



International  
Carbon Action  
Partnership

# EMISSIONS TRADING WORLDWIDE

EXECUTIVE SUMMARY

STATUS REPORT 2024



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## INTERNATIONAL CARBON ACTION PARTNERSHIP STATUS REPORT 2024

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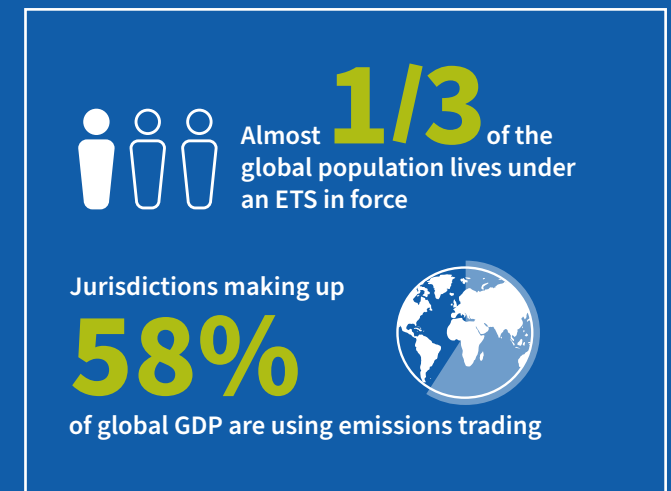
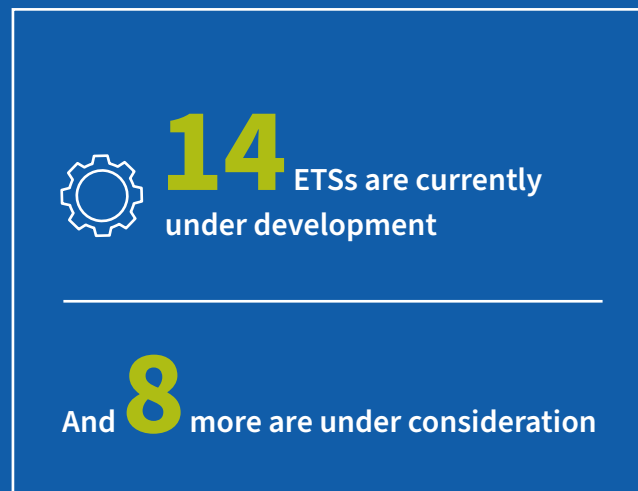
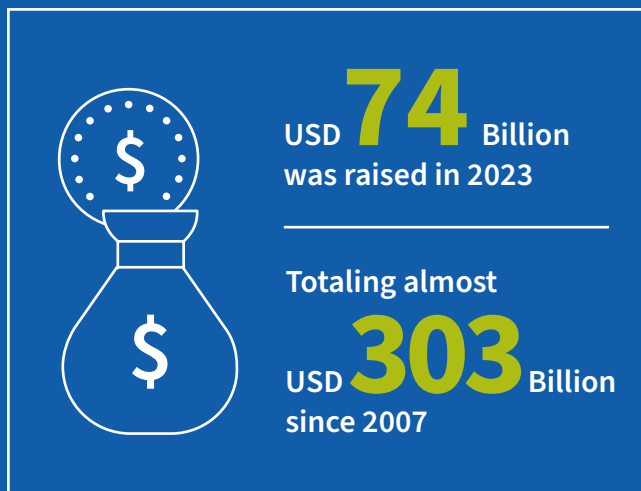
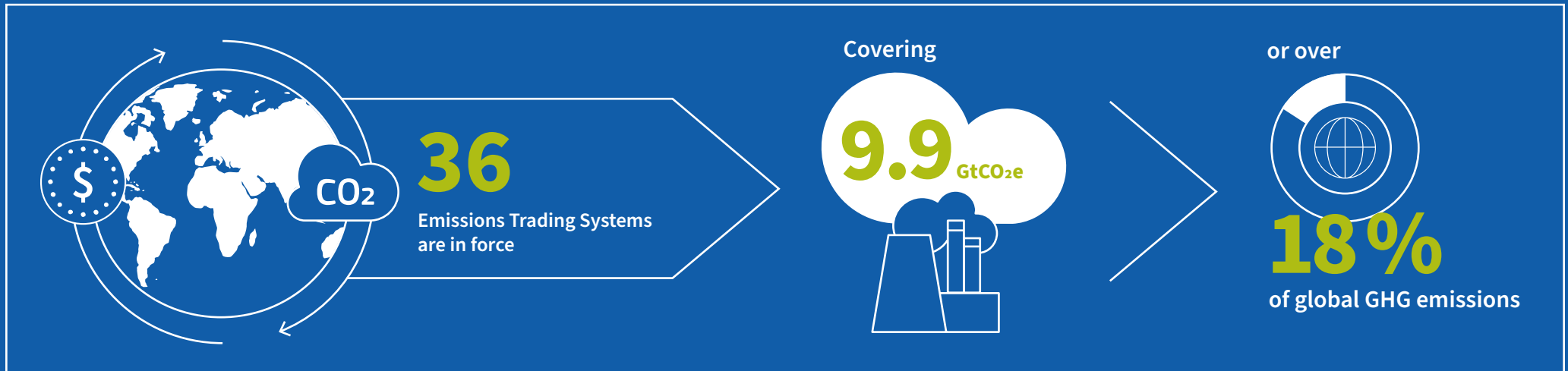
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# EXECUTIVE SUMMARY

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# EMISSIONS TRADING IN NUMBERS

As of 2024 there are:



# TRENDS AND OUTLOOK

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

**A**fter experiencing the hottest year on record in 2023, our planet crossed the 1.5°C threshold on a 12-month average for the first time in January 2024. While the world grapples with the escalating impacts of climate change, the urgent need for effective mitigation strategies has never been clearer. As governments around the world move to implement climate policy frameworks, emissions trading systems (ETS) emerge as pivotal tools in the global fight against climate change, offering a market-based approach to reducing greenhouse gas emissions.

### **MORE AND MORE GOVERNMENTS WORLDWIDE ARE CHOOSING TO ADOPT ETSs, BUT CHALLENGES REMAIN**

Governments worldwide are increasingly embracing emissions trading as a key part of their policy response to the climate crisis. Currently, 36 systems are in force globally, with an additional 22 in various stages of consideration and development. The systems currently in force collectively cover 18% of global GHG emissions. Jurisdictions making up 58% of global GDP have an ETS in place and roughly one-third of the global population lives under an ETS in force.

The global momentum behind the development and implementation of new ETSs is particularly striking in emerging economies. In Latin America, Brazil has taken significant steps by proposing a draft law for the implementation of an ETS, while Argentina mulls the adoption of a carbon market for its energy sector. Mexico is operating a pilot program, which is expected to move to full implementation over the course of 2024. Chile and Colombia have gained experience from the implementation of carbon taxes and are now at different stages of considering and preparing for the implementation of an ETS.

Across the Asia-Pacific region, India has outlined a pathway towards establishing a carbon market framework, which includes a compliance ETS alongside voluntary crediting activities, while Indonesia has recently launched an ETS covering the power generation sector. Vietnam is planning to launch an ETS pilot in the coming years and several other countries in the region, including Malaysia, Pakistan, the Philippines, and Thailand, are at different stages of considering or developing an ETS. Additionally, Türkiye is making plans to initiate a pilot ETS over the course of 2024, further emphasizing the global momentum towards emissions trading.

Similarly, developed economies have demonstrated their commitment to emissions trading. Canada, for example, has unveiled plans for a federal cap-and-trade system specifically designed for the oil and gas industry, complementing the output-based pricing systems in place at the federal level and in several provinces. Meanwhile, the European Union has announced the introduction of a distinct ETS for buildings, road transport, and additional sectors, complementing the EU ETS coverage. The new system is scheduled to commence operations in 2027. Australia has reformed its climate policy framework, turning the Safeguard Mechanism into a baseline-and-credit system, and Japan has launched the GX-ETS, a voluntary system expected to transition to a compliance ETS in the coming years.

## ***"The global momentum behind the development and implementation of new ETSs is particularly striking in emerging economies"***

At the subnational level in the US, Washington State launched a cap-and-invest program in 2023, New York State and Colorado are actively working to develop and launch new systems, and Maryland is considering an economy-wide system.

Despite the notable progress, setbacks have arisen due to complex political settings, as evidenced by challenges in the Regional Greenhouse Gas Initiative, in Pennsylvania, North Carolina, and Oregon. These setbacks underscore the importance of finding effective solutions to emerging challenges, especially in fostering social acceptance of carbon pricing. Overcoming these obstacles will be pivotal in achieving the goal of net zero by mid-century.

### **INNOVATIVE SYSTEM DESIGNS ARE EMERGING**

The design and development of new ETS is giving rise to a generation of hybrid and innovative systems, sometimes deviating

from the traditional cap-and-trade blueprint. This shift showcases the adaptability of emissions trading to diverse challenges and opportunities specific to geographical, economic, and political contexts. Notably, intensity-based emissions trading systems are on the rise, including the Chinese national ETS, and the output-based pricing systems in place in Canada both at the federal and subnational level, with several others being developed or considered.

This new wave of ETSs also incorporates fresh design elements, blending various carbon pricing instruments as seen in Indonesia's "cap-tax-and-trade system" or mixing compliance and voluntary features, as seen in Japan and India, where voluntary systems are implemented as a first step towards the development of compliance ETSs over time.

In response to these transformations, ICAP has broadened the scope of its annual Status Report to reflect the evolving emissions trading landscape. While maintaining focus on compliance systems, this year's report includes a greater number of intensity-based systems and other ETS types not previously covered. The carbon pricing landscape is further explored in the Infographics section. These diverse variations play a crucial role in promoting ETS uptake in new geographies by tailoring and adapting the concept to local priorities and circumstances.

