricity, heat, and city gas supplied by retailers, based on contracts with the facilities.

Moreover, from April 2025, a new system for excess emission reductions credits was introduced and applies to reductions achieved through energy efficiency and renewable energy; credits will no longer be awarded for certification improvements or emission factor adjustments.

In June, the Prefectural government announced that, in FY2023, the Saitama ETS achieved a 42% reduction in emissions below base-year levels (see 'Allowance Allocation' section for base-year calculation).

It was also announced that, in FY2023, 448 of the 564 covered facilities (79%) achieved their targets in the second compliance period.

1 The cap is the sum of all individual companies' emission limits (baselines), which are set at the beginning of a compliance period for the entire compliance period. The baselines are absolute limits and not intensity-based.

In force
Under development
Under consideration

SECTORS

INDUSTRY

BUILDINGS

CAP

Absolute cap[1]
8.5 $MtCO_2$ (2023)

GREENHOUSE GASES

CO_2

OFFSET CREDITS

Domestic (national and prefectural), with quantitative limits

ALLOCATION

Free Allocation: Grandparenting
Free Allocation: Fixed Benchmarking

AVERAGE 2025 PRICES

Average price (second compliance period, 2015 to 2019):
JPY 144 (USD 0.95)

EMISSIONS & TARGETS OF SAITAMA

OVERALL GHG EMISSIONS (including indirect CO_2, excluding LULUCF), FY 2022

(in $MtCO_2e$, share of total in %)

Energy	31.6	83%
Industrial processes	2.2	6%
Waste	1.0	3%
Other	3.1	8%
Total	**37.8**	

Manufacturing industries and construction	7.3	19%
Transport	8.4	22%
Commercial and residential	15.9	42%

GHG REDUCTION TARGETS

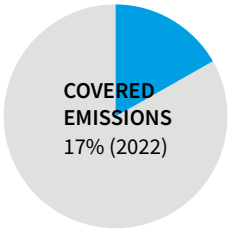
By 2030: 46% reduction from FY2013 levels (Saitama Prefecture Global Warming Countermeasures Action Plan, Second Phase)

By 2050: Carbon neutrality (Saitama Prefecture Global Warming Countermeasures Action Plan, Second Phase)

ETS COVERAGE & PHASES

COVERED EMISSIONS 2022

Verified ETS emissions: 6.3 $MtCO_2$



PHASES

PHASE 1: 1 April 2011 to 30 September 2016
PHASE 2: 1 April 2015 to 31 January 2022
PHASE 3: 1 April 2020 to 30 September 2026
PHASE 4: 1 April 2025 to 30 September 2031

The Saitama ETS has both phases and compliance periods (see 'Compliance' section). A phase is defined as the compliance period plus an additional 18-month adjustment period, during which facilities may continue to trade credits in order to reach their targets for the corresponding compliance period.

By exception, an additional four months to the usual 18-month adjustment period applied for the second phase due to impacts of the COVID-19 pandemic.

CAP OR TOTAL EMISSIONS LIMIT

PHASE 1: 33.3 $MtCO_2$
PHASE 2: 45.6 $MtCO_2$

The total emissions limit under the system is the sum of the bottom-up installation-level baselines for all individual covered entities. These baselines are calculated using base-year emissions and a compliance factor (see 'Allowance Allocation' section).

The bottom-up emissions limit for the first compliance period was 33.3 $MtCO_2$. For the second compliance period, it was 45.6 $MtCO_2$. The figures for the third and fourth compliance periods are not yet known.

SECTORS AND THRESHOLDS

Consumption of fuels, heat, and electricity in commercial and industrial buildings.

INCLUSION THRESHOLDS: Facilities that consume the energy equivalent of at least 1,500kL of crude oil for three consecutive years.

POINT OF REGULATION

Downstream (industry, buildings)

TYPE OF ENTITIES

Facilities

NUMBER OF ENTITIES

564 facilities (FY2023):

- Offices/commercial buildings: 168
- Factories: 396

ALLOWANCE ALLOCATION & REVENUE

ALLOWANCE ALLOCATION

All allowances in the Saitama ETS are allocated for free.

Under the Saitama ETS, each facility has its own cap, which serves as the "baseline" defining the reduction target it must achieve. Baselines for facilities are set according to the following formula: Base-year emissions x (1-compliance factor) x compliance period (five years). The compliance factor for each period is based on regulations established by the Governor of Saitama Prefecture.

Base-year emissions are the average emissions of any three consecutive years between FY2002 and FY2007, as chosen by each entity.

Baselines for new entrants are based on past emissions (average annual emissions for three consecutive fiscal years of the four fiscal years immediately preceding the compliance period) or on emissions intensity standards provided by the government.

At the beginning of each new compliance period, all allowances (in Saitama also known as "credits"), with the exception of those reserved for new entrants, are allocated for free to covered entities for the full period. Facilities with emissions below their baseline at the end of the compliance period may keep or trade their excess allowance credits; those that exceed their baseline must purchase and surrender credits from other facilities or offset credits to meet their compliance obligation.

COMPLIANCE FACTOR:
First compliance period: 8% or 6% reduction below base-year emissions.

Second compliance period: 15% or 13% reduction below base-year emissions.

Third compliance period: 22% or 20% reduction below base-year emissions.

Fourth compliance period: 50% or 48% reduction below base-year emissions.

The higher compliance factor applies to commercial buildings, as well as to district heating and cooling (DHC) plants. The lower compliance factor applies to other facilities, such as commercial buildings, that use DHC for more than 20% of the entire energy consumption, and factories.

For large facilities owned by small and medium-sized enterprises, the compliance factor is four percentage points lower. For medical facilities where electricity is vital to preserve life and health, the compliance factor is two percentage points lower. For facilities where electricity usage rate is less than 20% of crude oil equivalent energy consumption, the compliance factor is three percentage points lower.

ADDITIONAL EMISSION REDUCTION CREDITS:
- Renewable energy: When covered facilities generate electricity from renewable sources for their own use, they can deduct this from the total energy usage to be reported until the third compliance period.
- Low-carbon electricity: In order to evaluate energy efficiency efforts of the covered facilities, CO_2 emission factors of electricity suppliers are fixed during each compliance period. When covered facilities procure electricity from suppliers with lower emissions factors, in the third compliance period, they can deduct the difference between these emission factors from their reported emissions accordingly, to reflect this lower emissions factor of energy purchased.

Facilities demonstrating outstanding performance in reducing emissions, as well as in the introduction, use, and management of energy efficient equipment, are certified as top-level facilities that receive lower compliance factors according to their rate of progress, for a period of five years. The certification standards represent the best available energy efficiency measures, covering more than 230 different energy-saving measures.

FLEXIBILITY & LINKING

BANKING AND BORROWING
Banking is allowed, but only between two consecutive compliance periods.
Borrowing is not allowed.

OFFSET CREDITS
The use of offset credits is allowed.

PHASE 1: 103,000 tCO_2e of offset credits were used for compliance
PHASE 2: 35,000 tCO_2e of offset credits were used for compliance

QUALITATIVE LIMITS: Five types of offset credits are allowed to complement the emission reduction credits issued to facilities covered by the Saitama ETS when their emissions fall below their baseline:
- Small and mid-size facility credits: Emissions reductions from non-covered small and medium-sized facilities in Saitama Prefecture.
- Outside Saitama credits: Emission reductions achieved from large facilities outside of Saitama Prefecture. Large facilities are those with an energy consumption of 1,500kL of crude oil equivalent or more in a base year, and base-year emissions of 150,000 tonnes or more.
- Renewable energy credits: Renewable energy credits generated under the Saitama ETS encompass the following types: Environmental Value Equivalent, Renewable Energy Certificates, and New Energy Electricity, generated under the "Renewable Portfolio Standard Law". Credits from solar (heat, electricity), wind, geothermal, or hydro (under 1,000 kW) electricity production for use under the Saitama ETS were converted to 1.5 times the value of regular credits until the end of the second compliance period. From the third compliance period, they are converted on a one-to-one basis. Credits from biomass (biomass rate of 95% or more, black liquor is excluded) are also converted with a factor of one.
- Tokyo credits (via link): These encompass excess credits: Emissions reductions from facilities with base-year emissions of 150,000 tonnes or less.

QUANTITATIVE LIMITS: Quantitative limits apply only for Outside Saitama credits: These are issued only for the reduction amount that exceeds the compliance factor. These credits can be used for compliance for up to one-third of offices' reduction obligations. Factories can use up to 50%.

All offset credits must be verified by a verification agency.

LINKS WITH OTHER SYSTEMS

Since its launch in 2011, the Saitama ETS has been linked with the Tokyo Cap-and-Trade Program. Tokyo and Saitama credits are fungible in the two jurisdictions. About 60 credit transfers took place between them by the end of the third compliance period.

OTHER CARBON PRICING INSTRUMENTS IN THE JURISDICTION

Carbon tax: Japan national carbon tax
ETS: Japan national ETS (started in April 2026)

COMPLIANCE

COMPLIANCE MECHANISM

Covered entities must surrender one compliance unit (credit or offset credit) per tCO_2 that exceeds the facility's annual emissions limit (baseline).

COMPLIANCE PERIOD

Four or five years.

COMPLIANCE PERIOD 1: FY2011 to FY2014
COMPLIANCE PERIOD 2: FY2015 to FY2019
COMPLIANCE PERIOD 3: FY2020 to FY2024
COMPLIANCE PERIOD 4: FY2025 to FY2029

Compliance units must be surrendered 18 months after the end of the compliance period (see 'Phases' section), i.e., by the end of September of the second fiscal year.

MRV

FRAMEWORK: MRV is based on the "Saitama Monitoring/Reporting Guidelines" and "Saitama Verification Guidelines".

MONITORING: Covered facilities must submit a Global Warming Countermeasures Plan and Implementation Status Report by the end of July of the first year of the compliance period. Every year thereafter, facilities must submit a new Global Warming Countermeasure Plan and emissions report.

Seven GHGs must be monitored and reported: CO_2, CH_4, N_2O, PFCs, HFCs, SF_6, and NF_3 when emissions of each reaches or exceeds 3,000 tCO_2e.

REPORTING: Every year after the first year of the compliance period, emission reports must be submitted by the end of July.

VERIFICATION: Emission reports require third-party verification when the credits are surrendered.

PENALTIES AND ENFORCEMENT

Every year, Global Warming Countermeasures Plans and Implementation Status Reports for all covered facilities are published on the Saitama Prefecture's website. If a facility does not achieve its reduction target, its name is made public, and the insufficient reduction amount is added to its target for the following compliance period.

MARKET REGULATION

MARKET DESIGN

MARKET PARTICIPATION: Compliance entities, i.e. those above the inclusion threshold (see 'Sectors and Thresholds' section). Entities can earn credits only after achieving emission reductions, and only emitting facilities can participate in trading.

MARKET TYPES:
Primary: All allowances are allocated for free.

Secondary: Covered facilities trade over the counter. Businesses wishing to buy or sell credits can go through a private intermediary to find a buyer and negotiate the price.

LEGAL STATUS OF ALLOWANCES: Allowances are not considered financial instruments.

MARKET STABILITY PROVISIONS

Covered facilities trade over the counter, and the Saitama government does not control carbon prices.

OTHER INFORMATION

INSTITUTIONS INVOLVED

Saitama Prefectural Government: Oversees the Target Setting Emissions Trading System in Saitama.

EVALUATION/ETS REVIEW

Official status and evaluation reports are published on an annual basis.

REGULATORY FRAMEWORK

→ **Saitama Prefecture Global Warming Strategy Promotion Ordinance**
→ **FY2023 results of the Saitama ETS**

SHANGHAI

SHANGHAI PILOT EMISSIONS TRADING SYSTEM

- Achieved 100% compliance rate for 12 consecutive years
- Active offset credit trading market, pioneered allowance spot forward trading
- Shanghai Environmental and Energy Exchange (SEEE) operates the National Carbon Market exchange

ETS DESCRIPTION

The Shanghai Pilot ETS was launched in November 2013 and was the second Chinese region to start its pilot system.

The system covers 403 entities. It covered power and industrial sectors at the beginning and kept expanding into new sectors such as buildings, domestic aviation, maritime, and road transport. The Shanghai government has a plan to lower the inclusion threshold and expand the ETS to cover more public buildings and GHGs in the next three years.

Covered entities must surrender allowances for all their covered emissions, and allocation is based on auctions or free allocation. Ad hoc auctions were held between 2014 and 2019, after which they have been held every year.

The Shanghai ETS is the only pilot that has achieved a 100% compliance rate since its launch. It is also one of the most active pilots in terms of offset credit trading. Shanghai has been a center for carbon finance innovations in China, including repurchases, carbon funds, carbon trusts, Chinese Certified Emission Reduction (CCER) credit pledge loans, green bonds, and carbon margin trading.

The Shanghai ETS operates in parallel with China's National Carbon Market. As the National Carbon Market expands to new sectors, covered entities in these sectors are transitioning out of the Shanghai ETS.

YEAR IN REVIEW

In December 2024, the allowance allocation plan for compliance year 2024 and the ETS working plan for 2025 were released. According to the 2024 allocation plan, nine companies in the hazardous waste management sector have been added, but with MRV obligations only. All covered entities surrendered their compliance units for compliance year 2024 before June 2025.

In February 2025, the Shanghai Municipal People's Government issued the "Shanghai Carbon Emissions Management Measures". These measures took effect in April, replacing the "Interim Measures for the Administration of Carbon Emissions in Shanghai" released in 2013, and now serve as the legal basis for the Shanghai ETS. The new Measures clarify the management responsibilities and operational procedures for the Shanghai ETS, increase penalties for violations, and introduce local offset mechanisms to encourage small-scale emission reduction projects and individual emission reduction actions.

1 The power sector was integrated into China's national ETS in 2021, covering emissions from 2019 to 2020. However, the national ETS only covers coal- and gas-fired generators; oil-fired generators remain covered by the Shanghai ETS.
2 The Shanghai Pilot ETS covers direct and indirect emissions from public buildings, in sectors such as hotels, ports, and data centers.

In force
Under development
Under consideration

SECTORS

- POWER[1]
- DOMESTIC AVIATION
- INDUSTRY
- MARITIME
- BUILDINGS[2]

CAP OR TOTAL EMISSIONS LIMIT

Intensity-based emissions limit
106 $MtCO_2$ (2024), 80 $MtCO_2$ (2025)

GREENHOUSE GASES

CO_2

OFFSET CREDITS

Domestic (national and provincial), with quantitative limit

ALLOCATION

Free Allocation: Grandparenting
Free Allocation: Output-based Benchmarking
Auctioning

AVERAGE 2025 PRICES

Average secondary market price: CNY 65.89 (USD 9.16)

TOTAL REVENUE

CNY 628.01 million (USD 87.30 million) since the beginning of the program

In July, the Shanghai Municipal People's Government issued the "Action Plan for Deepening Reform of the ETS from 2026 to 2030". This plan sets out the development direction for the Shanghai ETS over the next five years, with key priorities including:

1. implementing an absolute cap for sectors with stable carbon emissions;
2. lowering thresholds for certain industries in 2026 and expanding the scope of covered sectors in 2028, with potentially covering other non-CO_2 GHG;
3. further refining MRV rules and incorporating accounting for green energy;
4. increasing the proportion of auctioned allowances, with the share of those up to 8% in 2027 and setting to rise in subsequent years; and
5. promoting the generation and use of local offset credits.

Over the next five years, the Shanghai Ecology and Environment Bureau (EEB) and other relevant departments will refine the design of the Shanghai ETS in accordance with this plan.

In June, the allowance allocation plan for compliance year 2025 was released. It confirmed that covered entities in the steel and cement sectors have been integrated into the National Carbon Market.

In October, the Shanghai EEB issued the "Shanghai Carbon Inclusive Management Measures". Coming into effect in November, these new measures supersede the "Shanghai Carbon Inclusive Management Measures (Trial)" issued in 2023, and further regulate the issuance, administration, and usage of the provincial offset mechanism, which generates Shanghai Carbon Emission Reduction (SHCER) credits.

The only auction that the Shanghai EEB organized in 2025 did not clear as no market participants submitted bids.