### **ESTABLISHED ETSS ARE IMPROVING, EXPANDING AND ALIGNING WITH NET-ZERO TARGETS**

In 2023, governments pledged not only to introduce new ETSs but also to strengthen existing ones, aligning them with the goal of achieving net zero by mid-century. Examples abound, ranging from China's implementation of stricter benchmark values for coal-fired power generation to ongoing consultations and reforms in California, Québec, the UK and South Korea, among others. Perhaps the most notable example of this sweeping wave of reforms to global ETSs is the finalization of the European Union's comprehensive "Fit for 55" reforms in the first half of 2023, which resulted in an extensive overhaul of the EU ETS. The reform package included a steeper reduction rate, the expansion to the maritime sector and a strengthened Market Stability Reserve, among other important elements.

Reforms to these systems anticipate some of the key themes that will characterize the ETS discussion in the coming years, chief among them alignment with net-zero targets and the role of emissions trading in a net zero context. Net zero alignment holds deep ramifications for all dimensions of an ETS. The key areas that regulators around the world are exploring include: the role of emissions trading in a net zero policy mix; the role (if any) of removal credits and negative emissions; cap setting, including the design and functioning of positive, zero, net-zero and net-negative caps; market dynamics, market stability and liquidity under these cap scenarios; and the future of carbon leakage and competitiveness protection.

## ***"Governments pledged not only to introduce new ETSs but also to strengthen existing ones"***

An additional key dimension that belongs to the list above is sector coverage. The role that an ETS can play in a net-zero scenario directly depends on what sectors it covers and whether those sectors are expected to have residual emissions, zero emissions or negative emissions. Not surprisingly, ETS sectoral expansion is a key focus for governments globally. In Europe, the “Fit for 55” reforms include provisions for the inclusion of maritime transport into the EU ETS and for the establishment of a separate EU ETS 2 to cover emissions from buildings, road transport and additional sectors not covered by the original system. The UK is also considering bringing additional sectors into its ETS, likely beginning with maritime transport. Sectoral expansion is also a priority in China, marking the next step in the development of the national ETS. Similar examples can be found in North America too.

### **PRICES HOLD, GUARANTEEING ANOTHER YEAR OF RECORD REVENUES**

Against a backdrop of global economic and political instability, allowance prices showed different trends in different systems, as displayed in the Infographics section, marking no particular trend

overall. Allowances prices in the EU and UK ETSs reached record levels in the first half of 2023 to then decrease, more markedly in the UK and in the EU, in the second half. North American systems, such as those in place in California, Québec and Washington State, instead showed overall price gains over the course of the year. Price developments in other systems worldwide did not show significant upwards or downward trends, remaining unvaried overall. It is also worth noting that the post-pandemic era has been characterized by significantly higher inflation rates in many jurisdictions than in the past. This may have distorted the carbon price signal in jurisdictions and introduced more noise around it since the allowance price values included in this report are nominal.

Relatively high price levels in several systems, coupled with an increasing use of auctioning as an allocation method, resulted in yet another record year for the collection of auctioning revenues. Global ETS revenues in 2023 reached USD 74 billion, as shown in the Infographics section. Although most of these revenues come from systems with higher ETS prices and broader emissions coverage, notably from the EU ETS, additional drivers are also contributing to the overall increase. For instance, there is a growing preference for auction-based allocation methods compared to free allocation in the design of new systems. The US state of Washington adopted auction-based allocation from the inception of its system, and the reinvestment of auctioning proceeds is so central that the system is labelled as “cap-and-invest”. This is not an isolated example, but it is rather a recurring feature in new systems. The EU proposed a ‘Social Climate Fund’ to be populated with auctioning proceeds as an integral part of the EU ETS 2 and New York State plans to adopt a similar auction-based approach in its forthcoming program.

Emissions trading revenues globally provide a crucial funding source for additional mitigation efforts and aid to affected communities impacted by high costs of living. Jurisdictions worldwide, from California to New Zealand, allocate ETS proceeds to low-carbon technology development and supporting at-risk populations. The EU has over a decade of experience with using revenue proceeds to fund innovation, the modernization of infrastructure and additional mitigation efforts. Canada and Austria have implemented redistribution mechanisms, directing almost all ETS revenue back to households for direct financial relief.



This trend is expected to continue and expand in coming years, as ETS revenues are set to play a key role in compensating for the distributional impacts of the carbon price and in maintaining public support for ETSs.

### ADVANCING THROUGH INTERNATIONAL COOPERATION

Looking ahead, the imperative to reach net-zero emissions will require novel approaches to the design and functioning of ETSs. Border carbon adjustment measures could lead to an expansion of carbon pricing initiatives, particularly in exporting countries. The European Union's Carbon Border Adjustment Mechanism (CBAM) is now operational and might begin a trend whereby the EU's trade partners adopt new, or enhance their own, domestic carbon pricing instruments to reduce their exposure. There is also interest in border carbon adjustments in other key countries, with the UK, Australia, and the US making strides towards implementing these measures.

## ***"Emissions trading offers a framework to foster cooperative efforts among jurisdictions"***

Emissions trading offers a framework to foster cooperative efforts among jurisdictions, delivering mitigation impact and additional benefits well beyond the system's boundaries. This is evident in successful ETS linkages such as the EU ETS-Swiss connection, the Tokyo-Saitama collaboration within Japan, and the cross-border partnership between California and Quebec, which has already operated for a decade. Newly launched or underway systems, such as those in Washington and New York, are also eyeing linkage prospects with other ETSs as one of the key next steps in their development.

Another avenue to broaden the reach of an ETS is the use of offsets credits. There is a renewed interest in this space, with several new or upcoming systems, from Indonesia to Brazil, and from India to China, eyeing the inclusion of offset credits as part of their system design. Differently from the heyday of the CDM use in the EU ETS, most of

these developments focus on domestic credits only. Out of all of the systems currently in operation that allow for the use of offset credits, the Korean ETS is the only one that accepts international credits. At the same time, most of the up-and-coming systems that expressed the intention to allow for the use of offset credits are likely to prioritize domestic credits.

Going forward, Article 6 of the Paris Agreement will represent the main avenue to generate and transfer offset credits that can be used in compliance systems internationally, but delays in its implementation might explain, together with other policy priorities, the current predominant focus on domestic credits. If these challenges are overcome, Article 6 can also play an important role in sourcing carbon removals internationally, especially for those jurisdictions that have limited options within their borders.

Further international cooperation is indispensable to effectively address emerging challenges, ensure a just transition, communicate the benefits of carbon pricing, and align systems with net-zero goals. The carbon pricing landscape is currently experiencing a significant uptick in collaborative efforts through initiatives like the Global Carbon Pricing Challenge the World Bank's Partnership for Market Implementation, the Call to Action for Paris-aligned Carbon Markets and platforms such as Carbon Pricing in the Americas.

In this dynamic context, ICAP plays a pivotal role by actively fostering international collaboration on various emerging topics. These include exploring how ETSs can align with and expedite progress towards net-zero goals, conducting thorough investigations into design options to safeguard against carbon leakage and maintain competitiveness, and exploring how to maintain and enhance support for emissions trading in society. Through these multifaceted efforts, ICAP aims to make a substantial contribution to the effectiveness of emissions trading in paving the way towards a net-zero future.

# A YEAR OF ETS DEVELOPMENTS

## A BRIEF OVERVIEW OF THE KEY UPDATES FROM EACH JURISDICTION



### EUROPE AND CENTRAL ASIA

**AUSTRIA** Austria launched a new ETS for fossil fuels not already covered by the EU ETS in 2022. In 2023, covered entities started surrendering allowances quarterly, funding a “Regional Climate Bonus” introduced to offset potential price increases. The bonus provides lump-sum payments based on residents’ proximity to essential amenities and public transport accessibility.

**EUROPEAN UNION** The EU ETS continues to be the largest system in force, in terms of trading volume and value. In the first half of 2023, the EU adopted important reforms of the EU ETS framework as part of the “Fit for 55” package, to align the system with the bloc’s 2030 climate target of at least 55% net emissions reductions compared to 1990 levels. These reforms increased the ambition and expanded the scope of the EU ETS to maritime transport, and introduced a new, separate ETS for buildings, road transport and additional sectors.

**GERMANY** Germany launched its national ETS for heating and transport fuels in 2021. By 2023, the government successfully completed all legislative adjustments to the ETS. Starting January 2023, the system expanded to GHG emissions from coal, and from January 2024, it also encompassed fuels from waste incinerators. A late 2023 court decision drastically reduced the national budget, resulting in a greater-than-planned increase in the CO<sub>2</sub> price in January 2024.

**KAZAKHSTAN** Kazakhstan’s ETS entered its 12th year of operation and work is underway to introduce auctions, while benchmarking is the only method of allocating allowances since 2021.

**MONTENEGRO** Although it only began in 2020, Montenegro’s ETS has been affected by several changes of government in the past two years. In addition, two of the three covered installations ceased operations due to high energy prices. In response, the government set up a working group to revise the country’s “Climate Law” and “ETS Decree”. This process is still ongoing, with the adoption of a new Climate Law expected by mid-2024.



**SAKHALIN (RUSSIA)** In 2023, regulated entities submitted their first verified emissions reports for 2022. This formed the basis for setting individual caps for 35 entities in September 2023. This year is expected to mark the start of the system, covering installations in the power, oil, gas, coal mining, heavy industry and transport sectors.

**SWITZERLAND** In November 2023, the EU and Switzerland concluded the 2024 emission allowance transfer arrangements between their linked ETSs, introducing daily transfers from January 2024. After a revision of the “CO<sub>2</sub> Act” failed to pass a referendum in June 2021, the Swiss Parliament extended the current CO<sub>2</sub> Act to 2024.

**TÜRKIYE** In 2023, Türkiye made significant progress towards establishing an ETS. The country’s updated NDC explicitly refers to an ETS and, during COP28, Türkiye announced the planned launch of a pilot ETS in October 2024. Concurrently, the government is drafting a climate law to define crucial ETS features, intending to present it to Parliament in 2024. Moreover, activities under the Partnership for Market Implementation (PMI) are scheduled to commence this year.

**UKRAINE** In October 2023, the government announced an ETS law would be submitted to the parliament in 2024. In parallel, work started on the development of the ETS implementation roadmap. This will be subject to publication and stakeholder consultation later in 2024. Meanwhile, the suspension of MRV requirements that has been in place since the start of Russia’s war against Ukraine remains in place.