EMISSIONS & TARGETS OF SHANGHAI

OVERALL GHG EMISSIONS (including indirect CO_2, excluding LULUCF), 2022

178.6 $MtCO_2e$[3]

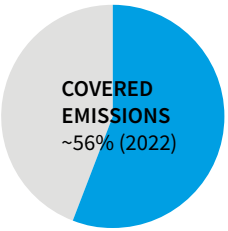
GHG REDUCTION TARGETS

By 2030: CO_2 emissions peaking before 2030 ("Shanghai Carbon Peaking Implementation Plan")
By 2060: Carbon neutrality ("Implementing Opinions of Shanghai on Peaking Carbon Dioxide and Achieving Carbon Neutrality in Full and Faithful Implementation of the New Development Philosophy")

ETS COVERAGE & PHASES

COVERED EMISSIONS 2022

~56%[4]



PHASES

PHASE 1: 2013 to 2015, also known as the "trial phase"
PHASE 2: 2016 to present

CAP OR TOTAL EMISSIONS LIMIT

A cap under Shanghai ETS changes as a function of production (output) and is the sum of the bottom-up output-based/installation-level emissions limits for all individual covered entities. The bottom-up emissions limits do not represent an absolute cap. Inclusive of reserves, the caps for past years were set as follows:

PHASE 1:
~150 $MtCO_2$ per year

PHASE 2:
2016: 155 $MtCO_2$
2017: 156 $MtCO_2$
2018: 158 $MtCO_2$
2019: 158 $MtCO_2$
2020[5]: 105 $MtCO_2$
2021: 109 $MtCO_2$
2022: 100 $MtCO_2$
2023: 105 $MtCO_2$
2024: 106 $MtCO_2$
2025: 80 $MtCO_2$

SECTORS AND THRESHOLDS

PHASE 1: Airports, domestic aviation, chemical fibers, chemicals, commercial buildings, power and heat, water suppliers, hotels, financial institutions, iron and steel, petrochemicals, ports, non-ferrous metals, building materials, paper, railways, rubber, and textiles.

Inclusion thresholds:

- Power and industry: Emissions of at least 20,000 tCO_2 per year
- Other sectors: Emissions of at least 10,000 tCO_2 per year

3 Due to the lack of publicly available data, the data reported here is estimated by local experts based on public sources.
4 No data is publicly available for recent years. This percentage is the covered emissions in Shanghai ETS including both direct and indirect emissions divided by the total direct emissions in Shanghai.
5 This drop from 2019 is primarily due to the transfer of large parts of the power sector into the China National Carbon Market.

PHASE 2: Previous sectors plus shipping, electronic materials, pharmaceuticals, automotive manufacturing, and food manufacturing. Power plants were transferred to China's National Carbon Market from 2019, but some special captive power plants and heat generation entities remain covered by the Shanghai carbon market. Data centers and road transport have been covered since 2022, with the latter only having MRV obligations. Hazardous waste management has been covered since 2024 with MRV obligations only. The steel and cement sectors were integrated into the National Carbon Market in 2024, while the power grid is not covered as of the same year.

Inclusion thresholds:

- Industry: either emissions of at least 20,000 tCO_2 per year or energy consumption of 10,000 tonnes of coal equivalent (tce) per year.
- Aviation: either emissions of at least 20,000 tCO_2 per year or energy consumption of 10,000 tce per year.
- Maritime: either emissions of at least 100,000 tCO_2 per year or energy consumption of 50,000 tce per year.
- Data centers: emissions of at least 20,000 tCO_2 per year.
- Buildings (including ports and airports): either emissions of at least 10,000 tCO_2 per year or energy consumption of 5,000 tce per year.

POINT OF REGULATION

Point source (e.g., industry, road transport, aviation); downstream (indirect emissions from electricity and heat consumption).

TYPE OF ENTITIES

Companies

NUMBER OF ENTITIES

403 entities (2025)

ALLOWANCE ALLOCATION & REVENUE

ALLOWANCE ALLOCATION

Allowances are distributed for free, using benchmarking or grandparenting.

In Phase 1, covered entities received allowances for the whole period at once. In Phase 2, allowances are allocated on an annual basis. In addition, allocation methods have been progressively improved, including increased use of benchmarks.

The allocation plan is updated every year. For the compliance year 2025:

FREE ALLOCATION:

Benchmarking: Free allocation based on sector-specific benchmarks is used for electricity and heat producers, and data centers.

Grandparenting: Grandparenting based on historical emissions intensity is used for some industrial sectors, aviation, ports, shipping, water suppliers, and public buildings, generally based on the previous three years' data.

Grandparenting based on historical emissions is used for airports, and some industrial sectors with complex products or a considerable change in emissions boundaries, generally based on the previous three years' data.

Ex-post allocation adjustments, e.g., based on production data, are applied for those with historical intensity or benchmarking allocations. For the compliance year 2025, these covered entities will receive allowances at 80% of 2024 their verified 2024 emissions as pre-allocation. Before the compliance deadline in 2026, the competent authority will supplement or deduct the allowance based on the verified output in 2025.

In addition to the basic allocation method, the Shanghai ETS has introduced three adjustment coefficients to encourage low-carbon fuels, continuous emission reduction, and reduction of other pollutants.

The lower the proportion of carbon-containing energy, the higher the percentage of free allowances allocated based on the allocation method. This free allowance ranges from a minimum of 93% to a maximum of 99%.

In addition, if covered entities reduce emissions over three years consecutively, they can receive an extra 0.5% or 1% of free allowances.

Covered entities that demonstrate strong efforts in reducing both air pollution and carbon emissions, and are not subject to environmental penalties nor violations during 2025 and 2026, will receive an additional 0.3 to 0.5% allowances.

AUCTIONING: A small share of the annual cap may be auctioned. The main purpose of auctions is to provide entities with additional supply to meet their compliance demand. One auction was held in each of the following years: 2014, 2016, 2018, and 2019. From 2020 to 2023, two auctions were held each year, and in 2024 three auctions were held. In 2025, only one auction was organized, in June, but no entities participated.

USE OF REVENUES


General budget, including debt reduction

Revenues are attributed to the provincial treasury.

FLEXIBILITY & LINKING

BANKING AND BORROWING

Banking is allowed, with some restrictions for banking across trading periods. For banked allowances from the first trading period, only one-third per year could be used by compliance entities between compliance year 2016 and 2018. Allowances are bankable for institutional investors without such an annual maximum limit.

According to the Action Plan for Deepening Reform of the ETS from 2026 to 2030, covered entities to be transferred to the National Carbon Market will have one-third of their remaining allowances in the Shanghai ETS released each year over a three-year period.

Borrowing is not allowed.

OFFSET CREDITS

The use of offset credits – CCERs and provincial offsets SHCERs – is allowed.

In 2023, Shanghai launched the provincial offset SHCER. There are two types of approved methodologies for SHCER. Type 1 is smaller-scale reduction projects, such as distributed photovoltaic power generation and public transportation. Type 2 is aimed at individual citizens using electric vehicles. Only the offset credits from Type 1 (SHCERCIR1) are eligible for compliance purposes under Shanghai ETS.

QUANTITATIVE LIMITS:

Phase 1: The use of CCER credits was limited to 5% of verified emissions.

Phase 2: From compliance years 2016 to 2018, the use of CCERs was limited to 1% of the annual allocation. For the compliance years 2019 and 2020, the use of CCERs was limited to 3% of verified emissions. In compliance year 2019, only 2% was allowed for offset credits generated outside the Yangtze River Delta region,[6] and 1% must have stemmed from within the region.

This limitation was raised to 5% in compliance year 2022 for both CCERs and SHCERs.

QUALITATIVE LIMITS:

Phase 1: Offset credits for reductions before January 2013 could not be used for compliance.

Phase 2: Same restriction as in Phase 1. Credits from hydro projects are not allowed.

Since compliance year 2024, only CCERs issued in the relaunched CCER system are eligible for compliance purposes.

In compliance year 2024, 15,690 tCO_2e of SHCERs were surrendered for compliance purposes.

LINKS WITH OTHER SYSTEMS

Although the SEEE operates the trading systems for both the National Carbon Market and the Shanghai regional pilot, the two markets are separate. The Shanghai ETS is not linked with any other system.

OTHER CARBON PRICING INSTRUMENTS IN THE JURISDICTION

ETS: China's National Carbon Market
Domestic offsetting mechanisms: Shanghai Carbon Emission Reduction (SHCER)
Domestic crediting mechanisms (national): China Certified Emissions Reduction (CCER)

COMPLIANCE

COMPLIANCE MECHANISM

Covered entities must surrender one compliance unit (Shanghai Emission Allowances (SHEA), SHCERCIR1, CCER) per tCO_2e emitted for all their covered emissions.

COMPLIANCE PERIOD

One calendar year. Covered entities must surrender allowances by June of the following year.

MRV

FRAMEWORK: The Shanghai government released "Guidelines for Greenhouse Gas Emission Accounting and Reporting in Shanghai (Trial)" for monitoring and reporting, as well as sector-specific guidelines for the following sectors: iron and steel, power and heat, chemicals, nonferrous metals, non-metallic mineral products, textiles, paper, aviation, shipping, large buildings (e.g., hotels, commercial and financial institutes), and transport (e.g., ports).

MONITORING: Covered entities are required to set up monitor plans for the next year by the end of December and follow them.

6 The region covers Shanghai, Jiangsu, Zhejiang, and Anhui.

REPORTING: Annual. Covered entities must submit their emission reports to the Shanghai EEB before the end of March of the year following the compliance year. Road transport companies with either emissions of at least 10,000 tCO_2 per year or energy consumption of 5,000 tce per year, and hazardous waste management companies with either emissions of at least 20,000 tCO_2 per year or energy consumption of 10,000 tce per year, are also required to report their emissions with no compliance obligation.

VERIFICATION: Third-party verification is required. The Shanghai EEB commissions an independent third party to carry out verification. In addition, "fourth-party verification" is carried out by government-assigned experts. The government also assesses verifiers' performance through a performance evaluation mechanism.

PENALTIES AND ENFORCEMENT

COVERED ENTITIES: Penalties for failing to prepare an emissions data quality control plan as required, or failure to submit the annual emissions report in accordance with the requirements, or failure to properly retain the original records and management ledgers of the annual emissions report, shall be between CNY 50,000 (USD 6,954) and CNY 300,000 (USD 41,726).

Where an entity prepares an annual GHG emissions report with major defects or omissions, or engages in intentional concealment, falsification of data or information, use of false data or information, or other fraudulent acts, it shall be fined between CNY 100,000 (USD 13,909) and CNY 300,000 (USD 41,726). Those persons directly responsible shall be fined between CNY 50,000 (USD 6,954) and CNY 100,000 (USD 13,909).

Where an entity fails to fulfill its obligation to surrender carbon emission allowances as required, in addition to being ordered to make up the shortfall in allowances, it shall be fined between CNY 200,000 (USD 27,817) and CNY 300,000 (USD 41,726).

VERIFIERS AND CONSULTANTS: Where a technical service institution issues a technical report with major defects or omissions, or engages in intentional concealment, falsification of data, or other fraudulent acts during the preparation or technical review process, the institution shall be fined between CNY 200,000 (USD 27,817) and CNY 300,000 (USD 41,726). The persons directly responsible shall be fined between CNY 20,000 (USD 2,782) and CNY 200,000 (USD 27,817).

MARKET REGULATION

MARKET DESIGN

MARKET PARTICIPATION: Compliance entities; non-compliance entities (domestic institutional investors that meet the requirement of the carbon emission trading rules set up by the SEEE).

MARKET TYPES:

Primary: No set percentage of allowances are allocated via auctioning, though the Shanghai ETS regulations state that auctioning is to be introduced gradually. Ad hoc sales have been held since 2014 to provide compliance entities with additional supply. In addition, further auctions have also been held since 2020 where institutional investors have also been allowed to participate.

Secondary: Products include Shanghai Emission Allowances (SHEA), Shanghai Certified Emission Reduction (SHCERCIR1 & SHCERCIR2), Shanghai Emission Allowance Forwards, and CCERs. SHEAs and CCERs are spot products. Shanghai Emission Allowance Forward (SHEAF) is the standardized spot forward product.

LEGAL STATUS OF ALLOWANCES: The status of allowances as financial instruments is under consideration.

MARKET STABILITY PROVISIONS

RESERVE

Instrument type: N/A

Functioning: A small share of the annual cap can be kept in a reserve for auctioning before the end of the annual compliance cycle as a market stability measure (see 'Allowance Allocation' section). The Shanghai EEB can organize irregular auctions according to market demand, no fixed triggers are envisaged.

EXCHANGE

Instrument type: Price-based instrument

Functioning: The SEEE implements a system of limits on price increases and decreases for trading over the exchange. For listed trading (trading volume less than 100,000 tCO_2), this is 10% above or below the reference price (the weighted average price of all transactions on the previous trading day). For block trading (with a minimum trading volume of 100,000 tCO_2), this is 30% above or below the reference price. Only transactions within this price range can be successfully completed on the exchange.

For block trading of allowances with a single buy or sell order of 500,000 tCO_2 or more, the transaction price may be determined through negotiation between the trading parties.

OTHER INFORMATION

INSTITUTIONS INVOLVED

Shanghai Ecology and Environment Bureau (EEB): Acts as the competent authority setting the rules and overseeing the system.
Shanghai Environment and Energy Exchange: Responsible for operating the trading platform.
Shanghai Economic Information Center: Responsible for overseeing and operating the registry.

EVALUATION/ETS REVIEW

Shanghai EEB has published annual ETS summary reports since 2024. According to the 2024 summary report, the absolute CO_2 emissions from covered entities in industrial sectors dropped by 14.7% compared to 2016 levels. The absolute CO_2 emissions from covered entities in the public building sector dropped by 12.8% compared to 2016 level. This same trend was also noted in the 2025 summary report.
Research on ETS improvements, funded by the local government, is undertaken every year.

REGULATORY FRAMEWORK

→ **Shanghai Carbon Emissions Management Measures (2025)**
→ **Action Plan for Deepening Reform of the ETS from 2026 to 2030 (2025)**
→ **Shanghai Carbon Inclusive Management Measures (2025)**
→ **Shanghai EEB - Allocation Plan for Compliance Year 2024 (including list of covered entities)**
→ **Shanghai EEB - Allocation Plan for Compliance Year 2025 (including list of covered entities)**
→ **Shanghai ETS summary report 2025**

SHENZHEN

SHENZHEN PILOT EMISSIONS TRADING SYSTEM

- One of three Chinese pilots with ETS bill passed by municipal people's congress
- Active trading market with diverse participants, including foreign investors
- Pioneered sectoral expansion and cross-regional trading

ETS DESCRIPTION

The Shenzhen Pilot ETS began in June 2013 and was the first of the Chinese pilots to start. As a city within Guangdong province with its own separate ETS, Shenzhen is the only Chinese pilot operating at the sub-provincial level. Covered entities must surrender allowances for all their covered emissions, and allocation is based predominantly on free allocation.

The Shenzhen ETS covers emissions from nearly 700 entities in the industry, buildings, waste and transport sectors. Except for two auctions held in 2014 and 2022, allowances have been allocated freely using both benchmarking and grandparenting. In addition to the national offset program, Chinese Certified Emission Reduction (CCER), the Shenzhen ETS also accepts credits from local offset programs, including the carbon inclusive system.

Shenzhen's market has the highest liquidity in China, despite its relatively small size. In contrast to most pilot systems in China, which are regulated by sub-national government orders from the executive body of the government, Shenzhen's is regulated by a dedicated ETS bill passed by its municipal legislator, the Shenzhen People's Congress. According to the "Implementation Plan of Shenzhen Emissions Trading to Support Peaking Carbon Emissions and Achieving Carbon Neutrality", the Shenzhen ETS will apply an absolute cap from 2027.

The Shenzhen ETS currently operates in parallel with China's National Carbon Market. As the National Carbon Market expands, covered entities in these sectors are being integrated into the national system.

YEAR IN REVIEW

In January 2025, the Shenzhen Environment and Ecology Bureau (EEB) announced that all covered entities had surrendered their compliance units for compliance year 2023.

In March, the EEB updated its covered entity list for compliance year 2024, By the end of December, removing 83 entities and adding 44 new entrants. The Shenzhen ETS now covers 672 entities.

From May to October, the Shenzhen EEB published four trial methodologies for Tan Pu Hui local offset credits in Shenzhen (STTCERs), covering distributed photovoltaic, paperless finance, second-hand electronic products and carpooling. These initiatives aim to promote low-carbon production and lifestyles, and to further develop the Shenzhen Carbon Inclusive system.

The 2024 allocation plan was published in August 2024, while the plan for 2025 has not yet been released. Since the newly integrated sectors into the National Carbon Market, namely cement, steel and aluminum smelting sectors, are not prominent in Shenzhen, the changes induced in the Shenzhen ETS are less significant than other pilots.

In force
Under development
Under consideration

SECTORS

- INDUSTRY
- BUILDINGS
- TRANSPORT
- WASTE

CAP OR TOTAL EMISSIONS LIMIT

Intensity-based emissions limit
33.5 $MtCO_2$ (2024)

GREENHOUSE GASES

CO_2

OFFSET CREDITS

Domestic (national and provincial), with quantitative limits

ALLOCATION

Free Allocation: Grandparenting
Free Allocation: Output-based Benchmarking

AVERAGE 2025 PRICES

Average secondary market price: CNY 44.98 (USD 6.26)

TOTAL REVENUE

~CNY 27.9 million (USD 3.88 million) since the beginning of the program

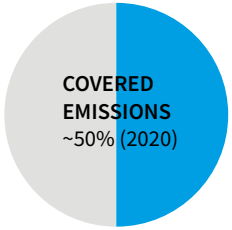
EMISSIONS & TARGETS OF SHENZHEN

OVERALL GHG EMISSIONS (including indirect CO_2, excluding LULUCF), **2020**
45.42 $MtCO_2e$[1]

GHG REDUCTION TARGETS
By 2030: Peak carbon emissions ("Outline of the 14th Five-Year Plan and 2035 Vision")
By 2035: Decouple GHG emissions from economic and social development (Shenzhen's "14th Five-Year Plan for Climate Change")

ETS COVERAGE & PHASES

COVERED EMISSIONS 2020
~50%[2]



PHASES
Ongoing

CAP OR TOTAL EMISSIONS LIMIT
The total emission limit under the Shenzhen ETS changes as a function of production (output) and is the sum of the bottom-up output-based/installation-level emissions limits for all individual covered entities. The bottom-up emissions limits do not represent an absolute cap.

2015 to 2019: ~31$MtCO_2$ (excluding buildings)
2020: 22 $MtCO_2$
2021: 25 $MtCO_2$
2022: 26 $MtCO_2$
2023: 28 $MtCO_2$
2024: 33.5 $MtCO_2$

In addition, the government sets aside reserves for new entrants (2%) and market stability measures (2%).

SECTORS AND THRESHOLDS
Water, gas, heat, manufacturing, electronic equipment, waste management, ports, subways, public buses, and other non-transport sectors. Electricity production was covered until 2019, after which it transitioned to the National Carbon Market.

Data centers, solid waste, accommodation and catering, wholesale and retail, warehousing and postal services, software and information services, and government agencies and public institutions are newly covered in 2024.

INCLUSION THRESHOLDS: Annual emissions in excess of 3,000 tCO_2 for enterprises; entities confirmed by local EEB.

POINT OF REGULATION
Point source (industry); downstream (indirect emissions from electricity and heat consumption).

TYPE OF ENTITIES
Companies

NUMBER OF ENTITIES
672 entities (2024)

ALLOWANCE ALLOCATION & REVENUE

ALLOWANCE ALLOCATION
Allowances are largely distributed for free, and allocation is adjusted ex-post based on output data. The allocation plan is updated every year. For the compliance year 2024:

FREE ALLOCATION:
Benchmarking: Applied to the water, power grid, gas, and data centre sectors, based on sectoral historical emissions intensity.

Grandparenting: Applied to waste management facilities, ports, subways, public buses, and some specific chemical production based on a product-based historical emissions intensity method. A GDP-based historical emissions intensity method is applied to manufacturers. For public buildings such as accommodation and catering, wholesale and retail, warehousing and postal services, software and information services, government agencies and public institutions, and universities, grandparenting based on historical emissions is applied.

Ex-post allocation adjustments, e.g., based on production data, are applied for those with historical intensity or benchmarking allocations. For the compliance year 2024, Shenzhen EEB calculated the allowances based on the expected output in 2024. 70% of the expected amount was allocated for free as pre-allocated allowance. Before the compliance deadline in 2025, the competent authority will supplement or deduct the allowance based on the verified output in 2024.

1 No data is publicly available for recent years; the data here is estimated by local experts.
2 No data is publicly available for recent years; the data here is estimated by local experts.

AUCTIONING: The 2022 "Provisional Regulation of the Shenzhen Emission Trading Pilot Scheme" states that allowances can be sold at auction or at a fixed price. At least 3% of allowances should be auctioned. So far, two auctions have been held, in June 2014 and August 2022.

USE OF REVENUES


Climate mitigation


General budget, including debt reduction

According to the 2014 Shenzhen ETS regulation, auctioning revenues are attributed to the city treasury.[3] However, the 2022 revision states that the city will enhance the transparency of revenue use and establish a new Carbon Emissions Trading Fund to support the ETS and other GHG reduction programs.

FLEXIBILITY & LINKING

BANKING AND BORROWING

Banking is allowed.
Borrowing is not allowed.

OFFSET CREDITS

The use of offset credits is allowed.

QUANTITATIVE LIMIT: The use of offset credits is limited to 20% of the shortfall in compliance obligation.

QUALITATIVE LIMIT: Domestic project-based carbon offset credits (CCERs), Tan Pu Hui local offset credits, and other offset credits authorized by the local government are allowed. Credits from hydropower projects are not eligible, and additional geographical restrictions apply to the use of certain CCERs and local offset programs.

Starting from 2024, green power purchased and consumed through the electricity market can also be used to offset emissions, with a limit on its use equal to the size of the shortage.

LINKS WITH OTHER SYSTEMS

The Shenzhen Pilot ETS is not linked with any other system. The Guangdong-Hong Kong-Macao Greater Bay Area (to which Shenzhen belongs) plans to explore the feasibility of a joint or linked carbon market. According to Shenzhen's local green finance legislation, financial institutions will in the future be encouraged to participate in cross-border trading in this market.

OTHER CARBON PRICING INSTRUMENTS IN THE JURISDICTION

ETS: China's National Carbon Market
Domestic crediting mechanisms: Tan Pu Hui local offset credits in Shenzhen (STTCER)
Domestic crediting mechanisms (national): China Certified Emissions Reduction (CCER)

COMPLIANCE

COMPLIANCE MECHANISM

Covered entities must surrender one compliance unit (allowance or offset credit) per tCO_2e emitted for all their covered emissions by the end of August of the year following the compliance year.

COMPLIANCE PERIOD

One calendar year. Covered entities have until the end of August of the following year to surrender allowances.

MRV

FRAMEWORK: Shenzhen has released two documents setting the basis for MRV:
- a general guiding document in the form of regional standards on monitoring and reporting; and
- a guiding document on monitoring and reporting for the buildings sector.

MONITORING: Covered entities are required to set up and follow emissions monitoring plans.

REPORTING FREQUENCY: Annual reporting of CO_2 emissions to the ETS competent authority by the end of March of the following year, using tiered emissions factors depending on different emission sources. Covered industrial entities must also annually submit a statistical indicator report covering their production data to the municipality's statistics department by the end of March of the following year.

VERIFICATION: Third-party verification of the annual emissions report is required. The competent authority may assign this to a specialized agency.

3 The 2014 Shenzhen ETS regulation stipulated that the city government would set up a market stability fund, dedicated to market stabilization measures, supporting companies' mitigation activities, the promotion of market service institutions, capacity building, and ETS management, funded by auction revenues, donations and other channels.

PENALTIES AND ENFORCEMENT

REGULATED ENTITIES: Penalties for failing to submit an emissions or verification report on time or for providing fraudulent information range from CNY 10,000 (USD 1,391) to CNY 50,000 (USD 6,954).

Covered entities providing false information can be fined CNY 50,000 (USD 6,954) to CNY 100,000 (USD 13,909).

Penalties for disturbing the market order can rise to CNY 100,000 (USD 13,909). Covered entities failing to surrender sufficient allowances to match their emissions are fined three times the average market price of the preceding six months. The missing allowances can be withdrawn from the company's account or deducted from next year's allocation.

Other non-financial penalties include public reporting, reporting relevant credit information of public banks, disqualification from financial subsidies (for five years), and a record entered in the State-Owned Enterprise Performance Assessment System.

THIRD-PARTY VERIFIERS: Third-party verification agencies may be penalized with a fine of CNY 50,000 (USD 6,954) to CNY 100,000 (USD 13,894) for falsifying verification reports.

Third-party verifiers (experts) shall be penalized with a fine of between CNY 10,000 (USD 1,391) to CNY 50,000 (USD 6,954) for issuing false verification reports, material errors in verification reports, and for unauthorized use or publication of confidential corporate or emissions information.

MARKET REGULATION

MARKET DESIGN

MARKET PARTICIPATION: Compliance entities; non-compliance entities (institutional investors); individuals (both domestic and international), subject to meeting the requirements of the carbon emission trading rules set by the China Emissions Exchange (Shenzhen).

MARKET TYPES:

Primary: Shenzhen so far has very limited experience with auctioning: two auctions have been held, in 2014 and 2022. Only compliance entities and member institutions authorized by the China Emissions Exchange (Shenzhen) may participate.

Secondary: CCERs, Shenzhen Allowances (SZAs), and local Tan Pu Hui offset credits are the main spot trading products in the secondary market. The China Emissions Exchange (Shenzhen) is the trading platform for all products.

Due to financial market regulations in China, no forward markets or derivatives are allowed.

LEGAL STATUS OF ALLOWANCES: Allowances are not considered financial instruments.

MARKET STABILITY PROVISIONS

INTERVENTION

Instrument type: Price-based instrument

Functioning: In case of significant price rise or low liquidity, the Shenzhen EEB can auction extra allowances from the reserve at a fixed price; 2% of the total cap is kept as a government reserve for market stabilization.

Such allowances can be used only for compliance and cannot be traded. The situation of a significant price rise in allowance prices refers to when the closing price of allowances on a given day exceeds the highest daily closing price in the national or pilot carbon market over the preceding 12 months. Additionally, this situation occurs when the average allowance price over six months reaches or exceeds three times the average allowance price over the past 24 months, or when the average allowance price over a week reaches or exceeds three times the lowest weekly average price over the preceding 24 weeks.

The situation of excessively low quantities of allowances in circulation occurs when, following the completion of the previous year's compliance work, there are fewer allowances in circulation than 20% of the total annual quantity of allowances for the current year.

EXCHANGE

Instrument type: Price-based instrument

Functioning: The China Emissions Exchange (Shenzhen) implements a system of limits on price increases and decreases for trading over the exchange. For listed trading (with maximum trading volume of 30,000 tCO_2), this is 10% above or below the reference price (the weighted average price of all transactions on the previous trading day). For block trading (with minimum trading volume of 10,000 tCO_2), this is 30% above or below the reference price. Only transactions within this price range can be successfully completed on the exchange.

OTHER INFORMATION

INSTITUTIONS INVOLVED

Ecology Environment Bureau of Shenzhen Municipality (EEB): Responsible for ETS affairs, including the registry and MRV.

China Emissions Exchange (Shenzhen): Responsible for operating the trading platform.

EVALUATION/ETS REVIEW

No formal evaluation has been conducted. Research on improving the Shenzhen ETS is undertaken every year, funded by the municipal government.

REGULATORY FRAMEWORK

- → Carbon Emissions Management Regulations of Shenzhen Special Economic Zone (the local ETS bill) (2012)
- → Measures for Management of Emissions Trading in Shenzhen (2024)
- → Implementation Plan of Shenzhen Emissions Trading to Support Peaking Carbon Emissions and Achieving Carbon Neutrality
- → Shenzhen EEB—Regulations on Tan Pu Hui Management
- → Shenzhen EEB—Allocation Plan for Vintage 2024
- → Shenzhen EEB – list of covered entities 2024

TAIWAN, CHINA

- "Climate Change Response Act" authorizes carbon fee and ETS
- Mandatory GHG reporting program and domestic offset program in place
- Covered entities to start paying a carbon fee in 2026, based on 2025 emissions

In force

Under development

Under consideration

ETS DESCRIPTION

Taiwan, China, enacted the "Climate Change Response Act" (the Act) in 2023, which legislates reaching an economy-wide net-zero GHG emissions target by 2050. The Act amends the 2015 "GHG Reduction and Management Act", which stipulates that the Ministry of Environment (MOENV) – in consultation with other relevant central competent authorities – will lead on climate policy design and implementation, including the carbon fee and ETS.

Mandatory emissions reporting for entities with annual emissions above 25,000 tCO_2e from certain sectors has been in place since 2014. Entities in the energy and industry sectors with annual direct and indirect GHG emissions of more than 25,000 tCO_2e have MRV responsibilities.

In August 2024, MOENV published three carbon fee regulations. The fee of TWD 300 (USD 9.62) per tCO_2e is levied on power and manufacturing industries that emit more than 25,000 tCO_2e per year. Covered entities subject to the carbon fee are required to calculate and pay their carbon fees based on their total 2025 GHG emissions by May 2026. Preferential fees of TWD 100 and 50 (USD 3 and USD 1.60) are available for covered entities upon meeting certain criteria, including application for self-determined emission reduction plans.

In October 2024, the Minister of Environment announced that Taiwan will transition from the carbon fee to an ETS within four years. In January 2025, the Vice Premier further declared that the government is aiming to accelerate the transition to an ETS, which could be piloted in the second half of 2026. The ETS is expected to be fully implemented in 2027 or 2028, operating in parallel with the carbon fee scheme.

Alongside the carbon fee and the planned transition to an ETS, MOENV is conducting public and industry consultations on a Taiwanese Carbon Border Adjustment Mechanism (CBAM). Relevant regulations are expected to be finished and piloted in the first half of 2026, with trial phase reports on the carbon content of regulated products for 2026 to be submitted in the first quarter of 2027. The first phase of the planned CBAM will cover cement and steel products. The government will continue to engage with the cement and steel sectors to improve the trial system design and align reporting rules with other similar systems.

EMISSIONS & TARGETS OF TAIWAN, CHINA

OVERALL GHG EMISSIONS (including indirect CO_2, excluding LULUCF), 2023

(in $MtCO_2e$, share of total in %)

Energy	252.7	90.7%
Industrial processes	20.0	7.2%
Agriculture	3.3	1.2%
Waste	2.5	0.9%
Total	**278.6**	

Energy industries	177.5	64%
Manufacturing industries and construction	29.9	11%
Transport	35.4	13%
Commercial, institutional, and residential	8.1	3%
Other energy	1.9	1%

GHG REDUCTION TARGETS

By 2025: 10% below 2005 GHG levels ("Executive Yuan")
By 2030: 28% ±2% reduction in GHGs from 2005 levels (NDC 3.0)
By 2032: 32% ±2% reduction in GHGs from 2005 levels (NDC 3.0)
By 2035: 38% ±2% reduction in GHGs from 2005 levels (NDC 3.0)
By 2050: Net-zero emissions (Climate Change Response Act)

FLEXIBILITY & LINKING

OFFSET CREDITS

The Climate Change Response Act stipulates that early domestic action and offset credits, such as from conversion of low-carbon fuels, energy efficiency improvement and carbon sink projects, will be allowed to meet carbon fee and ETS obligations. The MOENV, in consultation with relevant central competent authorities, will also recognize international offset credits with the standards to be decided later.

OTHER CARBON PRICING INSTRUMENTS IN THE JURISDICTION

Carbon tax: Taiwan Carbon Fees
Domestic crediting mechanisms: Voluntary Emissions Reduction Mechanism

OTHER INFORMATION

INSTITUTIONS INVOLVED

Ministry of Environment (MOENV): Responsible for establishing regulations for the carbon fee, ETS, and CBAM.
Ministry of Economic Affairs: Central authority to be consulted by TEPA for regulations on ETS, in particular for allocation, leakage and international credits.
Financial Supervisory Commission: Responsible for setting up a carbon exchange, and to be consulted by TEPA for regulations on trading of credits.
Taiwan Carbon Solution Exchange: Responsible for domestic and international carbon credit trading.

REGULATORY FRAMEWORK

- → Climate Change Response Act (2023)
- → Regulations Governing GHG Certification and Verification Institutions (2023)
- → Measures on GHG voluntary emission reduction project management (2023)
- → Measures on GHG emission increase offset management (2023)
- → Regulations Governing the Collection of Carbon Fees (2024)
- → Designated Greenhouse Gas Reduction Goals for Entities Subject to Carbon Fees (2024)
- → Regulations for Administration of Self-Determined Reduction Plans (2024)

THAILAND

- Legislative process for “Climate Change Act” adoption began in 2025, enforcement expected in 2027
- Draft Act includes ETS, carbon tax, carbon border adjustment mechanism, carbon credits, and climate fund
- Allocation plans to be updated every three to five years with progressive reductions

DESCRIPTION

Thailand has been considering economic instruments to incentivize GHG emissions reductions for several years. The 2018 National Reform Plan under the National Strategy 2018 to 2037 mandated the Thai government to begin developing and implementing such instruments, laying the groundwork for the country’s first Climate Change Act.

In December 2025, the Cabinet approved the Draft Climate Change Act. Following Cabinet approval, the bill has been forwarded to the Office of the Council of State for legal review before being submitted to Parliament for consideration and enactment, with enforcement anticipated in 2027. The approved Draft Act establishes four carbon pricing instruments: an ETS, a carbon tax, a carbon border adjustment mechanism on imported products (modeled on the EU’s CBAM), and a regulated market for carbon credits. It also establishes a Climate Fund to be financed through revenues from the ETS and CBAM, among other sources.

Under the approved Draft Act, the National Committee on Climate Change (NCCC) will develop the “Climate Change Master Plan”, serving as the national framework for climate change mitigation and adaptation. The Draft Act also gives primary supervisory authority to the Department of Climate Change and Environment (DCCE). The DCCE is charged with developing up to 50 subsidiary laws to implement the Climate Change Act, including detailed regulations for the ETS, carbon credit markets, and the MRV system.