**UNITED KINGDOM** The UK ETS began operating in 2021, following the UK’s departure from the EU ETS. Last year saw a package of reforms aimed at aligning the scheme with the UK’s long-term emissions goals, including a 30% reduction in the number of allowances to be made available over the period 2021 to 2030. The government also announced its intention to expand the scheme to cover domestic maritime activities, waste incineration, energy from waste, and engineered greenhouse gas removals, and to phase out free allocation for aviation.

## NORTH AMERICA

**ALBERTA** In 2023, Alberta implemented significant amendments for the 2023 forward period to its Alberta Technology Innovation and emissions Reduction Regulation (TIER), which applies to large emitters and opted-in installations. The amended TIER Regulation is in effect through 2030 and meets the Canada federal stringency requirements.

**BRITISH COLUMBIA** Starting in April 2024, the British Columbia OBPS (B.C. OBPS) replaces the province’s carbon pricing mechanism for industrial operators which had been in place since April 2019. The OBPS follows the Canadian federal carbon price path and ensures a price incentive for industrial emitters to reduce GHG emissions through a performance-based system.

**CALIFORNIA** In December 2022, the Board of the California Air Resources Board (CARB) adopted the “2022 Scoping Plan for Achieving Carbon Neutrality”, which sets a 48% emissions reduction below 1990 levels by 2030, surpassing the original 40% target. CARB plans to assess all major programs, including cap-and-trade, to increase stringency by 2030 and extend to 2045. In 2023, a series of workshops explored amendments to the decade-old program, including to cost-containment mechanisms, use of revenues from consigned allowances, and carbon leakage measures. Amendments may be voted on by CARB’s Board by end-2024, effective from 2025.

**CANADA FEDERAL** The federal OBPS is in place since 2019 as one part of the federal carbon pollution pricing “backstop” system. The carbon pollution pricing “backstop” system applies to provinces and territories where the carbon pricing system for the 2023-2030 period does not meet the federal benchmark criteria of CAD 80 (USD 59.26) per tCO<sub>2e</sub> in 2024. In 2023, the federal government amended its federal OBPS, to increase the stringency of the output-based standards used to determine facilities’ emissions limits. In December 2023, Canada has announced the development of a federal cap-and-trade system for the oil and gas sector to support its net-zero ambitions. A regulatory framework has already been published;

draft regulations will follow in 2024 and the final regulations are targeted for 2025. The emissions cap would be phased in between 2026 and 2030, and decrease over time to be consistent with Canada's 2050-emissions goal of net zero.

**COLORADO** In October 2023, the Colorado government introduced regulations for an ETS for in-state manufacturers, effective from 2024. The system, covering 22 facilities, includes two groups. One group is subject to absolute reduction requirements while the other is subject to intensity-based reduction requirements. A GHG credits trading system will be operational by December 2024, allowing bilateral trades and auctions. Guidelines for trading between the two groups of facilities will be published by December 2024.

**MARYLAND** 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 RGGI, but the 2023 plan includes direction for the state to consider expanding to an economy-wide cap-and-invest program. Exploration of how the coverage of additional emissions could work is ongoing.

**MASSACHUSETTS** The Massachusetts ETS started operating in 2018 as a complement to RGGI: electricity generators in the state must comply with both RGGI and the Massachusetts program. Since March 2023, the system has reported decreasing prices and a wide dispersion of bid prices in the auctions.

**NEW BRUNSWICK** Last year marked the third year of operation since New Brunswick transitioned from the Canada Federal OBPS to a provincial system. The year saw the introduction of an industry fund, which redirects funds from credit transactions to aid emission reduction projects for OBPS participants. The selection of project participants is merit-based.

**NEWFOUNDLAND AND LABRADOR** 2023 marked the fifth year of operation for the Newfoundland PSS. Following Canada federal pricing trends, the 2023 PSS price rose CAD 15, reaching CAD 65 per tCO<sub>2</sub>e.

**NEW YORK STATE** New York State advanced its Cap-and-Invest Program (NYCI) aiming for significant GHG reductions by 2050. In December, it released a pre-proposal outline, emphasizing cap-and-invest, reporting, and auction rules. Stakeholder engagement shaped its equitable design. The focus now shifts to developing the draft regulation and preparing for launch, ensuring the program's effective implementation with ongoing public and stakeholder feedback.

**NORTH CAROLINA** In 2021, the North Carolina government started a rulemaking process to establish an ETS. In 2023, the state's General Assembly approved legislation prohibiting the governor or any state agencies from requiring public utilities to participate in cap-and-trade programs. As such, barring any further legislative action to mandate a cap-and-trade program in the state, it is unlikely that North Carolina will establish an ETS.

**NOVA SCOTIA** The Nova Scotia OBPS began operating in 2023, replacing Nova Scotia's cap-and-trade system, which had been in place since 2019. The cap-and-trade system was phased out in 2023, officially ending after the final compliance deadline for the 2019 to 2022 trading period in December 2023. The OBPS was approved by the federal government in 2022.

**ONTARIO** In its second year of operation, Ontario amended its EPS program to meet federal benchmarks and extended the program from 2023 to 2030. The 2023 price reached CAD 65 per tCO<sub>2</sub>e, aligning with Canada federal pricing levels. The province also enhanced standards for fossil fuel-based electricity generation, adjusting stringency factors to reduce facility emissions limits.

**OREGON** Oregon's Climate Protection Program (CPP), launched in 2022 to reduce greenhouse gas emissions and support communities, was invalidated in December 2023 by the Oregon Court of Appeals due to procedural issues. The program aimed for significant emissions reduction by 2050 through a declining cap on emissions from major sectors. Despite the setback, Oregon's environmental authorities are set to initiate a rulemaking process to correct the procedural errors and reinstate the CPP.

**PENNSYLVANIA** In October 2019, Pennsylvania's governor signed an executive order to start the process to develop an ETS. The regulation was published in 2022 but was also challenged by members of the Pennsylvania's legislature and by a collection of local stakeholders in front of the state's Commonwealth Court. In November 2023, the court determined that money raised from the regulation constitutes an unconstitutional tax. The decision has been appealed in front of the state's Supreme Court.



**QUÉBEC** Québec conducted stakeholder consultations in the latter half of the year to consider amendments to its cap-and-trade system, aiming for alignment with the 2030 target and carbon neutrality by 2050. Coordinated with California’s program, Québec explored revisions to emissions caps, market controls, and other topics like market data publication and offset credits. Amendments may lead to a draft regulation by summer 2024. In 2023, the system marked its first decade of operation.

**REGIONAL GREENHOUSE GAS INITIATIVE** The Regional Greenhouse Gas Initiative (RGGI), which launched in 2009 is in the middle of its Third Program Review. In September 2023, the RGGI states presented the Spring Modelling Framework, which considers several illustrative allowance supply scenarios for the next years. Virginia, which joined RGGI in 2021, repealed its ETS regulation in 2023 and thus stopped participating at the end of the year.

**SASKATCHEWAN** 2023 marked the Saskatchewan OBPS’s fifth year of operation. From January 2023, the OBPS expanded its sectoral coverage to include electricity generation and natural gas transmission pipeline sectors. The province set a lower threshold for voluntary participation in 2023. Following Canada federal pricing trends, the 2023 OBPS price rose CAD 15, reaching CAD 65 per tCO<sub>2e</sub>.

**WASHINGTON** In 2023, the cap-and-invest program completed its inaugural year, witnessing settlement prices exceeding the lower threshold of USD 51.90 at May and August auctions, prompting two reserve sales in August and November. The Department of Ecology explored linking with the joint California-Québec market, holding outreach events from January to May and publishing a preliminary analysis in October, signaling intent to pursue linking in November. Two registries, the American Carbon Registry and Climate Action Reserve, became approved offset credit suppliers in March.

## LATIN AMERICA AND THE CARIBBEAN

**ARGENTINA** In 2024, Argentina’s Parliament is considering a proposal for a new Emission Trading System (ETS), initially focusing on the energy sector with plans for expansion. This ETS aims to support Argentina’s emission reduction targets under the Paris Agreement. The proposal is under extensive review and discussion, with key elements like emission caps and participation thresholds yet to be clarified. This year will see significant legislative debates and consultations, shaping the future of carbon markets and ETS implementation in Argentina.

**BRAZIL** A new draft bill for the establishment of a Brazilian ETS is in advanced stage of consideration in congress. The bill would define the governance framework and establish the legal foundation for obligations by covered entities. Key design elements such as scope, cap and allocation would be decided in coming years.

**CHILE** In 2022, Chile enacted its “Framework Law on Climate Change”, which contains provisions to set a system of GHG emissions limits akin to an ETS, and provides a basis for the development of market-based, fiscal, and financial instruments to address the negative impacts of GHG emissions. In November 2023, the Ministry of Environment published the Draft Rules for the Development of the GHG Emissions Limits. Moreover, the country is planning to develop an ETS for the energy sector.

**COLOMBIA** Throughout 2023, Colombia continued its development work on its ETS, focusing on the planning stages for the anticipated pilot phase and the system’s full operationalization, expected by 2030. The year involved ongoing analysis and refinement of the ETS design by the government, prioritizing its alignment with the country’s national mitigation targets.

**MEXICO** The Mexico ETS, the first in Latin America, started in January 2020 with a Pilot Program with two phases: a pilot phase between 2020 and 2021, and a transition phase in 2022. The system is expected to enter its operational phase by 2024. While the regulations of the operational phase are not published, those governing the Pilot Program remain in force.



## ASIA PACIFIC

**AUSTRALIA** A major reform of the Australian Safeguard Mechanism entered into force in July 2023. The system now assigns intensity-based emissions baselines to the largest industrial emitters and allows the issuance of credits to facilities that overachieve their baseline. This in effect turns the Safeguard Mechanism into a mandatory baseline-and-credit system, with a fixed yearly decline rate for the facility-level baselines.

**CHINA** The China national ETS finished the second compliance cycle for 2021 and 2022 and the allowance price went up to USD 11 per tCO<sub>2e</sub>. The Ministry of Ecology launched a new offset scheme at the end of 2023, creating a new market for domestic emission reduction projects. The State Council published a new ETS regulation in February 2024, which significantly increased the punishment for non-compliance, data fraud and market manipulation. The new regulation will support sector expansion, long-term cap setting and other ETS development in the future.