The Draft Act establishes annual MRV obligations for covered entities. The DCCE will manage the MRV system, which will include an electronic platform to standardize reporting criteria and methodologies. This system will underpin the four carbon pricing instruments outlined in the Draft Act.

DCCE will establish industry-specific GHG ceilings and reduction targets aligned with Thailand’s newly updated NDC 3.0. The proposed ETS will function within this ceiling framework, managed by the DCCE under the NCCC. According to the Draft Act, covered entities must surrender sufficient allowances annually to meet their compliance obligations under the cap. It is expected that the specific sectors to be covered by the ETS will be identified in subsidiary law following a data collection period planned for 2027 and 2028, with a pilot ETS potentially launching in 2029.

The DCCE will develop and update allocation plans every three to five years, incorporating a mechanism for the progressive reduction of allowances in the system. The allocation plans will define the following for each allocation period:

- the scope of covered activities and gases;
- annual caps;
- the maximum number of carbon credits allowed for compliance; and
- allocation methods, including the share of allowances to be auctioned for each sector.

The NCCC will revise and approve allocation plans and also issue regulations governing the ETS, including:

- rules for holding and trading allowances;
- limits on banked allowances; and
- eligibility criteria for carbon credits used for compliance.

The DCCE will establish a registry to track covered entities and allowances. It will also authorize an operator to set up an allowance trading center.

In January 2025, Thailand's Securities and Exchange Commission announced plans for a new carbon credit trading platform operated by the Stock Exchange of Thailand (SET). In February 2025, SET signed a MoU with the Intercontinental Exchange (ICE) to leverage financial technology and market expertise.

Thailand is considering allowing covered entities to meet up to 15% of their ETS compliance obligations with carbon credits from projects certified by the Thailand Greenhouse Gas Management Organization (TGO) or other independent standards. Offset eligibility rules will be detailed in the relevant regulations and announced by NCCC together with the allocation plan.

Thailand's ongoing carbon market development builds on more than a decade of work. In 2013, TGO initiated the Thailand Voluntary Emissions Trading Scheme (Thailand V-ETS) to test MRV systems, cap-setting, allocation procedures, and trading infrastructure. Since 2021, TGO has collaborated with the Eastern Economic Corridor Office to pilot an ETS in the region, focusing on stakeholder engagement, capacity building, and technical support for T-VER project development.

EMISSIONS & TARGETS OF THAILAND

OVERALL GHG EMISSIONS (including indirect CO_2, excluding LULUCF), 2022

(in $MtCO_2e$, share of total in %)

Energy	254.3	66%
Industrial processes	40.5	11%
Agriculture	68.9	18%
Waste	20.5	5%
Total	**384.3**	

Energy industries	92.2	24%
Manufacturing industries and construction	62.6	16%
Transport	77.0	20%
Commercial, institutional, and residential	7.7	2%
Other energy	14.7	4%

GHG REDUCTION TARGETS

By 2030: Unconditional 30% reduction compared to BAU; 40% reduction compared to BAU conditional on adequate and enhanced support (NDC 2.0)
By 2035: 47% reduction in net GHG emissions compared to 2019 baseline level (NDC 3.0)
By 2050: Net-zero GHG emissions (NDC 3.0)

OTHER INFORMATION

INSTITUTIONS INVOLVED

Thailand Greenhouse Gas Management Organization (Public Organization) (TGO): Autonomous public agency responsible for developing, implementing, and managing Thailand's climate change mitigation programs and projects.

Department of Climate Change and Environment (DCCE): Central government agency in charge of supervising Thailand's missions and operations related to climate change, while also coordinating with public and private agencies on climate change issues.

National Committee on Climate Change Policy (NCCC): Interministerial committee, chaired by the Prime Minister, will take charge of national mitigation and adaptation policy.

REGULATORY FRAMEWORK

→ **Thailand's Long-Term Low Greenhouse Gas Emission Development Strategy (November 2022)**
→ **Draft Climate Change Act (March 2024)**
→ **Report on public hearing of the draft Climate Change Act (May 2024)**

TIANJIN

TIANJIN PILOT EMISSIONS TRADING SYSTEM

- Operates in parallel with the China National Carbon Market
- Further sectoral expansion to domestic aviation and data centers is under consultation

ETS DESCRIPTION

Tianjin launched its pilot ETS in December 2013. The Tianjin Pilot ETS covers emissions from 254 entities in steel, petrochemicals, chemicals, oil and gas exploration, papermaking, airport, building materials, food and beverages, non-ferrous metals, machinery and equipment manufacturing, mining, agricultural and food processing, pharmaceutical manufacturing, and electronic equipment manufacturing sectors. Covered entities must surrender allowances for all their covered emissions, which is based on either their historical emissions or historical emissions intensity.

Allowances are primarily allocated through grandparenting, based on either base year total emissions or emissions intensity. Auctions are also held, with the main purpose of providing covered entities with additional supply to meet their compliance demand. Between 2019 and 2021, Tianjin held five auctions.

Several measures were introduced in 2020 to strengthen compliance: companies that fail to surrender enough allowances will have double the amount of the shortfall deducted from the next year's allocation, and third-party verifiers found to not comply with regulations will be banned for three years.

The Tianjin ETS operates in parallel with the China National Carbon Market. As the National Carbon Market expands to new sectors, covered entities in these sectors are being integrated into the national system.

YEAR IN REVIEW

In February 2025, the Tianjin Ecology and Environment Bureau (EEB) published the "Work Plan for Expanding the Scope of the Coverage of the Tianjin Carbon Emissions Trading Market" after a public consultation in August 2024. It expanded the coverage to ports and maritime transport (See 'Sectors and Thresholds' section).

In June, the Tianjin Municipal People's Government updated the Interim Measure for Management of Emissions Trading in Tianjin to align with the National Carbon Market, and improve MRV and market oversight regulations.

In October, the Tianjin Pilot ETS completed the compliance process for compliance year 2024, with a reported 100% compliance rate.

The Tianjin EEB, the Tianjin Development and Reform Commission, and Tianjin Branch of the People's Bank of China jointly issued the "Action Plan for Deepening Reform of the Tianjin ETS" in October 2025. This plan sets out the development direction for the Tianjin ETS by 2030, with key priorities including:

1 The China National Carbon Market started to cover steel, cement, and aluminum smelters from 2024. Tianjin doesn't have aluminum smelter companies, but the covered entities in steel and cement were integrated into the National Carbon Market. Other industrial sectors remain in Tianjin ETS.
2 The Tianjin ETS covers direct and indirect emissions from public buildings, airports, and ports.
3 Tianjin ETS applied output-based historical intensity allocation methods and grandparenting method based on historical emissions for different sectors.

In force
Under development
Under consideration

SECTORS

- MINING AND EXTRACTIVES
- INDUSTRY[1]
- BUILDINGS[2]
- MARITIME

CAP OR TOTAL EMISSIONS LIMIT

Intensity-based emissions limit[3]
40 $MtCO_2$ (2025)

GREENHOUSE GASES

CO_2

OFFSET CREDITS

Domestic (national and provincial), with quantitative limits

ALLOCATION

Free Allocation: Grandparenting
Free Allocation: Output-based Benchmarking
Auctioning

AVERAGE 2025 PRICES

Average secondary market price: CNY 34.15 (USD 4.75)

TOTAL REVENUE

CNY 148.18 million (USD 20.6 million) since the beginning of the program in 2013

1. lowering inclusion thresholds, expanding the sectors covered and other non-CO_2 GHGs;
2. developing benchmarks allocation method, introducing incentives for the covered entities which successfully reduce air pollution or increased energy efficiency;
3. increasing the proportion of allowances allocated via auction; and
4. cancelling the free allowances from the covered entities transferred to the National Carbon Market.

Over the next five years, the Tianjin EEB and other relevant departments will refine the design of the Tianjin ETS in accordance with this plan.

In December, the Tianjin EEB published the 2025 allocation plan, confirming the coverage of maritime transport and ports, with 40 million tonnes of total emissions allowances.

EMISSIONS & TARGETS OF TIANJIN

OVERALL GHG EMISSIONS (including indirect CO_2, excluding LULUCF), 2022

152.7 $MtCO_2$[4]

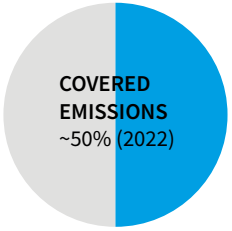
GHG REDUCTION TARGETS

By 2030: Reduction of carbon intensity by 65% compared to 2005; peak carbon emissions ("Tianjin Carbon Peak Implementation Plan")

ETS COVERAGE & PHASES

COVERED EMISSIONS 2022

~50%



PHASES

Ongoing (2014 to present)

CAP OR TOTAL EMISSIONS LIMIT

The total emission limit under the Tianjin ETS changes as a function of production (output) and is the sum of the bottom-up output-based/installation-level emissions limits for all individual covered entities. The bottom-up emissions limits do not represent an absolute cap.
For recent years, the cap was as follows:
2021: 75 $MtCO_2$
2022: 75 $MtCO_2$
2023: 74 $MtCO_2$
2025: 40 $MtCO_2$

SECTORS AND THRESHOLDS

Iron and steel, petrochemicals, chemicals, oil and gas exploration, public building (airport), building materials, non-ferrous metals, medical and pharmaceutical manufacturing, machinery and equipment manufacturing, agri-food processing, food and beverage, salt-mining, rubber and plastic products.

In 2021, Tianjin expanded its ETS to entities above the inclusion threshold from all industrial sectors (without pre-selection of specific sectors).

Electricity production was covered until 2019, after which it was integrated into the National Carbon Market. The steel and cement sectors have been covered by the National Carbon Market since 2024.

Starting from compliance year 2025, the Tianjin ETS will cover ports and maritime transport.

INCLUSION THRESHOLDS: From 2013 to 2024, 20,000 tCO_2/year, considering both direct and indirect emissions.

Starting from the 2025 compliance year, the threshold for all sectors was lowered to 10,000 tCO_2/year.

POINT OF REGULATION

Point source (industry, maritime); downstream (indirect emissions from electricity and heat consumption).

TYPE OF ENTITIES

Companies

NUMBER OF ENTITIES

254 entities (2025)

ALLOWANCE ALLOCATION & REVENUE

ALLOWANCE ALLOCATION

Allowances are distributed for free, using benchmarking or grandparenting. The allocation plan is updated every year. For the compliance year 2025:

FREE ALLOCATION:
Grandparenting: Grandparenting method based on historical emissions intensity is used in the building materials, paper, and paper products sectors. It also applies to covered entities in the following sectors, provided that they have no more than three main products and have well-established metering and statistical conditions, and have been verified and approved to adopt

4 There is no publicly available data, the data reported here is estimated by local experts.

this method: machinery and equipment manufacturing, agricultural and food processing, electronic equipment manufacturing, food and beverage, mining, rubber and plastic products, tobacco manufacturing, ports, waterway freight transport, and air freight transport.

The 2025 allowance for covered entities in those sectors equals:
2025 production output × 2024 emission intensity × reduction factor

Allowances are allocated based on historical emissions for chemical and petrochemical industries, oil and gas extraction, aviation (airports), non-ferrous metals, iron and steel, machinery and equipment manufacturing, agricultural and sideline food processing, electronic equipment manufacturing, food and beverage, pharmaceutical manufacturing, mining, rubber and plastic products, tobacco manufacturing, furniture manufacturing, textile, printing, ports, waterway freight transport, and air freight transport. For 2025, allocation was determined using emissions from 2024 as a base year.

From the 2025 compliance year, an emission reduction factor for chemicals, non-ferrous metals, and the medical and pharmaceutical manufacturing sectors was set at 0.94. The remaining sectors[5] have an emission reduction factor of 0.96 instead.

Ex-post allocation adjustments, e.g., based on production data, are applied for those with historical intensity or benchmarking allocations. For the compliance year 2025, those covered entities received pre-allocated allowances equal to 70% of their 2024 emissions. Ahead of the compliance deadline in 2025, the competent authority adjusted the allowance based on the verified output in 2024.

AUCTIONING: A small share of the annual cap can be auctioned. Participation is voluntary and the purpose of auctions is mainly to provide compliance entities with additional supply. To date, auctions have been held on an ad hoc basis.

Tianjin uses a capping mechanism for compliance obligations. If the difference between an entity's annual verified emissions and the allocation exceeds 20% of the allocation in either direction, the cap will be adjusted accordingly to balance out the surplus or deficit.

USE OF REVENUES

Climate mitigation

General budget, including debt reduction

Revenues are attributed to the city treasury. Revenues are mostly used to support work related to the control of GHG emissions.

FLEXIBILITY & LINKING

BANKING AND BORROWING

Banking is allowed. Borrowing is not allowed. The remaining free allowances for entities transferred into the National Carbon Market must be cancelled within three years.

OFFSET CREDITS

The use of domestic project-based China Certified Emission Reductions (CCERs) and Tianjin regional forestry offset credits is allowed. Non-fossil power bought through market-based methods may be used to offset part of their annual compliance obligation. Details are to be issued.

QUANTITATIVE LIMIT: The use of CCER credits is limited to 5% of the annual compliance obligation.

QUALITATIVE LIMIT: Credits must stem from CO_2 reduction projects, excluding hydroelectric power plants. The emissions reductions must have occurred after 2013.

LINKS WITH OTHER SYSTEMS

The Tianjin Pilot ETS is not linked with any other system.

OTHER CARBON PRICING INSTRUMENTS IN THE JURISDICTION

ETS: China's National Carbon Market
Domestic offsetting mechanisms: Tianjin regional forestry offset credits
Domestic offsetting mechanisms (national): China Certified Emissions Reduction (CCER)

COMPLIANCE

COMPLIANCE MECHANISM

Covered entities must surrender one allowance or offset credit per tCO_2e emitted for all their covered emissions.

COMPLIANCE PERIOD

One calendar year. Covered entities have until the end of October of the following year to surrender allowances.

MRV

FRAMEWORK: The Tianjin ETS follows the MRV guidelines of the National Carbon Market. Additionally, the Tianjin EEB developed "Guidelines for Greenhouse Gas Accounting and Reporting of Waterborne Cargo Transportation Enterprises".

5 Oil and gas exploration, airports, machinery and equipment manufacturing, agri-food processing, food and beverage, salt-mining, rubber and plastic products.

MONITORING: Covered entities are required to set up and follow emissions monitoring plans.

REPORTING FREQUENCY: Annual. Covered entities must submit their verified emission reports by the end of April in the year following the compliance year.

VERIFICATION: Third-party verification is required. Covered entities cannot use the same verifiers for three consecutive years. Fourth-party verification is required if:

(i) the difference between the emissions and the verification report exceeds 10% or 100,000 tonnes; or

(ii) the difference between the emissions of the current year and of the previous year exceeds 20%.

PENALTIES AND ENFORCEMENT

REGULATED ENTITIES: The "Tianjin Carbon Peaking and Neutrality Promotion Regulations", which took effect in November 2021, introduced financial penalties for failing to submit emission reports as required, ranging from CNY 20,000 (USD 2,782) to CNY 200,000 (USD 27,817). Companies that fail to comply are subject to fines of between five and ten times the average market transaction price for the volume of allowances not surrendered.

THIRD-PARTY VERIFIERS: Third-party verifiers found not to comply with regulations (e.g., in the case of false verification reports) are banned from providing verification services for three years.

MARKET REGULATION

MARKET DESIGN

MARKET PARTICIPATION: Covered entities, institutional investors (domestic and international), and individuals (domestic and international) that meet the requirements of the carbon emission trading rules set up by Tianjin Climate Exchange.

MARKET TYPES:

Primary: Most allowances are freely allocated. The Tianjin Climate Exchange organizes ad hoc auctions for the primary market. Between 2019 and 2021, it held five auctions. No sales have been held since.

Secondary: Products include spot Tianjin carbon emission allowances and spot CCERs. The Tianjin Climate Exchange manages the trading of all products.

LEGAL STATUS OF ALLOWANCES: Allowances are not considered as financial instruments. Invoices are issued as intangible assets.

MARKET STABILITY PROVISIONS

RESERVE

Instrument type: Price-based instrument

Functioning: In the case of market fluctuations, the Tianjin EEB can buy or sell allowances (for a fixed price or through auctioning) to stabilize the market. 5% of the total cap is kept as a government reserve for market stabilization. The Tianjin EEB can organize auctions according to market demand, no fixed triggers are required.

EXCHANGE

Instrument type: Price-based instrument

Functioning: Tianjin Climate Exchange implements a system of limits on price increases and decreases for trading over the exchange. It is 10% above or below the reference price (the weighted average price of all transactions on the previous trading day).

OTHER INFORMATION

INSTITUTIONS INVOLVED

Tianjin Ecology and Environment Bureau: Responsible for establishing the Tianjin ETS after a governmental restructure in 2019.

Tianjin Climate Exchange: Responsible for operating the trading platform and registry system.

EVALUATION/ETS REVIEW

Research on improving the Tianjin ETS has been undertaken by supporting institutes such as the Tianjin Climate Exchange.

REGULATORY FRAMEWORK

- → Interim Measure for Management of Emissions Trading in Tianjin (2025)
- → Tianjin Carbon Peaking and Neutrality Promotion Regulations (2021)
- → Action Plan for Deepening Reform of the ETS from 2026 to 2030 (2025)
- → Work Plan for Expanding the Scope of the Coverage of the Tianjin Carbon Emissions Trading Market (2025)
- → Allocation Plan for 2024
- → Allocation Plan for 2025

TOKYO

TOKYO CAP-AND-TRADE PROGRAM

- First city-wide ETS in the world
- Covers commercial and industrial buildings
- During its fourth compliance period, facilities must reduce emissions to 50% (buildings) or 48% (industry) below base-year emissions

ETS DESCRIPTION

The Tokyo Metropolitan Government's (TMG) Cap-and-Trade Program was launched in April 2010 and is Japan's first mandatory ETS. It covers around 20% of the metropolitan area's emissions.

The Tokyo ETS covers CO_2 emissions from large buildings, factories, heat suppliers, and other facilities that consume large quantities of fossil fuels. Covered facilities must surrender compliance units for emissions that exceed their baseline, which is based on absolute historical emissions and a compliance factor. Compliance factors are determined based on the type of facility and factors such as expected energy efficiency gains and the extent to which they consume energy supplied by other facilities.

Tokyo's ETS is linked to the Saitama Prefecture ETS, with credits mutually exchangeable between the two jurisdictions.

YEAR IN REVIEW

The TMG's Cap-and-Trade Program's fourth compliance period started in April 2025. The program covers ~1,200 facilities that annually used the energy equivalent to or more than 1,500 kL of crude oil for three consecutive fiscal years. All allowances are freely allocated.

During the fourth compliance period (FY2025 to FY2029), the compliance factor rose to 50% for office buildings and 48% for factories. To boost the use of renewable energy, off-site renewable energy, including self-consignment and PPA, count as zero emissions, and certificates derived from renewable energy can be deducted from energy-related CO_2 emissions. In addition, actual emission factors, instead of fixed emission factors, are used to calculate emissions from electricity, heat, and city gas supplied by retailers, based on contracts at the facilities. A new system for excess emission reductions limits credits to those achieved through energy efficiency or renewable energy; credits are no longer awarded for certification improvements or emission factor adjustments.

In March 2025, the TMG published the results for the fourth fiscal year of the third compliance period (FY2023), showing that emissions from covered facilities totaled 11.32 $MtCO_2$. This is a 31% reduction below base-year emissions.

1 The cap is the sum of all individual companies' emission limits (baselines), which are set at the beginning of a compliance period for the entire compliance period. The baselines are absolute limits and not intensity based.
2 August 2025 estimate. Prices are determined from OTC trading and the TMG estimates recent prices based on interviews. For this reason, no accurate average price can be determined.

In force
Under development
Under consideration

SECTORS

INDUSTRY

BUILDINGS

CAP OR TOTAL EMISSIONS LIMIT

Absolute cap[1]
5.9 $MtCO_2$ (2030)

GREENHOUSE GASES

CO_2

OFFSET CREDITS

Domestic (national and prefectural) offset credits, with quantitative limits

ALLOCATION

Free Allocation: Grandparenting
Free Allocation: Fixed Benchmarking

AVERAGE 2025 PRICES

Average price: ~JPY 585[2] (USD 3.91)

EMISSIONS & TARGETS OF TOKYO

OVERALL GHG EMISSIONS (including indirect CO_2, excluding LULUCF), 2023

(in $MtCO_2e$, share of total in %) 56.2 $MtCO_2e$[3]

Transport	8.4	16.7%
Manufacturing	3.3	6.6%
Business	21.2	42.4%
Residential	15.3	30.6%
Waste	1.9	3.8%
Total	**50.1**	

GHG REDUCTION TARGETS

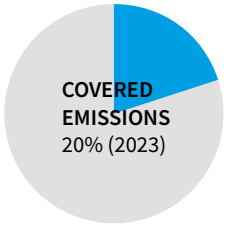
By 2035: At least 60% reduction from 2000 GHG levels (Zero Emission Tokyo Strategy Beyond Carbon Half)

By 2050: Net zero CO_2 emissions (Tokyo Environmental Master Plan)

ETS COVERAGE & PHASES

COVERED EMISSIONS 2023

Verified ETS emissions: 11.3 $MtCO_2$



PHASES

PHASE 1: 1 April 2010 to 30 September 2016
PHASE 2: 1 April 2015 to 31 January 2022
PHASE 3: 1 April 2020 to 30 September 2026
PHASE 4: 1 April 2025 to 30 September 2031

The Tokyo ETS has phases as well as compliance periods (see 'Compliance' section). A phase is defined as the compliance period plus an additional 18-month adjustment period, during which facilities may continue to trade credits in order to reach their targets for the corresponding compliance period.

CAP OR TOTAL EMISSIONS LIMIT

PHASE 3: 12.2$MtCO_2$ (FY2024)
PHASE 4: 5.9 $MtCO_2$ (FY2030)

The total emissions limit under the Tokyo Cap-and-Trade program is the sum of the bottom-up installation-level emissions limits for all individual covered facilities.

The total emissions limit for the fourth compliance period under the Tokyo ETS is a 50% reduction on average over the five years compared to the base-year emissions which are the average emissions of any three consecutive years between FY2002 and FY2007 (see 'Allowance Allocation' section).

SECTORS AND THRESHOLDS

TYPES OF FUEL COVERED: Consumption of fuels, heat, and electricity in commercial and industrial buildings. Building owners are subject to surrender obligations, and all tenants are required to cooperate in owners' reduction measures. Large tenants (those with a floor space above 5,000 m^2 or electricity usage per year over six million kWh) are also required to prepare and submit their own emissions reduction report.

INCLUSION THRESHOLDS: Facilities that consume energy equivalent to at least 1,500 kL of crude oil per year for more than three consecutive fiscal years.

POINT OF REGULATION

Downstream (industry, buildings)

TYPE OF ENTITIES

Facilities

NUMBER OF ENTITIES

~1,200 facilities:

- Office/commercial buildings: ~1000
- Factories: ~200

ALLOWANCE ALLOCATION & REVENUE

ALLOWANCE ALLOCATION

All allowances in the Tokyo Cap-and-Trade Program are allocated for free.

Under the Tokyo ETS, each facility has its own cap, which serves as the "baseline" defining the reduction target it must achieve. Baselines for facilities are set according to the following formula: Base-year emissions x (1 - compliance factor) x compliance period (five years). The compliance factor for each period is determined based on regulations established by the Governor of Tokyo. Prior to the start of each new compliance period, TMG holds expert meetings to gather opinions to aid in determining the compliance factors.

3 The overall emissions figure for Tokyo is higher than the total of the emissions by sector because the former includes all GHGs, whereas the emissions by sector only measures CO_2 emissions.

For facilities that have been designated as compliance facilities since the launch of the ETS, base-year emissions are based on average emissions of any three consecutive years between FY2002 and FY2007.

Base-year emissions for new entrants are calculated using either historical emissions (average annual emissions for three consecutive fiscal years of the four fiscal years immediately preceding the compliance period) or an emission intensity standard provided by the government (based on emissions from FY2005 to FY2007).

At the beginning of each new compliance period, all allowances are allocated for free to covered facilities for the full five years. Facilities with emissions below their baseline can receive excess emission reduction credits for the reductions below their baseline. Those facilities that exceed their baseline must purchase and surrender credits from other compliance facilities or offset credits to meet their compliance obligation. Credits may be issued for using renewable energy (see 'Offset Credits' section).

COMPLIANCE FACTOR:
First compliance period: 8% or 6% reduction below base-year emissions

Second compliance period: 17% or 15% reduction below base-year emissions

Third compliance period: 27% or 25% reduction below base-year emissions

Fourth compliance period: 50% or 48% reduction below base-year emissions

The lower compliance factor applies to factories and office buildings that use district heating and cooling for more than 20% of their energy consumption.

In the third and fourth compliance period, in medical facilities where electricity is vital to preserve life and health, the compliance factor is two percentage points lower than whichever category would otherwise apply.

The compliance factor is reduced by three percentage points for facilities with an electrification rate of less than 20% in the fourth compliance period alone.

Facilities demonstrating outstanding performance in emission reductions, as well as in the introduction, use, and management of energy efficient equipment, are certified as top-level facilities with the limit on the issuance of excess emission reductions removed.

The reduction of the compliance factor for certified top-level facilities was eliminated in principle except in certain cases in order to recognize facilities that are proactive in reducing emissions.

QUALIFYING FOR ADDITIONAL EMISSION REDUCTION CREDITS THROUGH THE USE OF RENEWABLE ELECTRICITY: In order to evaluate the energy efficiency efforts of the covered facilities, supply side (electricity and others) CO_2 emission factors were fixed during each compliance period. Until the third compliance period, if covered facilities procured electricity from TMG-certified suppliers with low emission factors (0.37 tCO_2/1,000 kWh or less), they could deduct the difference between these emission factors (actual emission factor of purchased electricity at the covered facility and the fixed emission factor provided by TMG) from their reported emissions to reflect this lower emission factor of purchased electricity. If covered facilities generated electricity from renewable sources for their own use, they could deduct this amount of electricity from the total energy usage of the facility to be reported.

In the fourth compliance period, off-site renewable energy, including self-consignment and PPA, count as zero emissions, and certificates derived from renewable energy can be deducted from energy-related CO_2 emissions. In addition, actual emission factors, instead of fixed emission factors, are used to calculate emissions from electricity, heat, and city gas supplied by retailers, based on contracts with the facilities to evaluate the use of renewable energy at the covered facilities.

FLEXIBILITY & LINKING

BANKING AND BORROWING

Banking is allowed only between consecutive compliance periods.
Borrowing is not allowed.

OFFSET CREDITS

The use of offset credits is allowed.

28,200 tCO_2e of offset credits were issued in FY2024 and 10,957 tCO_2e were surrendered for compliance in FY2024.

QUALITATIVE LIMITS: Four types of offset credits are permitted, based on certification criteria. They complement emission reduction credits issued to facilities covered by the Tokyo ETS whose emissions fall below their baseline:

- Small and mid-size facility credits: Emission reductions from non-covered small and medium-sized facilities in Tokyo.
- Outside Tokyo credits: Emission reductions achieved from large facilities outside of the Tokyo area. Large facilities are those with an energy consumption of at least 1,500 kL of crude oil equivalent in a base year and with base-year emissions of 150,000 tCO_2 or less.
- Renewable energy credits: Renewable energy credits generated under the Tokyo ETS encompass the following types: Environmental Value Equivalent, Renewable Energy Certificates, and New Energy Electricity, generated under the Renewable Portfolio Standard Law. Credits from solar

(heat, electricity), wind, geothermal, and hydro (under 1,000 kW) electricity production for use under the Tokyo ETS are converted on a one-to-one basis, as are credits from biomass (biomass rate of 95% or more, black liquor excluded).
- Saitama credits (via link): Emission reductions from facilities in Saitama with base-year emissions of 150,000 tCO_2 or less.

QUANTITATIVE LIMITS: Quantitative limits apply only for Outside Tokyo credits: these are issued only for the reduction amount that exceeds the compliance factor. These credits can be used for compliance for up to one-third of facilities' reduction obligations.

All offset credits must be verified by a verification agency.

LINKS WITH OTHER SYSTEMS

Tokyo linked its program with the Saitama Prefecture ETS in April 2011. Tokyo and Saitama credits are officially eligible for trade between the two jurisdictions. About 60 credit transfers have taken place so far between Saitama and Tokyo.

OTHER CARBON PRICING INSTRUMENTS IN THE JURISDICTION

Carbon tax: Japan national carbon tax
ETS: Japan national ETS (started in April 2026)

COMPLIANCE

COMPLIANCE MECHANISM

Covered facilities must surrender one compliance unit per tCO_2 that exceeds the facility's emissions limit (baseline).

COMPLIANCE PERIOD

Five years.

Facilities must submit a "GHG Emissions Reduction Plan" and an implementation status report by the end of November every year.

Compliance units to meet each facility's targets must be surrendered 18 months after the end of the compliance period (see 'Phases' section above).

MRV

FRAMEWORK: MRV is based on the "TMG Monitoring/Reporting Guidelines" and the "TMG Verification Guidelines".

MONITORING: Annual emissions reporting, including emission reduction plans. Seven GHGs must be monitored and reported: CO_2, CH_4, N_2O, PFCs, HFCs, SF_6, and NF_3. Large compliance tenants, i.e., those with a floor space above 5,000 m^2 or over 6 million kWh of electricity use per year, are required to submit their own emissions reduction plans ("Compliance Tenant GHG Emissions Reduction Report") to the TMG in collaboration with building owners.

As of April 2025, actual emission factors, instead of fixed emission factors, are used to calculate emissions from electricity, heat, and city gas supplied by retailers, based on contracts at the facilities. This aims to incentivize the use of renewable energy.

REPORTING: GHG Emissions Reduction Plans including an implementation status report (and Compliance Tenant GHG Emissions Reduction Report if needed) must be submitted by the end of November of the year following the compliance year.

VERIFICATION: Annual emissions reports require third-party verification.

PENALTIES AND ENFORCEMENT

In the case of non-compliance, the following measures may be taken:

FIRST STAGE: The governor orders the facility to reduce emissions by the amount of the reduction shortfall multiplied by 1.3.

SECOND STAGE: Any facility that fails to carry out the order will be publicly named and subject to penalties (up to JPY 500,000 [USD 3,340.95]) and surcharges (1.3 times the shortfall).

MARKET REGULATION

MARKET DESIGN

MARKET PARTICIPATION: Compliance facilities, i.e., those above the inclusion threshold (see 'Sectors and Thresholds' section); non-compliance facilities (trading account holders). TMG allows only "reduction credits" and not "emission credits", i.e., one can earn credits only after achieving emission reductions. Only compliance facilities and legal entities with an office in Japan may open trading accounts.

MARKET TYPES:
Primary: All allowances are allocated for free.

Secondary: Covered facilities and other facilities which hold trading accounts trade credits over the counter. Businesses wishing to buy or sell credits can also go through a private intermediary to find a buyer and negotiate the price.

LEGAL STATUS OF ALLOWANCES: Allowances are not financial instruments under the Tokyo ETS.

MARKET STABILITY PROVISIONS

Covered facilities and other market participants (trading account holders) trade over the counter, and the TMG does not control carbon prices.

OTHER INFORMATION

INSTITUTIONS INVOLVED

Tokyo Metropolitan Government: Oversees the Tokyo Cap-and-Trade Program, via the Bureau of Environment

EVALUATION/ETS REVIEW

For every new compliance period, the TMG establishes a committee of experts to discuss and determine compliance factors and other important issues for the next compliance period.

The TMG held seven committee meetings from September 2022 to August 2023. It also ran public consultations in June 2023 and in 2025. In July and October 2025, the TMG held two committee of experts' meetings to align its program with GX-ETS and amended the Tokyo Metropolitan Environmental Security Ordinance in December 2025.

In March 2025, the TMG published the emission reductions results for FY2023,[4] showing that emissions from covered facilities totaled 11.32 million tonnes, a 31% reduction from the base-year emissions, due to progress in energy efficiency measures and the use of low-carbon electricity and heat.

REGULATORY FRAMEWORK

- → **Tokyo Metropolitan Environmental Security Ordinance and Regulation for the Enforcement of the Tokyo Metropolitan Environmental Security Ordinance**
- → **Revised Tokyo Cap-and-Trade Program for the fourth compliance period**
- → **Outline documents** for large facilities
- → **Tokyo Environmental Master Plan**
- → **Zero Emission Tokyo Strategy Beyond Carbon Half**

4 See: **Tokyo Cap-and-Trade Program: Significant Emission Reductions Continue at Covered Facilities in the Fourth Fiscal Year of the Third Compliance Period, TMG, March 2025.**

VIETNAM

VIETNAM PILOT EMISSIONS TRADING SYSTEM

- "Decree 119/2025/ND-CP" updates Vietnam's carbon-market framework, defining ETS design, scope, and compliance rules
- "Decision 263/QĐ-TTg" approves aggregate pilot-phase allowance budgets for 2025–2026
- Pilot ETS covers thermal power, iron and steel, and cement installations; Full implementation expected from 2029

ETS DESCRIPTION

Vietnam's national ETS is established under the "Law on Environmental Protection" and "Decree 06/2022/ND-CP", which provide the national framework for GHG mitigation, carbon markets, and monitoring, reporting, and verification. This framework was clarified and operationalized by Decree 119/2025/NĐ-CP, effective from August 2025, which defines the design of the ETS and institutional responsibilities. According to the legal framework, the national ETS is a key component of the country's strategy to meet its NDC for 2030 and achieve net-zero GHG emissions by 2050.