**CHINESE PILOTS** All Chinese regional pilots continued trading, ensuring compliance, and updating ETS management measures. In addition to their routine activities, the Hubei pilot is planning to lower the inclusion threshold in a draft management rule for public consultation. The Shanghai pilot expanded coverage to include data centers and introduced a local crediting system. Similarly, the Guangdong pilot extended coverage to ceramics, ports, and data centers.

**INDIA** The Indian government is advancing work to establish a domestic carbon market. According to current plans, this will include a compliance scheme covering energy-intensive industrial sectors, and a voluntary offset mechanism. The planned compliance scheme will be intensity-based and should be introduced through a phased transition from an existing energy efficiency trading scheme, starting in 2024.

**INDONESIA** 2023 saw the commencement of Indonesia's intensity-based ETS for the power sector, a major development in its climate strategy. The system's initial phase included a substantial segment of the power sector, impacting how emissions are managed. The groundwork was also laid for transitioning to a hybrid "cap-tax-and-trade" system by 2025, indicating a shift towards more integrated carbon management approaches.

**JAPAN** Japan launched the GX-ETS in April 2023, beginning as a voluntary baseline-and-credit system. Almost 570 companies making up more than 50% of national emissions participate. The GX-ETS is expected to transition to a mandatory ETS from 2026 after its first compliance deadline. JCM credits will also be eligible for use under the GX League.

**MALAYSIA** Malaysia continues to develop its national carbon market, with a domestic ETS being considered. A study conducted by the government in cooperation with the PMI to explore the implementation of carbon pricing instruments is expected to conclude in 2024. In November 2023, the Malaysian state of Sarawak passed a climate bill that includes provisions to introduce mandatory emissions thresholds and reporting requirements for industrial emitters.

**NEW ZEALAND** 2023 saw the continued development of the NZ ETS. Unit supply and auction reserve price settings for the NZ ETS for 2024 to 2028 were updated in accordance with a court order made following a successful legal challenge against the original settings, bringing the cap trajectory in line with New Zealand's net-zero targets. October elections brought in a change of government, which announced it will progress pricing of agricultural emissions by no later than 2030 and repeal a current legislative provision which would bring the sector into the NZ ETS from 2026.

**PAKISTAN** Pakistan continues to advance preparatory work for a domestic ETS under the World Bank's PMI program. A national registry and MRV framework are under development. Besides a domestic ETS, Pakistan aims to launch credit-based trading mechanisms linked to international carbon markets including under Article 6 of the Paris Agreement.

**PHILIPPINES** In May 2023, the Philippines House of Representatives advanced a bill for an ETS to reduce GHG emissions in high-emitting sectors. A technical working group has since been established to review the bill and provide recommendations in consultation with stakeholders. In parallel, the Department of Finance evaluates carbon pricing's role in the national strategy.

**REPUBLIC OF KOREA** In September 2023, the government released a set of new rules to increase liquidity in its ETS, Southeast Asia's first national, mandatory ETS launched in 2015. This includes revising the guidelines for verifying offset credits to reduce the burden on businesses and strengthen MRV. The holding limits of Korean Allowance Units (KAUs) for third parties was raised and the compliance cycle was aligned so that compliance deadline and banking/borrowing applications fall in August. From 2024, the restrictions on the carryover of unused allowances will be relaxed and the conversion period for offset credits prolonged. In 2024, monthly auctioned volume will depend on the previous month's auction results.

**THAILAND** Thailand is advancing its climate strategy with the development of the Thailand Voluntary Emissions Trading Scheme (V-ETS). In 2023, agencies conducted engagement and capacity building activities for ETS implementation with pilot organizations. Significant strides were also made towards establishing a domestic carbon market framework, including the launch of the carbon credit trading platform FTIX and regulations for carbon crediting markets. A draft "Climate Change Act", aimed at providing a legislative framework for emissions trading, is expected to be submitted for cabinet and parliamentary approval in 2024 or 2025.

**VIETNAM** Vietnam's ETS development began with legislation in 2021, followed by a 2022 strategy committing to net-zero emissions by 2050. A pilot ETS is planned for 2027, with full implementation by 2030, with provisions allowing for participation under Article 6 of the Paris Agreement.

# INFOGRAPHICS

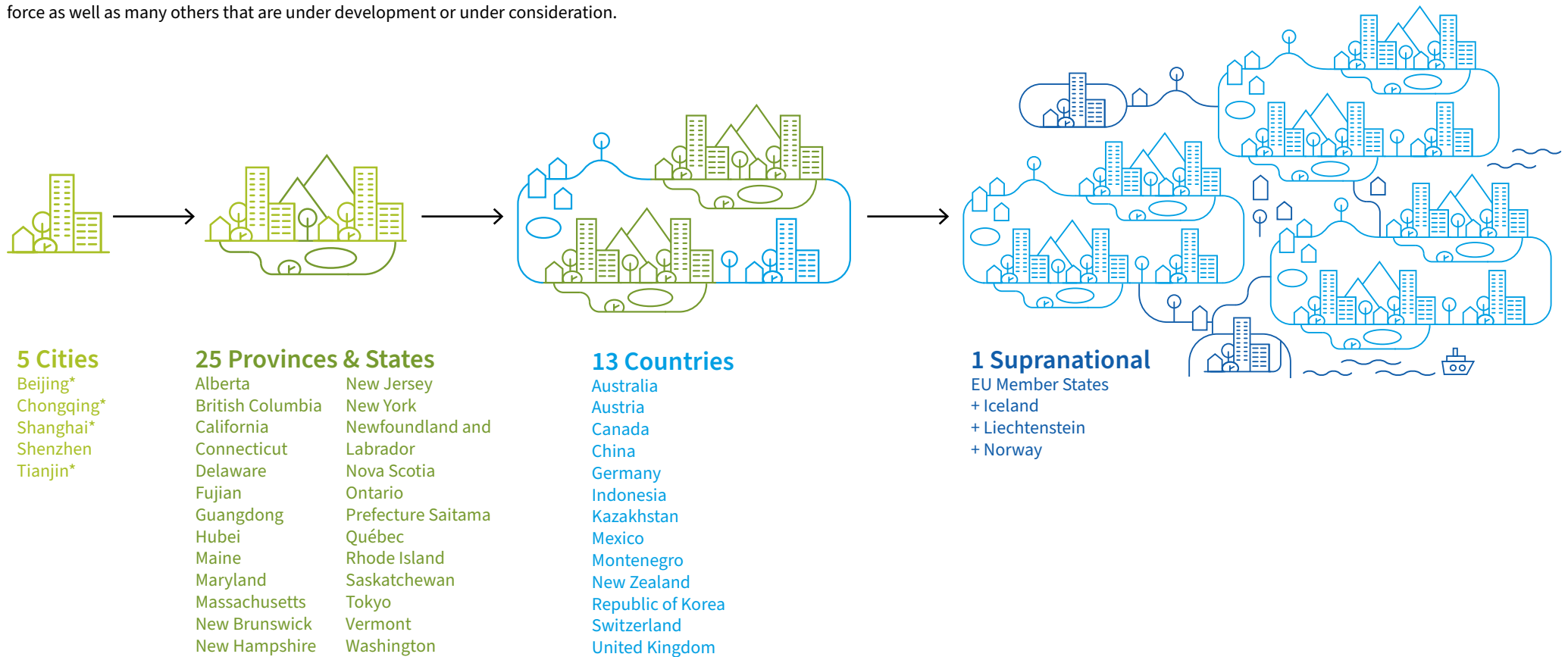
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# FROM SUPRANATIONAL TO LOCAL

## 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 ETs 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 ETs 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 emissions while other province- and city-level ETS pilots regulate emissions from a variety of sectors. In North America, many provincial or state-level ETs exist, with some linked domestically or internationally. In the rest of the ICAP Status Report 2024 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.