The ETS is designed to begin with a pilot phase running from 2025 to 2028, during which allowances are allocated for free, and the regulatory framework is reviewed and evaluated. The system applies an intensity-based approach, with allowances allocated using sector-specific benchmarks and verified output, while compliance obligations are determined ex post based on verified emissions.

Decree 119 also establishes flexibility provisions, allowing covered entities to bank unused allowances through 2030, borrow up to 15% of allowances from future periods, and use offset credits for up to 30% of their compliance obligation. Eligible offset credits must be generated after January 2021 and originate from mechanisms aligned with Article 6 of the Paris Agreement, including transitioned Clean Development Mechanism activities under Article 6.4, the Joint Crediting Mechanism, and other approved bilateral arrangements.

The pilot phase initially covers 110 facilities, including thermal power plants, iron and steel facilities, and cement producers. In February 2026, Decision 263/QĐ-TTg approved aggregate allowance budgets for the first pilot period: 243.1 $MtCO_2e$ for 2025 and 268.4 $MtCO_2e$ for 2026. Based on these budgets, installation-level allocation will be finalized by MAE. From 2029, the ETS will gradually introduce allowance auctioning, expand sectoral coverage, and explore linkages with international carbon markets under Article 6 cooperation.

YEAR IN REVIEW

In August 2025, Decree 119/2025/NĐ-CP entered into force, significantly advancing Vietnam's ETS by operationalizing its design, clarifying rules for allowance allocation and compliance, and introducing flexibility provisions, including banking, borrowing, and the use of offset credits. In January 2026, Vietnam issued Decree 29/2026/NĐ-CP on the domestic carbon trading platform. The decree designates the Vietnam Stock Exchange as the authority responsible for administering trading activities, strengthens provisions on market manipulation and sanctions, and limits trading to spot, on-exchange transactions. In February 2026, Decision 263/QĐ-TTg approved aggregate GHG emission allowance budgets for the first pilot period, establishing annual ceilings on the volume of allowances that may be allocated to covered installations.

1 The pilot ETS will initially cover cement, iron and steel production facilities.

SECTORS

POWER

INDUSTRY[1]

CAP OR TOTAL EMISSIONS LIMIT

Intensity-based emissions limit
268.4 $MtCO_2e$ (2026)

GREENHOUSE GASES

CO_2, CH_4, N_2O, HFCs, PFCs, and SF_6

OFFSET CREDITS

Domestic and international offset credits, with quantitative limits

ALLOCATION

Free Allocation: Output-based Benchmarking

With Decree 29/2026, Vietnam's domestic carbon trading platform is expected to become operational by the end of 2026. Installation-level allocation for the 2025–2026 pilot period is expected to be finalized by MAE based on the approved aggregate GHG emission budgets. Further reviews under Decree 119/2025/NĐ-CP will inform pilot evaluation, future allocation cycles, and the transition from the pilot phase to full ETS operation after 2028.

EMISSIONS & TARGETS OF VIETNAM

OVERALL GHG EMISSIONS (including indirect CO_2, excluding LULUCF), 2016

(in $MtCO_2e$, share of total in %)

Energy	205.8	65%
Industrial processes	46.1	14.6%
Agriculture, forestry and other land use[1]	44.1	13.9%
Waste	20.7	6.5%
Total	**316.7**	

Energy industries	91.0	29%
Manufacturing industries and construction	38.2	12%
Transport	35.8	11%
Other energy	40.7	13%

GHG REDUCTION TARGETS

By 2030: 43.5% reduction compared to BAU levels ("National Strategy for Addressing Climate Change through 2050 [Decision No. 896/QD-TTg]")

By 2050: Net-zero GHG emissions (National Strategy for Addressing Climate Change through 2050 [Decision No. 896/QD-TTg])

ETS COVERAGE & PHASES

PHASES

PHASE 1 (Pilot Phase): Two years (2025 to 2026)

PHASE 2 (Pilot Phase): Two years (2027 to 2028)

PHASE 3: Two years (2029 to 2030)

CAP OR TOTAL EMISSIONS LIMIT

The total emissions limit under the Vietnam Pilot ETS changes as a function of production (output) and is the sum of the bottom-up output-based emissions limits for all individual covered entities. The bottom-up emissions limits do not represent an absolute cap. Allowance budget (2025): 243.1 $MtCO_2e$

Allowance budget (2026): 268.4 $MtCO_2e$

SECTORS AND THRESHOLDS

PHASE 1: Thermal power plants, iron and steel production, cement production.

INCLUSION THRESHOLDS: Vietnam does not apply a numerical emissions or fuel-use threshold. Facilities are included if they appear in the approved list of major GHG emitting facilities required to conduct inventories (per Article 5 and Annexes of Decree 06/2022 and Decree 119/2025).

POINT OF REGULATION

Point source

TYPE OF ENTITIES

Installations/facilities

NUMBER OF ENTITIES

Phase 1 (2025 to 2026) will cover 34 thermal power plants, 25 iron and steel facilities, and 51 cement facilities.

ALLOWANCE ALLOCATION & REVENUE

ALLOWANCE ALLOCATION

PHASE 1:

Auctioning:

No auctioning in the pilot phase.

Free allocation:

- Output-based benchmarking, reflecting emission intensity per unit of product, production plans, mitigation potential, and technical and financial capacity
- Free allocation share: 100%.

2 Vietnam uses the sectors defined in the latest IPCC guidelines (2006 IPCC Guidelines for National Greenhouse Gas Inventories) for its inventory, in which the agricultural and the LULUCF sectors are integrated into "Agriculture, Forestry and Other Land Use." In an effort to make the display of overall GHG emissions comparable with other jurisdictions, the figure shown here excludes the category "3B Land," but includes the categories "3A Livestock" and "3C Aggregate sources and non-CO_2 emissions sources on land."

BANKING AND BORROWING

Banking is allowed: facilities may transfer unused allowances to the next phase.
Borrowing is allowed: facilities may borrow up to 15% of their next-phase allocation (non-tradable) until 2030.

OFFSET CREDITS

The use of offset credits is allowed. Covered facilities may use domestic and international carbon credits for compliance alongside allowances.

QUALITATIVE LIMITS: Eligible offset credits are domestic carbon credits issued under the national carbon credit exchange and offset mechanism, and international credits from mechanisms implemented under Articles 6.2 and 6.4 of the Paris Agreement, for emission reductions achieved from January 1, 2021 onwards, and registered in the National Registry System.

QUANTITATIVE LIMITS: Facilities may use offset credits to cover up to 30% of their surrender obligation for each allocation period.

OTHER CARBON PRICING INSTRUMENTS IN THE JURISDICTION

Domestic offsetting mechanisms: Domestic Carbon Credit Exchange and Offset Mechanism *(Cơ chế trao đổi, bù trừ tín chỉ các-bon trong nước)* under Decree 06/2022 and Decree 119/2025.

COMPLIANCE

COMPLIANCE MECHANISM

Covered entities must surrender one compliance unit (allowance or eligible carbon offsets), per tCO_2e emitted for all their covered emissions.

Facilities may use domestic carbon credits and eligible international credits (Articles 6.2 and 6.4) to offset their compliance obligations, subject to quantitative limits.

COMPLIANCE PERIOD

Two years.

Covered entities must surrender allowances (and eligible offset credits) by December 31 of the year following the end of each allocation period.

MRV

FRAMEWORK: MRV requirements are established under Decree 06/2022/NĐ-CP and Decree 119/2025/NĐ-CP, which set out national rules for GHG monitoring, reporting, and verification for both ETS and non-ETS sectors, as well as the National MRV System.

MONITORING: Facilities listed in the national inventory of major emitters must conduct continuous monitoring of activity data needed for emission calculation.

Monitoring plans are implicitly required through sectoral guidance; facilities must follow methods and emission factors issued by line ministries.

MRV obligations also apply to major emitters in energy, industry, agriculture, waste, and LULUCF, with monitoring required from 2024 onward (facility-level inventories biennially from 2024 or 2025, depending on category).

Facilities allocated quotas (thermal power, iron and steel, cement) must monitor emissions for each allocation period starting 2025.

REPORTING: Biennial inventory reports to be submitted to provincial authorities by March 31 of the year following the end of each reporting period, starting from 2025 for most facilities.
Facilities allocated quotas submit verified inventories annually by December 1, starting from 2027.

VERIFICATION: Third-party verification is required for facility-level GHG inventory results for all installations allocated quotas, annually from 2027 onward.

PENALTIES AND ENFORCEMENT

During the pilot phase, compliance with ETS obligations is required; however, no monetary fines or penalties will be applied for non-compliance.

Enforcement during the pilot focuses on administrative oversight, including mandatory MRV and controls through the National Registration System. Decree 119/2025/NĐ-CP refers to the general framework on administrative violations in environmental protection, which may apply to reporting and procedural non-compliance. Penalties and stronger enforcement measures for allowance shortfalls are expected to be defined for post-pilot stages of the ETS.

MARKET REGULATION

MARKET DESIGN

MARKET PARTICIPATION: Compliance entities (installations/facilities allocated quotas) may hold and trade allowances. Financial service providers and individuals are not explicitly mentioned in the regulation.

MARKET TYPES:
Primary: There are no auctions during the Pilot Phase; allowances are allocated for free to covered facilities.

Secondary: Until the carbon exchange is operational, no organized secondary market is in place.

LEGAL STATUS OF ALLOWANCES: Allowances are defined as rights to emit one tCO_2e and are tradable on the exchange, but they are not explicitly classified as financial instruments in current regulation.

MARKET STABILITY PROVISIONS

No formal market stability mechanism under the current regulation.

OTHER INFORMATION

INSTITUTIONS INVOLVED

Ministry of Agriculture and Environment (MAE): Responsible for rulemaking for the carbon credit and ETS markets; organizing the pilot and official operation of the carbon trading floor; allowance allocation, exchange, and surrender; monitoring and supervision of the carbon market. It also administers the national GHG inventory and operates the National Registration System for allowances and carbon credits.

Ministry of Finance (MoF): Responsible for establishing and managing the carbon exchange infrastructure, including financial regulations and market oversight. The MoF coordinates with MAE to develop the financial management framework governing market transactions, fees, and auctioning procedures during the transition to full ETS operation.

EVALUATION/ETS REVIEW

Vietnam's ETS framework includes provisions for periodic review and evaluation during the pilot phase. Under Decree 119/2025/NĐ-CP, MAE is responsible for monitoring implementation, reviewing compliance data, and coordinating assessments of ETS performance in cooperation with relevant line ministries. Evaluation during the pilot phase is intended to inform adjustments to allocation rules, benchmarks, sectoral coverage, and flexibility provisions ahead of full system operation after 2028. Reviews are expected to draw on verified emissions data reported through the national MRV system and recorded in the National Registration System.

REGULATORY FRAMEWORK

- → **Law No. 72/2020/QH14 on Environmental Protection, 133-139'20/OG**
- → **Decision No. 896/QD-TTg dated July 26, 2022**
- → **Decision 01/2022/QD-TTg**
- → **Decree 06/2022/ND-CP**
- → **Decision 232/QD-TTg**
- → **Decree 119/2025/NĐ-CP**

04 ABOUT ICAP

ABOUT THE INTERNATIONAL CARBON ACTION PARTNERSHIP

Founded in 2007, the International Carbon Action Partnership (ICAP) brings together policymakers from all levels of government that are operating an emissions trading system (ETS) or are taking steps to introduce one. ICAP provides a unique platform for governments to share their practical experiences and the latest knowledge on ETS. The ICAP membership currently counts 36 members and 9 observers.

ICAP'S OBJECTIVES

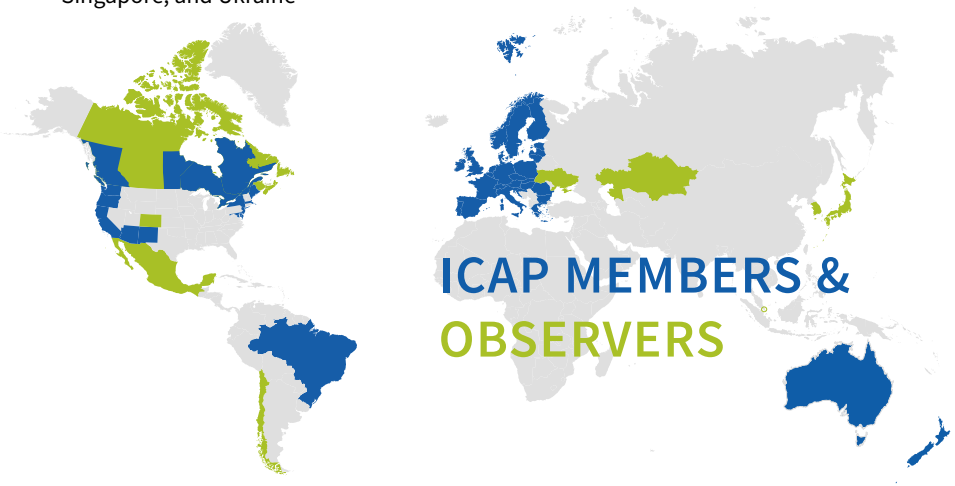
- Highlight the key role of emissions trading as an effective tool to address climate change.
- Facilitate the development, implementation, and refinement of ETSs around the world.
- Build and strengthen partnerships among governments to share best practices and lessons learned.

Members (as of April 2026)

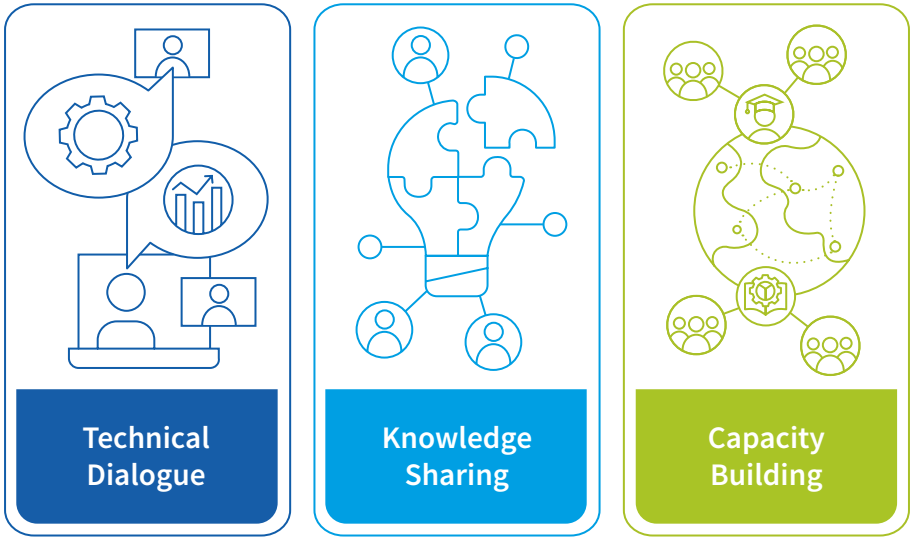
Arizona, Australia, Austria, Brazil, British Columbia, California, Denmark, the European Commission, France, Germany, Greece, Ireland, Italy, Maine, Manitoba, Maryland, Massachusetts, the Netherlands, New Jersey, New Mexico, New York, New Zealand, Norway, Ontario, Oregon, Poland, Portugal, Québec, Scotland, Spain, Sweden, Switzerland, the Tokyo Metropolitan Government, Vermont, the United Kingdom, and the State of Washington.

Observers

Canada, Chile, Colorado, Japan, Kazakhstan, the Republic of Korea, Mexico, Singapore, and Ukraine



THREE PILLARS OF ICAP'S WORK



Technical Dialogue: ICAP provides a unique platform for its Members, Observers and experts to exchange on ETS design and operation. Within this workstream, ICAP establishes working groups, publishes papers, and organizes webinars and public events on pertinent ETS topics. Past and ongoing topics include ETS linking, the use of offsets, Article 6, carbon leakage, free allocation, and net-zero.

Knowledge Sharing: ICAP acts as a central repository of information on emissions trading for those who want to learn more about emissions trading and access information about the latest ETS developments worldwide. ICAP organizes conferences and public workshops on specific ETS design topics, participates in various events to promote emissions trading, and publishes useful tools and knowledge products on the ICAP website, e.g., the Allowance Price Explorer, the ETS map, the ICAP Briefs on ETS basics, and the annual ICAP Status Report on the latest developments of ETSs around the world.

Capacity Building: ICAP builds capacity on the design, implementation, and operation of ETSs around the world by offering training courses and workshops to policymakers and other stakeholders on all aspects of emissions trading. The ICAP alumni network, comprising over 1,000 practitioners from over 70 countries, stays connected, works together, and exchanges knowledge during international climate events or alumni events that ICAP organizes on a regular basis.