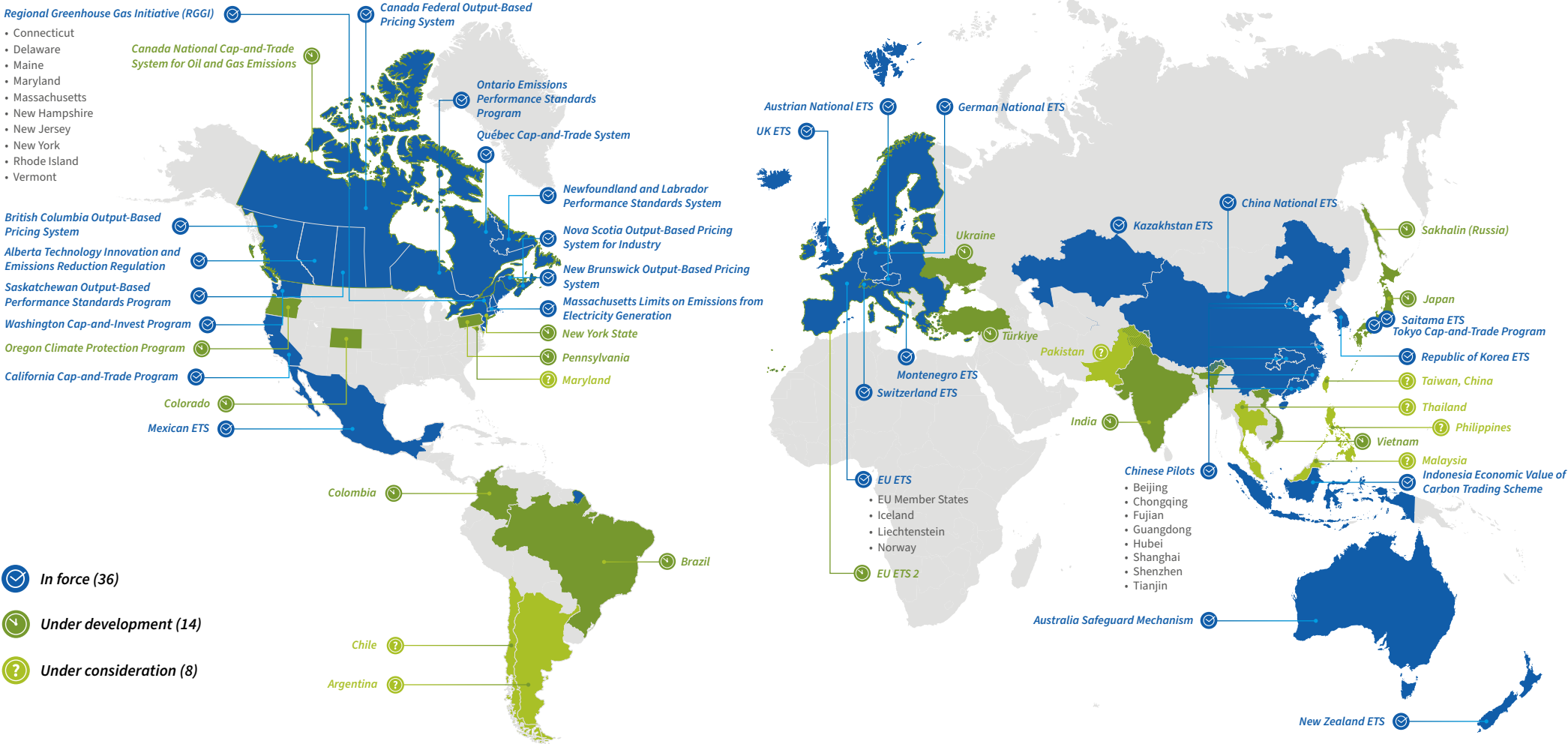


\* Beijing, Chongqing, Shanghai and Tianjin are provincial-level municipalities in the Chinese administrative system.

# EMISSIONS TRADING WORLDWIDE

## THE CURRENT STATE OF PLAY IN CAP-AND-TRADE

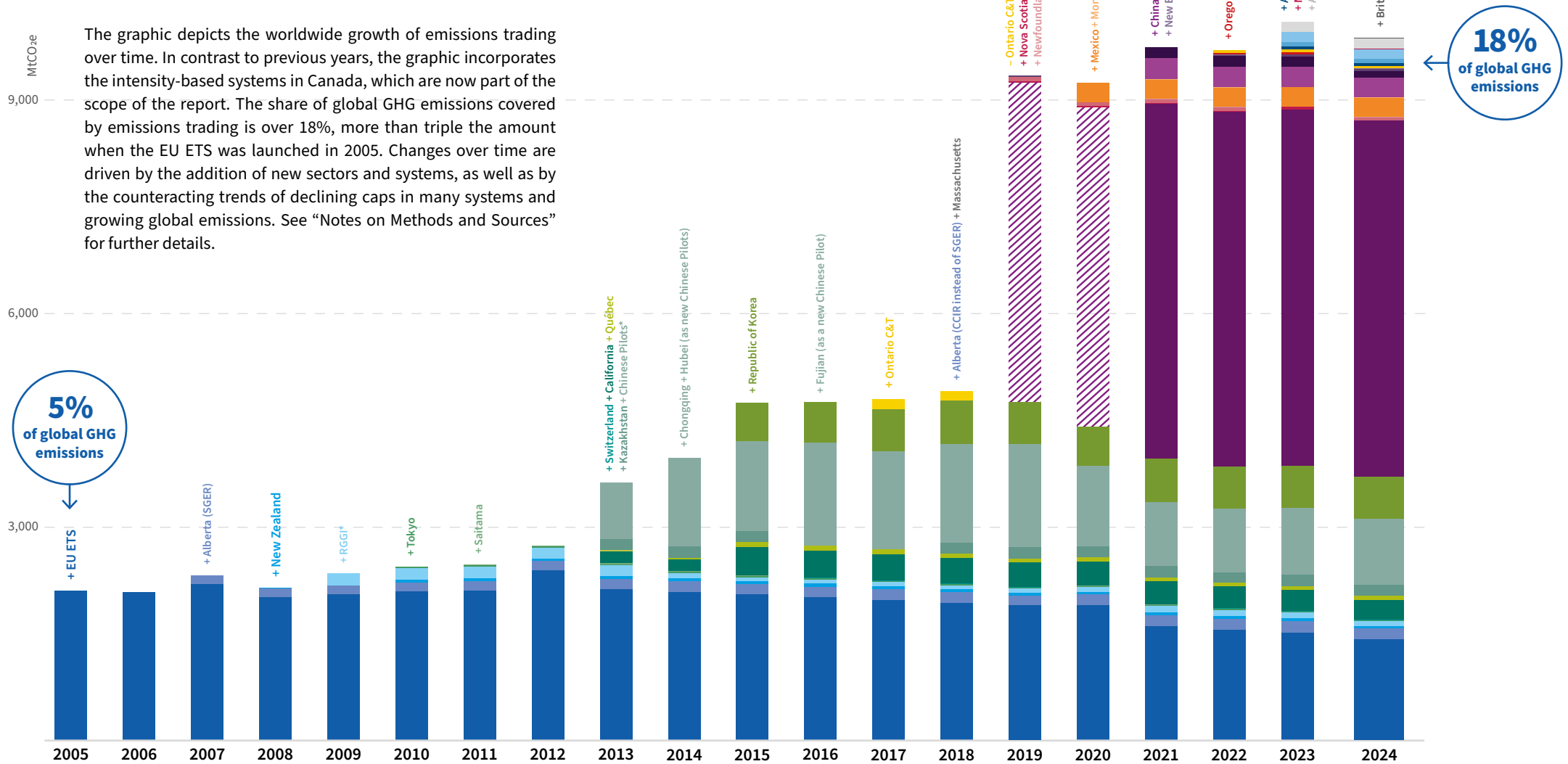
The ICAP ETS world map depicts emissions trading systems currently in force, under development or under consideration. As of January 2024, there are 36 ETSs in force. Another 14 are under development and expected to be in operation in the next few years. These include ETSs in Colombia, Türkiye, and Vietnam. 12 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 and Guangdong). 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 ETS

## 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. In contrast to previous years, the graphic incorporates the intensity-based systems in Canada, which are now part of the scope of the report. The share of global GHG emissions covered by emissions trading is over 18%, more than triple 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.



5% of global GHG emissions

18% of global GHG emissions

\* As of 2020, RGGI includes New Jersey. Between 2021 and 2023, it also included Virginia

\* Beijing, Guangdong, Shanghai, Shenzhen, Tianjin

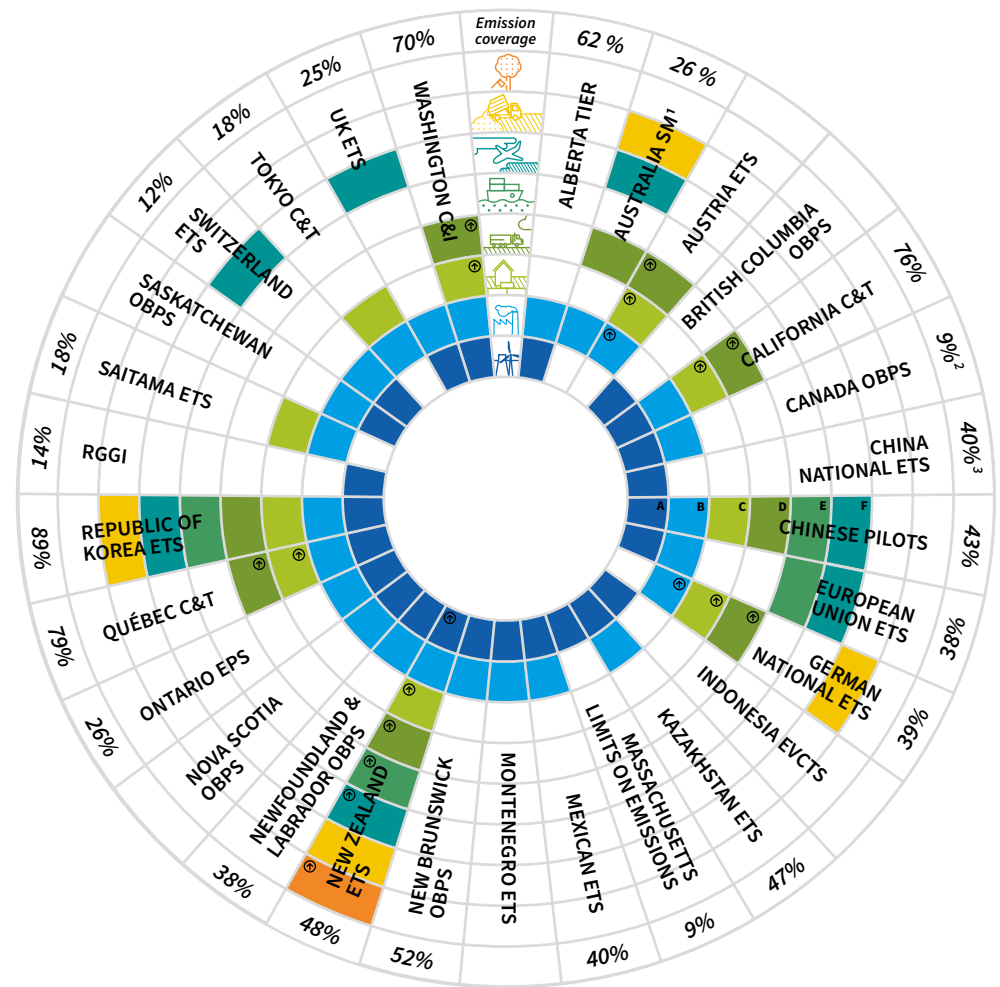
\* The Chinese National ETS came into force in 2021 but has retroactive compliance obligations in 2019 and 2020, indicated above by the striped bar

\*\* In 2021, the UK launched its own ETS which required an adjustment in the EU ETS cap.