NOTES ON METHODS AND SOURCES

GENERAL NOTES

1. The report draws on a range of sources, including official emissions trading system (ETS) information and statements from governments and public authorities, data submitted to the UNFCCC, or, where available, other official reporting, and information provided by ICAP members and observers, or in-country/local experts from our network. Information on emitting sectors is based on jurisdiction-specific data sources; therefore, categories are not necessarily consistent across jurisdictions.

2. Data in the report represents the current situation as of February 2026.

3. Where 2025 data is not yet available, we use the most recent available data. The covered emissions graph in the factsheets shows the latest year for which both verified emissions data and inventory data are available. In cases where the earliest covered emissions data postdates the latest aggregate emissions data, we estimate the coverage using the earliest covered emissions data and the latest aggregate emissions data.

4. For the purpose of this report, ETSs include both systems that set an absolute limit on GHG emissions for regulated entities ("cap-and-trade" systems), as well as systems that set an intensity-based limit on GHG emissions for regulated entities. Systems that regulate other gases (e.g., other air pollutants) or trade other units (e.g., energy-efficiency certificates), other market-based instruments (e.g., carbon taxes) and voluntary programs do not fall under the scope of this report. Until the 2023 version, previous editions of the report only encompassed mandatory cap-and-trade systems. Where relevant, figures and graphs have been updated to include information on intensity-based systems.

5. The report uses metric tonnes throughout the report, unless otherwise indicated.

6. Emissions coverage as reported in the factsheets refers to the verified emissions of entities under the ETS in a jurisdiction as a proportion of that jurisdiction's inventory emissions. When this value is not available, an equivalent value provided by the jurisdiction or by local experts, or the cap of the system, is used.

7. Average allowance prices correspond to the following:

    a. For systems with a primary market for allowances, they are the weighted average of either settlement prices at auctions that took place during the year or, in some cases, of allowances with that year's vintage, which may have been auctioned before the calendar year.
    b. For systems without a primary market of allowances, they are the arithmetic mean of settlement prices over the year, as recorded by the exchange.
    c. For a limited number of systems, they are the values provided directly by the jurisdiction or by local experts.

8. All monetary values in national currency units are converted to USD using the annual average exchange rates provided by the international financial statistics of the IMF. For monetary values that are fixed over multiple years, the value reported in USD uses the most recent year's exchange rates.

9. Overall GHG emissions, the sum of the emissions categories, and the corresponding percentages reported in the factsheets may not add up exactly, due to rounding.

10. For national jurisdictions, the data in the "GHG emissions excl. LULUCF" section of the factsheets are predominantly drawn from the latest National Inventory Submissions and/or Biennial Transparency Report submissions to the UNFCCC. For sub-national jurisdictions, domestic inventory data are used unless stated otherwise. Wherever possible, emissions are presented in line with standard IPCC sectoral categorization: "Energy", "Industrial Processes and Product Use", "Agriculture", and "Waste". Neither data from LULUCF nor "Memo items" are included unless stated otherwise. For jurisdictions that use the "Agriculture, Forestry and Land Use Change" (AFOLU) IPCC sector in their inventories, emissions data excludes emissions and removals from categories "3B Land" and "3D Products of collected wood" but includes the categories "3A Livestock" and "3C Aggregate sources and non-CO_2 emissions sources on land". Emissions from "Energy" are further disaggregated as follows:

a. For jurisdictions where this information is available:

   i. “Energy industries”: CRT Code 1.A.1 “Energy industries”.
   ii. “Manufacturing Industries and construction”: CRT Code 1.A.2 “Manufacturing Industries and construction”.
   iii. “Transport”: CRT Code 1.A.3 “Transport”.
   iv. “Commercial, Institutional and Residential”: CRT Codes 1.A.4.a “Commercial/institutional” and 1.A.4.b “Residential”.
   v. “Other energy”: All other CRT codes in the “Energy” IPCC sector.

b. For other jurisdictions, emissions are presented consistent with their inventory-specific categories.

11. The following criteria are used to determine the three ETS status categories:

a. In force: the ETS has been formally adopted through legislation or regulation, and compliance obligations are in place for covered emissions in the current year.
b. Under development: A mandate for ETS is established and rules are currently being drafted.
c. Under consideration: ETS is being considered as a potential mitigation instrument, the government or other relevant authorities have publicly sent signals towards the development of an ETS.

NOTES ON INFOGRAPHICS

For the infographics “From Local to Supranational”, “Emissions Trading Worldwide” and “Sectoral coverage”, we draw on data contained in the factsheets, the online version of the ICAP ETS Map (**https://icapcarbonaction.com/en/ets-map**), as well as news articles from the ICAP Secretariat. For infographics involving quantitative data, the following sources and methods were used:

FROM LOCAL TO SUPRANATIONAL

Jurisdictions are displayed if they implement ETS legislation.

EMISSIONS TRADING IN NUMBERS

Jurisdictions’ shares of global GDP and world population are calculated based on the latest annual data available before the Status Report’s editorial cut-off date at the end of January 2026. They typically cover 2024 or 2023 data. The total population of jurisdictions with an ETS in force and the total GDP of their respective economies are calculated as a share of world population and global GDP. The share of global GHG emissions covered by an ETS in force is calculated using the process described in note 5 under “Global Expansion of ETS” below. In cases where the 2024 cap data were not available, estimates based on most recent data were used. Specific sources and figures are available upon request from info@icapcarbonaction.com.

GLOBAL EXPANSION OF EMISSIONS TRADING

1. Whenever available, we use the official and most recent cap data. When those data are unavailable or when systems operate without a cap, the values or estimates of covered emissions in the regulated sectors are used instead.

2. The EU ETS cap in 2021 was revised down to reflect the UK leaving the system. It includes emissions covered under the aviation sector cap of the EU ETS. For more details, see the EU ETS factsheet.

3. The China National Carbon Market started operating in 2021. In 2021, regulated entities had to surrender allowances pertaining to their 2019 and 2020 emissions. The infographic reflects the start date of the Chinese National ETS in 2021, while also indicating the retroactive coverage of the system in 2019 and 2020. When official data were not available, the emissions coverage or caps for the China National Carbon Market and Chinese Pilots were estimated values provided by domestic ETS experts.

4. As the Massachusetts’ system covers the same emissions as those covered by RGGI in Massachusetts, the Massachusetts system is excluded from the infographic to avoid double counting.

5. For the Japan ETS, which started operating in 2026 and for which no official coverage values are available, the coverage value is based on official estimates.

6. For the India ETS, which started operating in 2026 and for which no official coverage values are available, an estimate of covered emissions is used. This estimate is based on the final emissions intensity targets that have been notified by MoEFCC as of February 2026 and includes the following sectors: aluminum, chlor-alkali, cement, pulp and paper, petrochemicals, petroleum refining, and textiles. The estimate does not include the iron and steel sector, for which no final emissions intensity targets have been notified as of February 2026.

7. Global emissions data refer to GHG emissions in CO_2e excluding LULUCF and are obtained from EDGAR (Emissions Database for Global Atmospheric Research) Community GHG Database (a collaboration between the European Commission, Joint Research Centre (JRC), the International Energy Agency (IEA), and comprising IEA-EDGAR CO_2, EDGAR CH4, EDGAR N2O, EDGAR F-GASES version EDGAR_2025_GHG (2025) European Commission. EDGAR website (**https://edgar.jrc.ec.europa.eu/report_2025**). Global emissions data reflects the report's 2024 figure as the most recently available year of data. Percentages of global emissions covered are rounded to the nearest full percentage.

SECTORAL COVERAGE

1. For the purposes of this infographic, the following sector definitions are used:

Mining and extractives

Emissions from mines, rigs, and fuel processing, which includes emissions from fuel used for energy in these facilities as well as fugitive emissions.

Power

Emissions from the combustion of fossil fuels for electricity generation, as well as large-scale centralized heat production.

Industry

Emissions from industrial activity, typically covering both energy emissions (e.g., from burning fossil fuels in furnaces), as well as process emissions (e.g., in the case of cement production).

Aviation / Domestic Aviation

Emissions from fossil fuel combustion for flights arriving and departing within the jurisdiction ('domestic') which are not regulated by the International Civil Aviation Organization (ICAO).

Transport

Emissions from fossil fuel combustion for transport with the exception of aviation (domestic and international), maritime transport and off-road transport. Coverage usually is upstream with fuel distributors facing compliance obligations.

Maritime

Emissions from fossil fuel combustion for maritime transport, usually referring to voyages starting and ending within the jurisdiction. Systems may include (a portion of) emissions of voyages starting or ending outside of the jurisdiction.

Buildings

Emissions originating from buildings. With upstream coverage, distributors of heating fuels face compliance obligations and all consumers are exposed to the carbon price. With downstream coverage, emissions of large buildings are regulated. In this case, emissions originating from other sectors (e.g., power production) may also be attributed to buildings.

Forestry

Emissions and removals resulting from forest land use, including forest management/ harvest, deforestation and re/afforestation activities.

Waste

Emissions from waste disposal and management (e.g., methane from anaerobic decomposition in landfills).

Fuel use in agriculture and/or forestry

Emissions resulting from fuels burned for energy in the agriculture and/or forestry sectors.

2. The agriculture sector is also a major source of biogenic emissions. Currently, some ETSs (e.g., California) allow for offset projects in the sector.

3. In most cases, emissions coverage of the different systems corresponds to the value that is reported in the relevant factsheets. In the case of the Chinese pilots, the coverage was calculated by adding the most recent reported caps of all the pilots and dividing that number by the sum of the most recent reported emissions in the pilots. Note that sectoral coverage differs across Chinese pilots as indicated in the relevant slice of the infographic. A limited number of heat plants which are below the inclusion threshold in the China National Carbon Market continue to be covered under Chinese pilots where applicable.

4. In the case of RGGI, emissions coverage is the result of comparing the emissions covered by the ETS with the aggregate emissions in member states. Aggregate emissions data for the RGGI states are taken from the previously published "consolidated data for all states" by the Environmental Protection Agency (EPA 2024. URL: **https://www.epa.gov/ghgemissions/state-ghg-emissions-and-removals**). While each state publishes official inventory data and the values published by the EPA should not be viewed as official state data, the EPA estimates are presented here to ensure the methodological consistency of data collection and aggregation for inventory categories across RGGI states, as well as to ensure a common reporting year in the data. There may be differences between the EPA estimates and the official state inventories.

DIFFERENT DIMENSIONS OF ETS

1. **Coverage:** The figure indicates the percentage of the jurisdiction's total GHG emissions that is covered by the ETS. The data are taken from the factsheets and refer to the latest emissions coverage figures available for each system. Additional jurisdiction-specific information on coverage figures can be found in the relevant factsheet.

2. **Allowance price:** The figure provides the average USD price over 2025 per tonne of CO_2e. Where available, the weighted average of settlement prices at auctions that took place during the year or the weighted average of settlement prices of auctions of that vintage year are used. Where necessary, local currency prices were converted using the annual average exchange rate as published in the IMF Financial Statistics. For additional information on sources of allowance prices and exchange rates see **https://icapcarbonaction.com/en/documentation-allowance-price-explorer**.

3. **Auction share:** This figure indicates the share of the cap's allowances that is not allocated for free but must be acquired at an auction for the latest year where information is available. For most systems, and depending on availability of information, this value is obtained by dividing the allowances that have been offered for auction of a given vintage year by the cap of that year. Otherwise, this value is obtained from the corresponding factsheet. The consignment auctions in California, Québec, or Washington are not included in calculating the auction share. Additional jurisdiction-specific information on auction share figures can be found in the relevant factsheet.

4. **Offset use:** This figure provides the share of a compliance entity's obligations which can be met using offsets for the latest year where information is available. Additional jurisdiction-specific information on offset use figures can be found in the relevant factsheet.

ALLOWANCE PRICES AND REVENUES

1. An allowance is an instrument that permits the holder to emit one tonne of CO_2e in the jurisdiction(s) that accept(s) it for compliance. However, allowances from different systems cannot be treated as a single commodity because of differences in system design. Allowance prices are not directly comparable across systems.

2. Except for the Canada Carbon Pollution Price Schedule and the Alberta SGER/CCIR/TIER, the upper right panel of the infographic displays the daily allowance prices in 2025, while the upper left panel presents the monthly average allowance prices between January 2014 and December 2025 using data from the ICAP Allowance Price Explorer. Prices in the upper right panel are the daily observations in the systems with secondary market data, as well as the clearing prices in the systems with primary market data on the day of the auction/sale. In the upper left panel, daily observations are averaged over the calendar month. For additional information on sources of allowance prices and exchange rates see **https://icapcarbonaction.com/en/documentation-allowance-price-explorer**.

3. The data for the UK, Québec, California, RGGI, and Washington are from the primary market. For these systems, the observations from two successive auctions are connected linearly. The data for the remaining systems, except Germany, the Canada Carbon Pollution Price Schedule and the Alberta SGER/CCIR/TIER, are secondary market prices. They reflect settlement prices and do not capture intra-day trade variation. German ETS allowances are sold at a fixed price in the initial years of the system. The fixed price increases annually until 2026 when trading begins. As with the Canada Carbon Pollution Price Schedule and the Alberta SGER/CCIR/TIER, variation in the series reflect the changes in the local currency-USD exchange rate.

4. RGGI allowance prices are in short tons and have been converted to metric tonnes for the purposes of this infographic.

5. Where allowances have a limited vintage, the time series data compiles these vintages in a way that reflects the compliance cycle.

6. The price range for the Chinese Pilot ETSs was determined as follows: 1) We computed the monthly average prices in USD; 2) For a given month, we determined the minimum and maximum prices across Chinese Pilots; 3) We applied a six-month moving average to smooth out the variability in maximum and minimum prices; 4) We shaded the region between the smooth series.

7. Auction revenues for the 24 systems (including seven Chinese pilots reported as a group) that are depicted or reported were calculated using data from the European Commission; ICE and UK Department for Business, Energy & Industrial Strategy; SinoCarbon Innovation and Investment; German Environment Agency; Swiss Emissions Registry; California Air Resources Board; Québec Ministry of Sustainable Development, Environment, and Fight Against Climate Change; Nova Scotia Environment; Regional Greenhouse Gas Initiative; New Zealand Ministry for the Environment; Massachusetts Department of Environmental Protection; the website of the Korea Exchange (KRX); the state of Washington's Department of Ecology; the Austrian Federal Ministry of Finance; Environment and Climate Change Canada; Department of Environment and Climate Change of Newfoundland and Labrador; Ministry of Environment of Saskatchewan; Alberta Environment and Protected Areas; as well as from the factsheets of Montenegro, the New Brunswick OBPS, and Ontario EPS (links available upon request, info@icapcarbonaction.com).

8. Auction revenue for the EU ETS includes revenue from the domestic aviation sector.

9. For the California and Québec cap-and-trade systems, the proceeds from consignment auctions are excluded.

10. For the Québec cap-and-trade system, joint auctions involve currency conversion for part of the proceeds. The rate and transaction fees on the date of conversion can affect the amount deposited into the Green Fund. As a result, the product of the number of permits sold and the settlement price may slightly differ from the actual amount deposited.

11. The Massachusetts quarterly reports are published by Potomac Economics, which is the official market monitor for the Massachusetts Department of Environmental Protection.

12. All allowance price data are in USD and are converted using the average exchange rate for the corresponding month as reported by the IMF. Revenue data are in USD and are converted using the average exchange rate for the corresponding year as reported by the IMF.

USE OF ETS REVENUE

1. The revenue use categories correspond to those specified in the factsheets. Possible categories are General budget (including debt reduction), Fiscal reform, Climate mitigation, Low-carbon innovation, Pursuit of other development objectives, Assistance for individuals, households and businesses, and International use. Fiscal reform and International use were not applicable in any jurisdiction, which is why these categories are excluded from the graph.

2. Note that jurisdictions without auctioning generate no revenues and are thus excluded from this graph.

3. Montenegro is included in the graph as having earmarked its revenues, though no revenues had been collected in 2025, as the system has allocated revenues in the past and the 2025 0% auction share is the result of a temporary closure of the only remaining installation. In the Canada OBPS, proceeds are returned to provinces of origin. Voluntary adopters receive funds for discretionary use; non-voluntary jurisdictions receive proceeds earmarked for low-carbon technology deployment.

INTENSITY-BASED VS ABSOLUTE CAPS

1. Whenever available, we use the official and most recent cap data for each system to inform the calculation of covered emissions by each system type. When those data are unavailable or when systems operate without a cap, the values or estimates of covered emissions in the regulated sectors are used instead.

2. The Austrian ETS does not currently institute intensity-based emissions limits nor an absolute cap.

3. The Colorado GEMM Regulation contributes 1.8 Mt to the intensity-based total and 2.0 Mt to the absolute cap total in accordance with the most recent coverage estimates which are displayed in the factsheet.