# SECTOR COVERAGE

## SECTORS COVERED BY EMISSIONS TRADING ACROSS SYSTEMS

The graphic shows sectors (types of economic activity) covered by an ETS in force in 2024. 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** The Beijing ETS covers one power company. The Shanghai ETS covers oil-fired generators
- B** Beijing, Chongqing, Fujian, Guangdong, Hubei, Shanghai, Shenzhen, Tianjin
- C** Beijing, Shanghai, Shenzhen
- D** Beijing, Shenzhen
- E** Shanghai
- F** Fujian, Guangdong, Shanghai

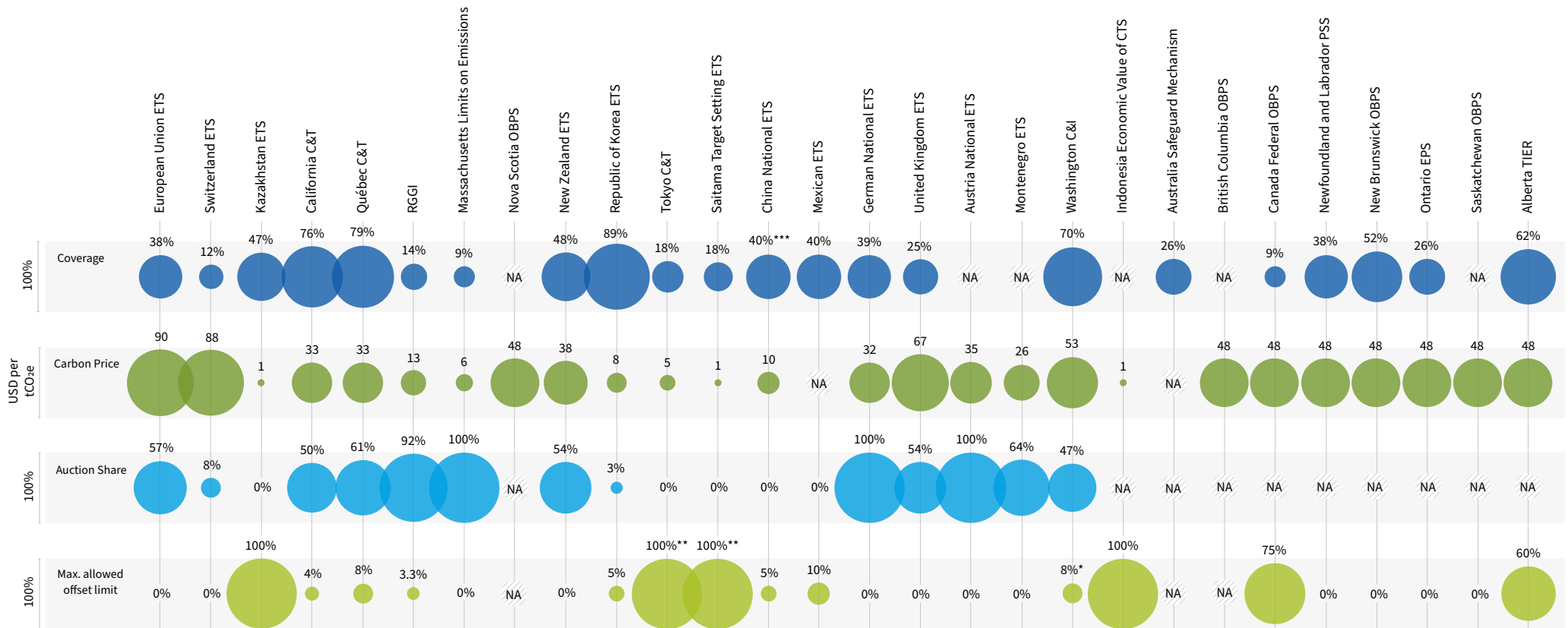
Ⓢ indicates which sector is covered upstream

1 Only a very small share of emissions (>5%) from the waste and transport sectors are covered by the Safeguard Mechanism  
 2 The 2020 value is not consistent with the current application of the federal OBPS. In 2020, the federal OBPS applied in Ontario, New Brunswick, Prince Edward Island, Manitoba, Yukon, Nunavut and partially in Saskatchewan. The federal OBPS no longer applies in Ontario, New Brunswick and Saskatchewan  
 3 Of CO<sub>2</sub> emissions.

# DIFFERENT DIMENSIONS OF ETS

## A COMPARATIVE LOOK AT KEY METRICS FROM CARBON MARKETS

The circles 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<sub>2</sub>e and averaged over 2023. **Auction share** (in light blue), expressed as a share of the 2023 cap, denotes the share of allowances that have been offered for auction in the primary market. **Max. allowed offset limit** indicates the share of a compliance entity's obligations that can be met using approved offsets. The size of the circle represents the numerical value of the corresponding dimension. See "Notes on Methods and Sources" for further details.



\* 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.  
 \*\* In Saitama, quantitative limits apply for "outside Saitama" credits. In Tokyo, quantitative limits apply for "outside Tokyo" credits.  
 \*\*\* Of CO<sub>2</sub> emissions.

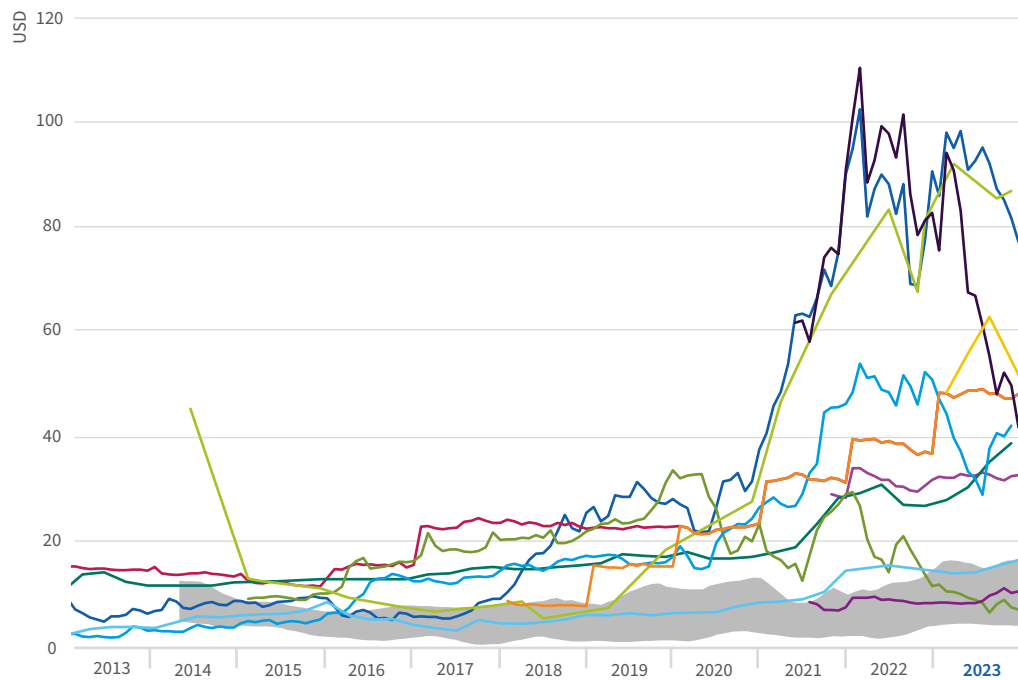
# ALLOWANCE PRICES AND REVENUES

## 2023 IN A LONGER HISTORICAL CONTEXT

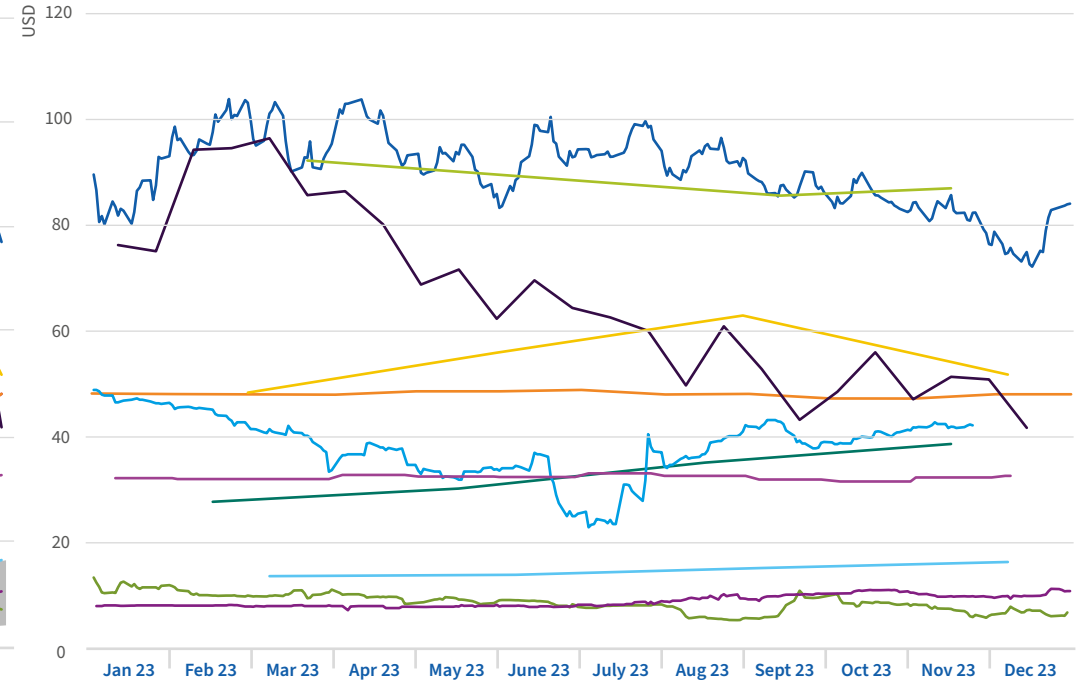
The panels in the first page of this infographic use data from the ICAP Allowance Price Explorer and the factsheets of this report to visualize developments in allowance markets in a long historical context since 2013 (left panel) and in 2023 (right panel). Both the short- and long-term price developments 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. Over time, increases in carbon prices and the introduction of new systems has led to an increase in revenues raised. 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.



### 2013-2023

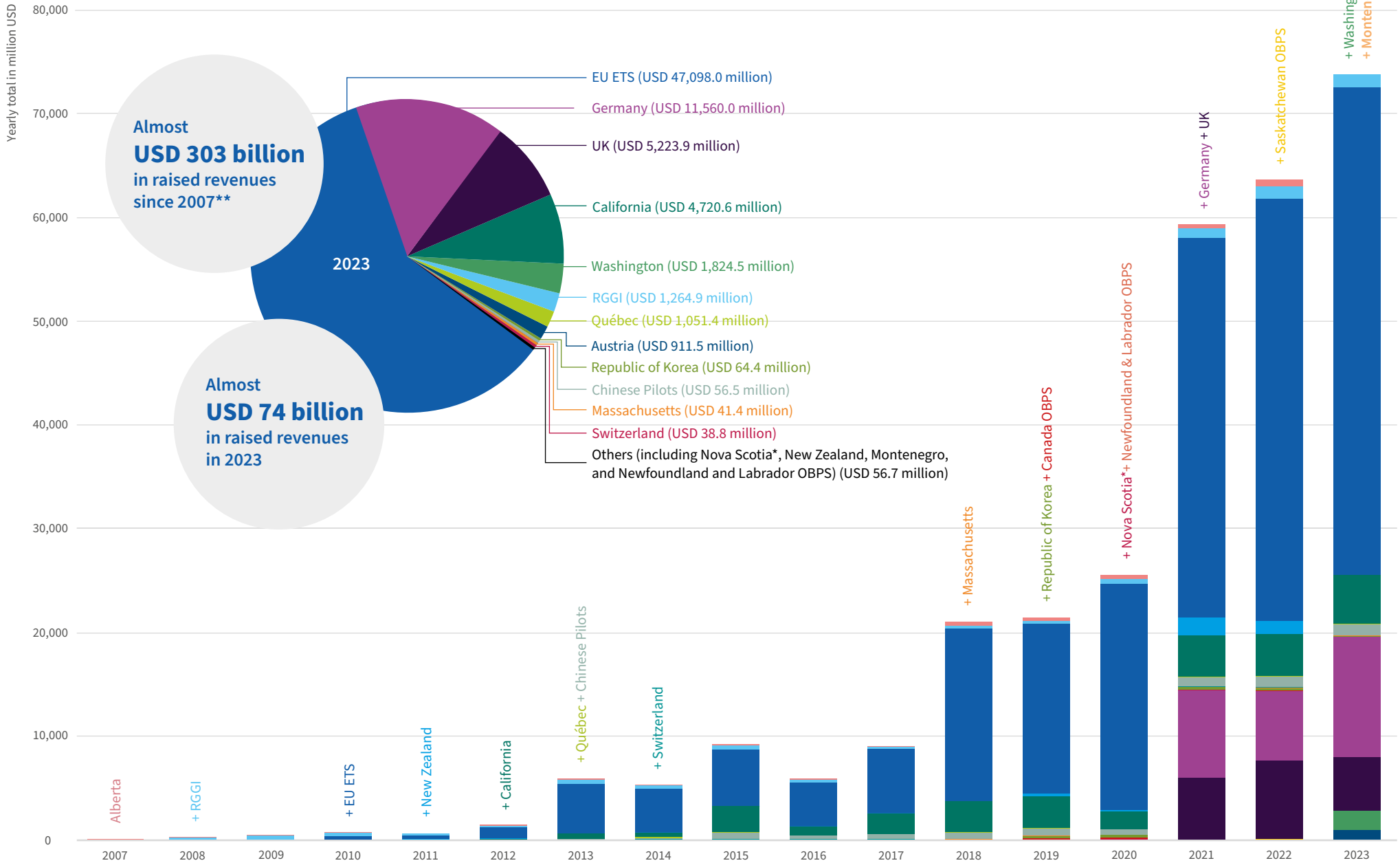


### 2023



# YEARLY REVENUES RAISED BY EACH SYSTEM

\* Revenues in 2023 collected from the last auctions under the cap and trade program.  
 \*\* Revenues collected by the Canada federal OBPS are reported only until 2020. Data for Newfoundland and Labrador, Saskatchewan and Alberta are only reported until 2022. Data on New Brunswick and on Ontario is not yet publicly available.



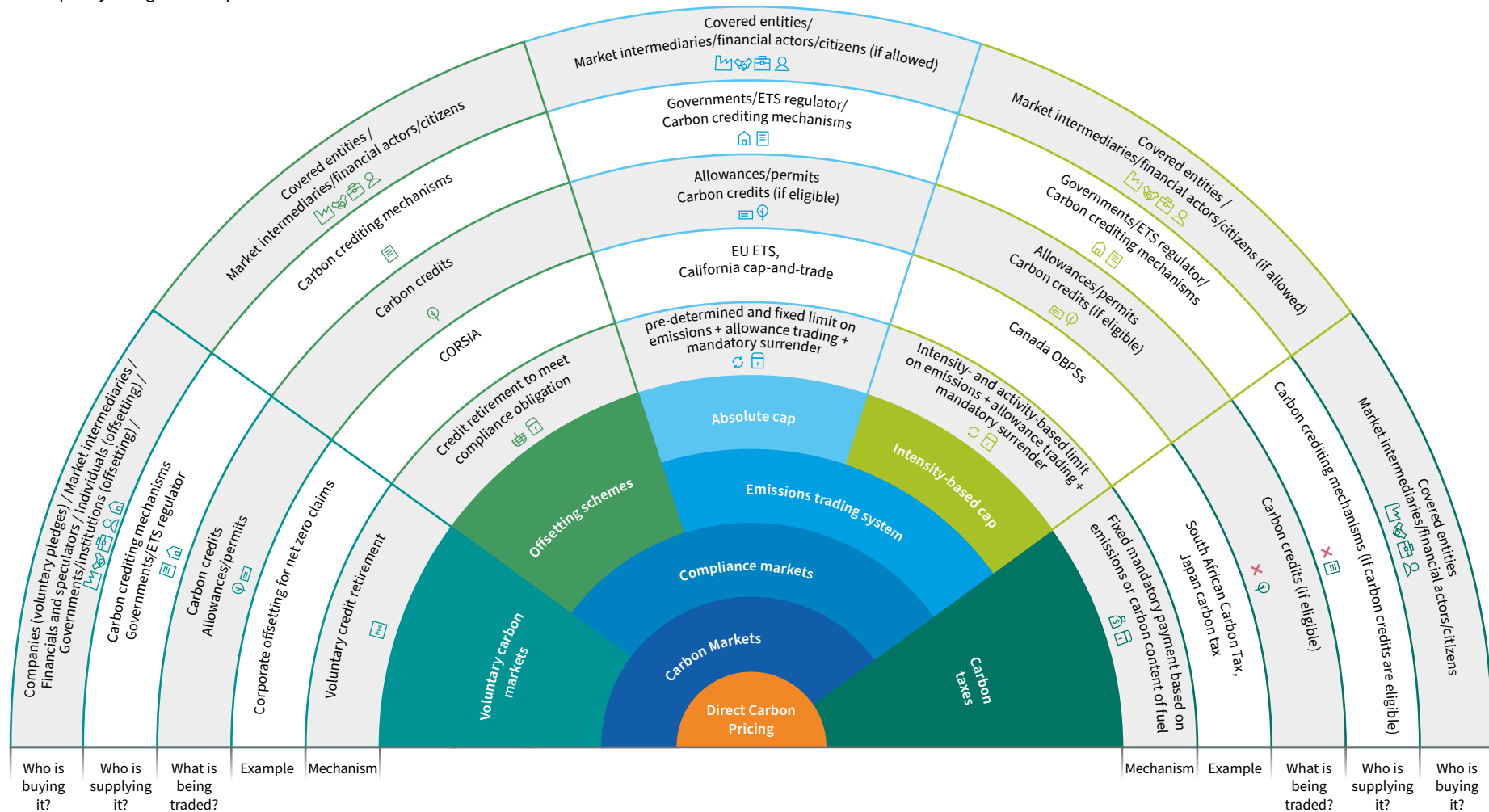
Almost **USD 303 billion** in raised revenues since 2007\*\*

Almost **USD 74 billion** in raised revenues in 2023

# TYOLOGY OF CARBON PRICING

## DIFFERENT TOOLS TO ACHIEVE A SINGLE OBJECTIVE

Direct carbon pricing instruments encompass a diverse range of policies and mechanisms aimed at internalizing the external costs of carbon emissions. They are designed to create economic incentives for reducing greenhouse gas emissions and transitioning towards a low-carbon economy. This infographic presents a typology of different direct carbon pricing instruments, departing from the distinction between carbon taxes and carbon markets. Carbon markets can be categorized as being either voluntary or compliance. The latter in turn encompasses offsetting schemes (such as CORSIA), and emissions trading systems (ETs), the scope of this report. ETs can be further categorized based on whether they have an absolute or an intensity-based cap or emissions limit. Direct carbon pricing instruments can be understood by their mechanism, what (if anything) is being traded, who is supplying it and who is buying it, Understanding the nuances and implications of each carbon pricing instrument is essential for effective climate policy design and implementation.