4. The German ETS is included in the absolute cap category, but during its introductory phase, the system applies a fixed price or price corridor, making the cap flexible.

UPTAKE OF ETS IN G20 COUNTRIES

1. Emissions coverage of ETSs currently in force, and the aggregate global emissions value, are determined in accordance with points one and five, respectively, of the infographic "Global Expansion of ETS" note. They correspond to the values of 2024 emissions.

2. To ensure consistency in this infographic, aggregate emissions of G20 countries are calculated in a similar way to the aggregate global emissions: they refer to GHG emissions in CO_2e excluding LULUCF and are obtained from EDGAR (Emissions Database for Global Atmospheric Research) Community GHG Database (a collaboration between the European Commission, Joint Research Centre (JRC), the International Energy Agency (IEA), and comprising IEA-EDGAR CO_2, EDGAR CH4, EDGAR N2O, EDGAR F-GASES version EDGAR_2025_GHG (2025) European Commission. EDGAR website (**https://edgar.jrc.ec.europa.eu/dataset_ghg2025**). They correspond to the values of 2024 emissions.

3. For the Japan ETS, which started operating in 2026 and for which no official coverage values are available, the coverage value is based on official estimates.

4. For the India ETS, which started operating in 2026 and for which no official coverage values are available, an estimate of covered emissions is used. The estimate for current emissions is based on the final emissions intensity targets that have been notified by MoEFCC as of February 2026 and includes the following sectors: aluminum, chlor-alkali, cement, pulp and paper, petrochemicals, petroleum refining, and textiles. The estimate for the expected coverage does include an estimate for the iron and steel sector, for which no final emissions intensity targets have been notified as of February 2026.

5. When coverage values of ETSs under development or under consideration are known, those values are used as a fixed value in both the "(low)" and "(high)" coverage estimates.

6. The "(low)" and "(high)" projected coverage in the infographics indicate estimates of the expected coverage of the ETS currently under development or under consideration. When information on sectoral coverage was available, those sectors were used to inform the estimated coverage. When no information on sectoral coverage was available, the estimated coverage assumed that the ETS would cover Energy (i.e., emissions from the combustion of fossil fuels) and Industrial Processes emissions. They are presented as indicative values with the best available information as of the editorial cut off of the Status Report.

7. For the ETSs currently under development or under consideration, the "(low)" estimated coverage corresponds to 40% of the aggregate emissions of the sectors assumed to be covered by the ETS. For the national ETSs, values correspond to 2024 emissions from the 2025 EDGAR dataset. For subnational ETSs, the most recent domestic inventory values are used.

8. For the ETSs currently under development or under consideration, the "(high)" estimated coverage corresponds to 60% of the aggregate emissions of the sectors assumed to be covered by the ETS. For the national ETSs, values correspond to 2024 emissions from the 2025 EDGAR dataset. For subnational ETSs, the most recent domestic inventory values are used.

OFFSET CREDIT ELIGIBILITY IN EMISSIONS TRADING WORLDWIDE

1. Offsets represent emissions reductions and emissions removals resulting from projects undertaken outside the scope of an ETS. “Domestic offsets” are generated from projects within the geographical boundaries of the ETS jurisdiction or in a linked ETS, while “international offsets” originate from projects outside of them.

2. The share of a compliance entity’s obligations that can be met using offsets for the latest year is derived from the factsheets, where available. Additional jurisdiction-specific details on offset use can be found in the relevant factsheet.

OFFSET CREDIT DEMAND POTENTIAL IN EMISSIONS TRADING

1. The potential size of compliance demand for offsets in a jurisdiction is estimated by multiplying the total GHG emissions covered by the jurisdiction’s ETS by the maximum allowable share of compliance obligations that can be met using offsets. In systems where entities must surrender compliance units for only a part of their covered emissions (i.e., Alberta TIER, Canada Federal OBPS, Australia Safeguard Mechanism) potential demand is calculated by multiplying the maximum allowable share with the most recent reported value of the total compliance obligations in the system. In Shenzhen Pilot ETS, offset use is restricted to 20% of the difference between a regulated entity’s verified emissions and the free allocations it receives. Due to data limitations, it is not possible to estimate the potential size of compliance demand in this pilot.

LIST OF ACRONYMS

AB	Assembly Bill
ACCIP	Alberta Carbon Capture Incentive Program
ACCU	Australian Carbon Credit Unit
AFOLU	Agriculture, Forestry and Land Use Change
ANCE	Autoridad Nacional de Comercio de Emisiones
ANSI	American National Standards Institute
APCD	Air Pollution Control Division
APCR	Allowance Price Containment Reserve
AQCC	Colorado Air Quality Control Commission
AQHDIA	Air Quality and Health Disparities Improvement Account
ARP	Auction Reserve Price
AUD	Australian Dollar
BAECT	Best Available Emissions Control Technology
B.C.	British Columbia
BCCRR	British Columbia Carbon Registry Regulation
BCER	Beijing Certified Emission Reduction
BCROP	British Columbia Refrigerants Offset Protocol
BEA	Beijing Carbon Emission Allowance
BEE	Bureau of Energy Efficiency
BEHG	Fuel Emissions Trading Act
BEHV	Fuel Emissions Trading Ordinance
BMP	Best Energy Management Practices
BMF	Austrian Federal Ministry of Finance
BMUKN	German Federal Ministry for the Environment, Climate Action, Nature Conservation and Nuclear Safety
CAD	Canadian Dollar
CARB	California Air Resources Board
CATS	Credit and Tracking System
CBAM	Carbon Border Adjustment Mechanism
CCA	Climate Commitment Act
CCA	Climate Commitment Account
CCA	Climate Change Authority
CCC	Climate Change Committee
CCC	Climate Change Commission
CCC	Carbon Credit Certificate
CCER	China Certified Emissions Reduction
CCI	Community Climate Investment
CCIR	Carbon Competitiveness Incentive Regulation
CCM	Cost Containment Mechanism
CCR	Cost Containment Reserve
CCSP	Carbon Capture and Sequestration Protocol
CCTS	Carbon Credit Trading Scheme
CDM	Clean Development Mechanism
CEA	China Emission Allowance
CEEX	China Emissions Exchange
CEMS	Continuous Emissions Monitoring Systems
CER	Clean Energy Regulator
CERA	Carbon Emissions Reduction Account
CERC	Central Electricity Regulatory Commission
CERF	Climate Emergency Response Fund
CFC	Chlorofluorocarbons
CFPP	Coal-fired Power Plant
CFR	Code of Federal Regulations
CHUs	Swiss Emissions Allowances
CH_4	Methane

CIA	Climate Investment Account
CIACA	Collaborative Instruments for Ambitious Climate Action
CIIP	CleanBC Industrial Incentive Program
CITSS	Compliance Instrument Tracking System Service
CLCPA	Climate Leadership and Community Protection Act
CLEF	Carbon Leakage Exposure Factor
CMEA	Coordinating Ministry for Economic Affairs
CNCCMC	National Council for Climate Change and Carbon Market
CO_2	Carbon Dioxide
CO_2e	Carbon Dioxide Equivalent
COATS	CO_2 Allowance Tracking System
COCOSCE	Consultative Committee of the Emissions Trading System
COP	Conference of the Parties
CORSIA	Carbon Offsetting and Reduction Scheme for International Aviation
CPI-U	Consumer Price Index for All Urban Consumers
CPP	Climate Protection Program
CPS	Carbon Price Support
CQCER	Chongqing Certified Emission Reduction
CRVE	Certificado de Redução ou Remoção Verificada de Emissões (Certificate of Verified Emission Reduction or Removal)
CVM	Comissão de Valores Mobiliários (Securities and Exchange Commission)
C&T	Cap-and-Trade
DCCE	Department of Climate Change and Environment
DCCEEW	Department of Climate Change, Energy, the Environment and Water
DEBS	Direct Environmental Benefits to the State
DEC	Department of Environmental Conservation
DEHSt	Deutsche Emissionshandelsstelle (German Emissions Trading Authority)
DEC	Department of Environmental Quality
DEP	Department of Environmental Protection
DESNZ	Department for Energy Security and Net Zero
DfT	Department for Transport
DHC	District Heating and Cooling
DNA	Designated National Authority
DNG	Direct-Use Natural Gas
DoCC	Directorate of Climate Change
DPKK	National Carbon Market Policy
EAF	Electric Arc Furnace
EBeV 2030	Emissions Reporting Ordinance 2030
ECCC	Environment and Climate Change Canada
ECR	Emissions Containment Reserve
EEA	European Economic Area
EEB	Ecology and Environment Bureau
EEC	Excess Emissions Charge
EERS	Emissions and Energy Reporting System
EEU	Excess Emissions Units
EEX	European Energy Exchange
EITE	Emissions-Intensive and Trade-Exposed
EMCRA	Emissions Management and Climate Resilience Act
EMRA	Energy Market Regulatory Authority
EOPR	Emission Offset Project Regulation
EPA	Environmental Protection Agency
EPC	Emission Performance Credit
EPCR	Emission Performance Credit Registry
EPE	Electric Power Entity
EPP	Emissions Performance Program
EPS	Emissions Performance Standards
EPU	Emissions Performance Unit
EQB	Environmental Quality Board
EQC	Environmental Quality Commission
ESR	European Effort Sharing Regulation
ETS	Emissions Trading System

EU	European Union
EUA	European Union Allowances
EU ETS	European Union Emissions Trading System
EU ETS 2	European Union Emissions Trading System 2
EXIST	Energy Exchange Istanbul
FCEF	Future Clean Electricity Fund
FFCER	Forestry Certified Emission Reduction
FJEA	Fujian Emission Allowance
FOEN	Federal Office for the Environment
FPMA	Federal Power Marketing Administrations
FSB	Facility-specific benchmark
FY	Fiscal Year
G20	Group of Twenty
GBP	British Pound
GDEE	Department of Ecology and Environment of Guangdong Province
GDP	Gross Domestic Product
GEMM	Greenhouse Gas and Energy Management for Manufacturing regulation
GGERR	Greenhouse Gas Emission Reporting Regulation
GGIRCA	Greenhouse Gas Industrial Reporting and Control Act
GGR	Greenhouse Gas Removal
GHG	Greenhouse Gas
GIR	Greenhouse Gas Inventory and Research Center
$GtCO_2e$	Gigatonne of Carbon Dioxide Equivalent
GX	Green Transformation
HB	House Bill
HBEA	Hubei Emissions Allowance
HFCs	Hydrofluorocarbons
HMT	His Majesty's Treasury
HPB	High-performance benchmark
HSE	Hospital and Small Emitter

ICAP	International Carbon Action Partnership
ICAO	International Civil Aviation Organization
ICE	Intercontinental Exchange
ICM	India Carbon market
IDX	Indonesia Stock Exchange
IDXCarbon	Indonesian Carbon Exchange
JCM	Joint Crediting Mechanism
JI	Joint Implementation
JRC	Joint Research Centre
KAN	Komite Akreditasi Nasional
K-ETS	Korea Emissions Trading Scheme
K-MSR	Market Stability Reserve (Korea)
KAU	Korean Allowance Unit
KAZ ETS	Kazakhstan Emissions Trading System
KCU	Korean Credit Unit
KOC	Korean Offset Credits
KRW	South Korean Won
KRX	Korea Exchange
KTF	Klima- und Transformationsfonds
KZT	Kazakhstani Tenge
LCEIA	Low Carbon Economy Investment Act
LULUCF	Land Use, Land-Use Change and Forestry
MAE	Ministry of Agriculture and Environment
MCCC	Maryland Commission on Climate Change
MDE	Maryland Department of the Environment
MEE	Ministry of Ecology and Environment
MEMR	Ministry of Energy and Mineral Resources
METI	Ministry of Economy, Trade and Industry
MINAMBIENTE	Ministry of Environment and Sustainable Development
MMA	Ministry of Environment

MoEFCC	Ministry of Environment Forest, and Climate Change
MOENV	Ministry of Environment
MoF	Ministry of Finance
MoP	Ministry of Power
MOU	Memorandum of Understanding
MRR	Monitoring and Reporting Regulation
MRR	Mandatory Reporting of Greenhouse Gas Emissions
MRV	Monitoring, Reporting and Verification
MSR	Market Stability Reserve
$MtCO_2$	Million Tonnes of Carbon Dioxide
$MtCO_2e$	Million Tonnes of Carbon Dioxide Equivalent
MYMP	Multi-Year Monitoring Period
N_2O	Nitrous Oxide
NCCC	National Committee on Climate Change Policy
NCSA	Natural Climate Solutions Account
NCSC	National Center for Climate Change Strategy and International Cooperation
NDC	Nationally Determined Contribution
NDRC	National Development and Reform Commission
NER	New Entrants' Reserve
NEHG	Nationales Emissionszertifikatehandelsgesetz
NEK	Nilai Ekonomi Karbon
nETS	Nationales Emissionshandelssystem
NF_3	Nitrogen Trifluoride
NGER	National Greenhouse and Energy Reporting
NRES	Ministry of Natural Resources and Environmental Sustainability
NSCICM	National Steering Committee for the Indian Carbon Market
NYCI	New York's Cap-and-Invest Program
NYCI	New York Climate Initiative
NYSERDA	New York State Energy Research and Development Authority
NZ ETS	New Zealand Emissions Trading Scheme
NZD	New Zealand Dollar
NZU	New Zealand Unit
OBPS	Output-Based Pricing System
OJK	Financial Services Authority
OTC	Over-the-counter
PACER	Pennsylvania Climate Emissions Reduction Act
PAT	Perform, Achieve and Trade
PFC	Perfluorocarbon
PHCER	Carbon Inclusive Certified Emission Reduction
PLN	Perusahaan Listrik Negara (State Electricity Company)
PMI	Partnership for Market Implementation
PNCTE	Programa Nacional de Cupos Transables de Emisión de Gases de Efecto Invernadero (National Program of Tradable Greenhouse Gas Emission Quotas)
PPA	Power Purchase Agreement
PSS	Performance Standards System
PTBAE	Persetujuan Teknis Batas Atas Emisi (Technical Approval of Upper Emission Limits)
PUC	Public Utility Commission
REDD+	Reducing Emissions from Deforestation and Forest Degradation
RENAMI	Registro Nacional de Acciones de Mitigación
RENARE	Registro nacional de reducción de emisiones de GEI (National registry of GHG emissions reductions)
RENE	National Emissions Registry
RSPEDE	Règlement concernant le système de plafonnement et d'échange de droits d'émission de gaz à effet de serre (Regulations concerning the cap-and-trade system for greenhouse gas emission allowances)
RGGI	Regional Greenhouse Gas Initiative
SAF	Sustainable Aviation Fuel
SAM	Supply Adjustment Mechanism
SB	Senate Bill
SBCE	Brazilian Greenhouse Gas Emissions Trading System
SCC	Standards Council of Canada

SCE	Sistema de Comercio de Emisiones
SCF	Social Climate Fund
SEEE	Shanghai Environmental and Energy Exchange
SEMARNAT	Secretaría de Medio Ambiente y Recursos Naturales
SET	Stock Exchange of Thailand
SF_6	Sulfur Hexafluoride
SGER	Specified Gas Emitters Regulation
SGGR	Specified Gas Reporting Regulation
SHCER	Shanghai Carbon Emission Reduction
SHEA	Shanghai Emission Allowance
SHEAF	Shanghai Emission Allowance Forward
SISCLIMA	National Climate Change System
SMA	Superintendency of the Environment
SMC	Safeguard Mechanism Credit
SRN-PPI	Sistem Registri Nasional Pengendalian Perubahan Iklim (National Registry System for Climate Change Management)
SPE-GRK	Sertifikat Pengurangan Emisi Gas Rumah Kaca (Greenhouse Gas Emission Reduction Certificate)
SRUK	Sistem Registri Unit Karbon (Carbon Unit Registry System)
STTCER	Tan Pu Hui local offset credits in Shenzhen
SZA	Shenzhen Allowance
S-GDEA	Special Guangdong Emission Allowance
tce	tonnes of coal equivalent
tCO_2	Tonne of Carbon Dioxide
tCO_2e	Tonne of Carbon Dioxide Equivalent
TGO	Thailand Greenhouse Gas Management Organization
TIER	Technology Innovation and Emissions Reductions Regulation
TJ	Terajoule
TMG	Tokyo Metropolitan Government
TMS	Target Management System
TNAC	Total Number of Allowances in Circulation
TPP	Pljevlja power station
TR ETS	Türkiye National Emissions Trading Ssytem
TÜRKAK	Turkish Accreditation Agency
UBA	German Environment Agency
UEF	Unique Emissions Factor
UK	United Kingdom
UK ETS	UK Emissions Trading Scheme
UKA	UK Allowance
UKAS	UK Accreditation Service
UNFCCC	United Nations Framework Convention on Climate Change
USD	United States Dollar
USE	Ultra-Small Emitter
VR	Verification Regulation
WCI	Western Climate Initiative

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