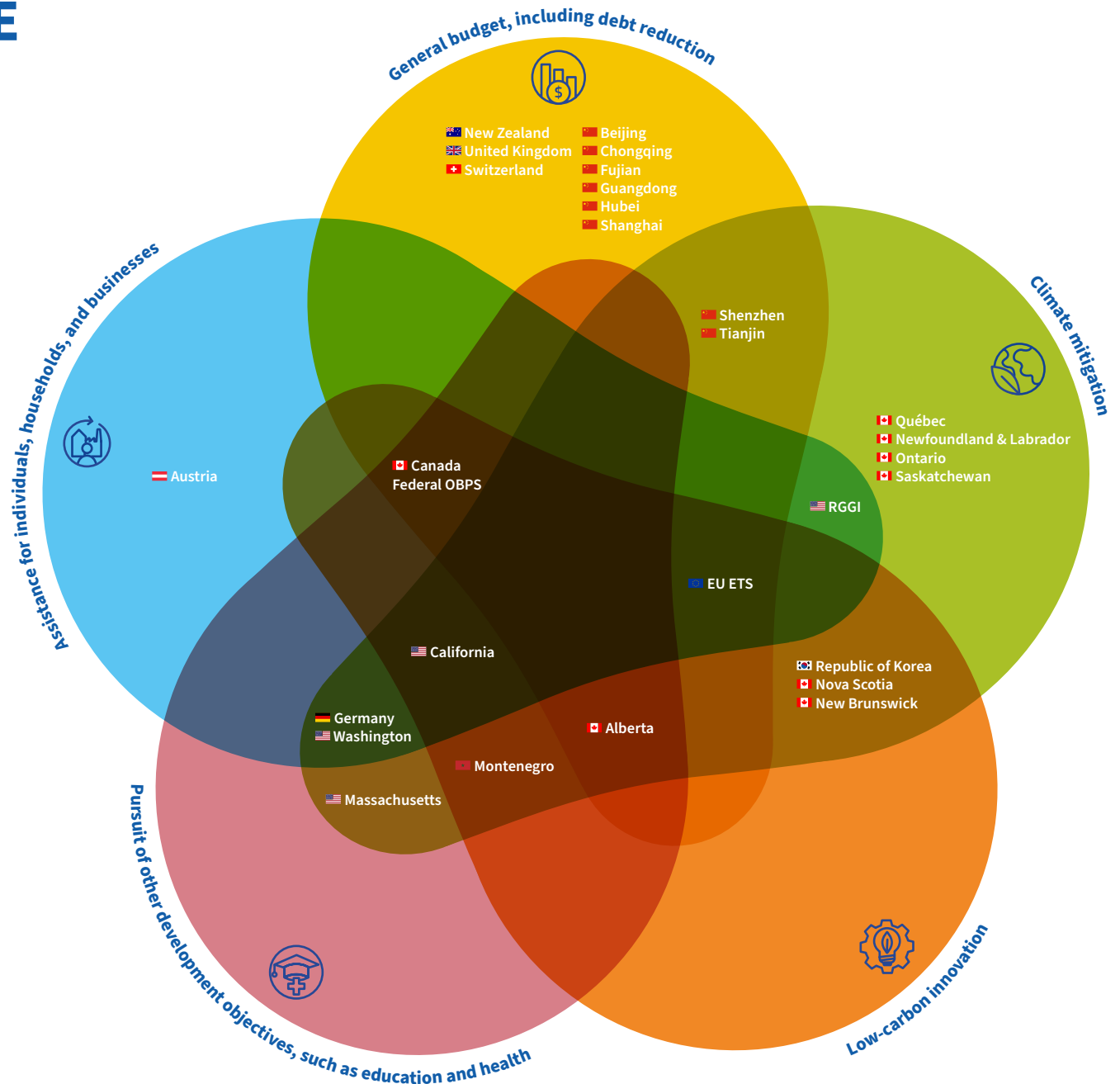




# USE OF ETS REVENUE

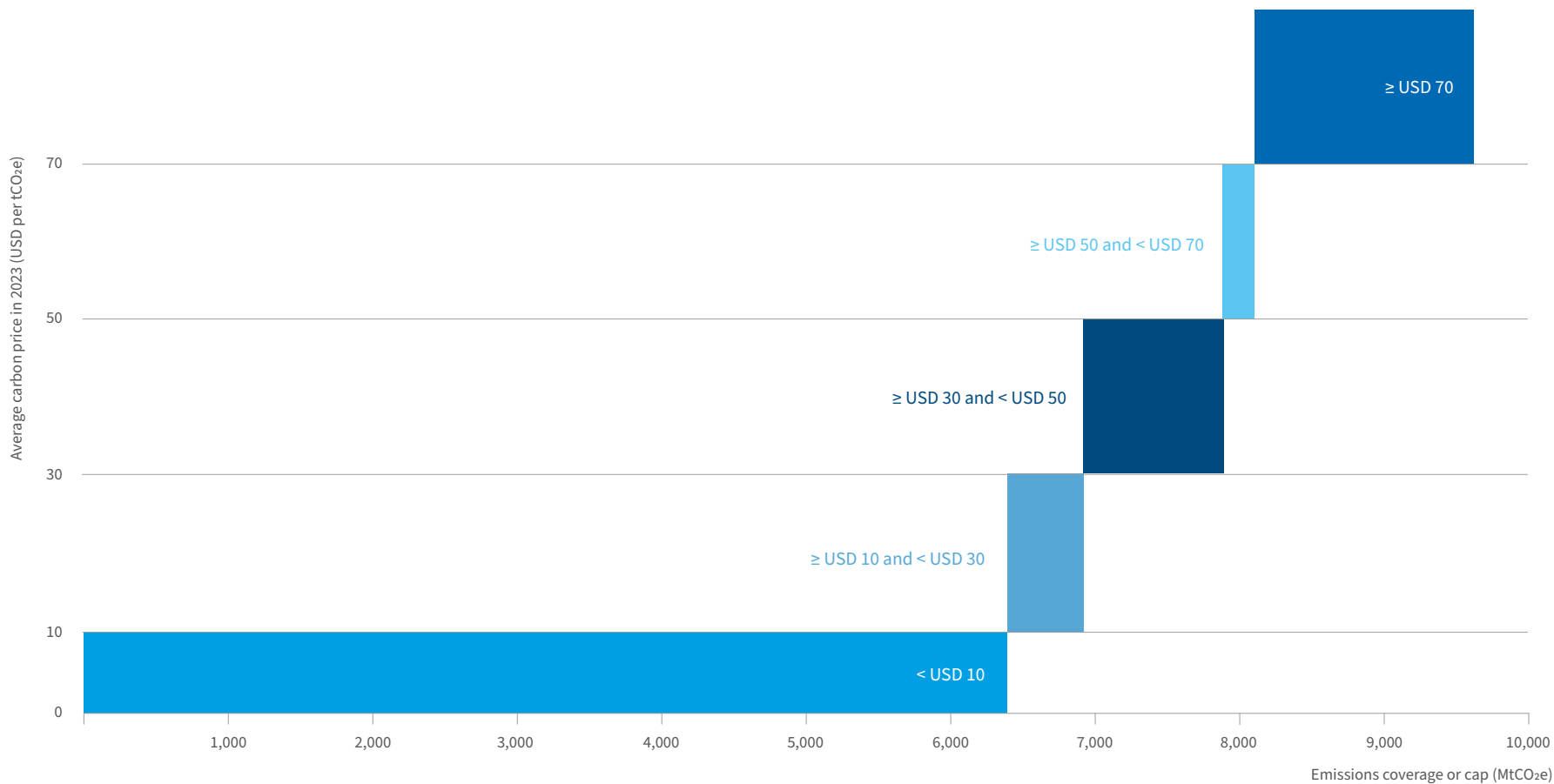
## EMISSIONS TRADING REVENUES FULFILLING SOCIETAL OBJECTIVES

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 way, reflecting jurisdictional priorities, as shows by the infographic. Some jurisdictions channel collected revenues towards their general budget, while others prefer to 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. The amount of revenue collected depends on the jurisdiction's size, ETS coverage, allocation and compliance mechanisms, and the level of the carbon price. 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.



# PRICES OF COVERED EMISSIONS

This infographic shows the range of carbon prices in 2023 in ETSs in force, and the volume of emissions that systems with those price levels cover. Around two-thirds of ETS-covered emissions are in systems where prices averaged below USD 10 in 2023. About one-sixth of ETS-covered emissions were in systems where average prices in 2022 were between USD 10 and USD 70, whereas around another sixth were in systems with an average allowance price above USD 70 (the EU ETS and Switzerland). Differences in allowance prices are driven by, among others, changes in current and expected future scarcity of allowances in each system, variations in general economic conditions, system design and policy reforms.



# 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 34 members and 8 observers.

## ICAP'S OBJECTIVES

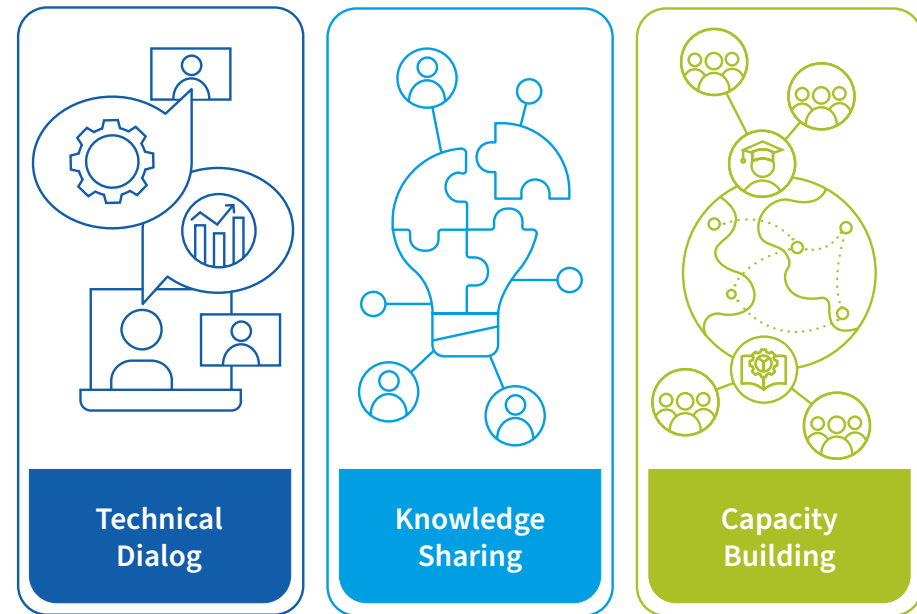
- Highlight the key role of emissions trading as an effective tool to address climate change.
- Facilitate the development, implementation, and refinement of ETSs around the world.
- Build and strengthen partnerships among governments to share best practices and lessons learned.

## MEMBERS (AS OF APRIL 2024)

Arizona, Australia, Austria, 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, Nova Scotia, Ontario, Oregon, Portugal, Québec, Spain, Sweden, Switzerland, the Tokyo Metropolitan Government, Vermont, the United Kingdom, and the State of Washington.

## OBSERVERS

Canada, Chile, Japan, Kazakhstan, the Republic of Korea, Mexico, Singapore, and Ukraine.



## THREE PILLARS OF ICAP'S WORK

**Technical Dialog:** 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 across ETSs, carbon capture and storage, Article 6, carbon leakage, and free allocation.

**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.



**All queries on rights and permissions should be addressed to:**

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