# Emissions Trading Worldwide

International Carbon Action Partnership (ICAP)
Status Report 2018

# California Cap-and-Trade Program

## Recent Developments and Future Direction

**David Clegern and Mark Sippola**
California Air Resources Board

### California Cap-and-Trade Program background

California's governors and legislature prioritize public health and the environment. A series of executive orders and laws have generated policies and actions across state government, among local and regional governments, and within industry. These policies also have encouraged collaboration with federal agencies and spurred partnerships with many jurisdictions beyond California's borders. Moving forward, California will continue its pursuit of collaborations and advocacy for climate change action. California is on track to reduce statewide greenhouse gas (GHG) emissions to at least 1990 levels by 2020 and has developed a Climate Change Scoping Plan to further reduce GHG emissions to 40 percent below 1990 levels by 2030. The California Cap-and-Trade Program (the Program) is a key element in California's portfolio of measures to achieve these goals.

The Program began in 2013 as one of a suite of measures developed in response to the California Global Warming Solutions Act (Assembly Bill (AB) 32), 2006. It sets an aggregate emissions limit on over 400 entities responsible for about 80 percent of California's GHG emissions, incentivizing production efficiency and driving the transition to cleaner fuels and more efficient energy use. Successful implementation of AB 32 initiatives has kept California on course to achieve its 2020 emissions target, even as the state's population and economy have grown.

"Recent legislation, recent updates to the Cap-and-Trade Regulation (the Regulation), and upcoming changes for the Program post-2020 aim to build on these achievements to reach goals set for 2030 and beyond."

### Recent California legislation

Two pieces of legislation passed in July 2017 help to clarify and focus the Program. AB 398 expressly supports the California Air Resources Board's (CARB) authority to continue the Cap-and-Trade Program beyond 2020 and directs CARB to modify certain aspects of the Program after 2020. Details of the AB 398-required changes to the Program are outlined below. As companion legislation to AB 398, the legislature also passed AB 617, which recognizes the efforts of California's environmental justice community to push the state to better address local, non-GHG air pollutants. This bill requires strengthening community-level air monitoring and the development of a statewide strategy to further reduce health-damaging air pollutants in communities with high cumulative exposure levels.

Disadvantaged communities bearing disproportionate pollution burdens will see improvements in air quality as well as opportunities to participate in California's rapidly growing low-carbon economy.

"Bolstering the tools for reducing health impacts from poor air quality and confronting environmental justice concerns under AB 617 allow the Cap-and-Trade Program to remain focused on delivering cost-effective GHG reductions."

### Recent amendments to the Cap-and-Trade Regulation

A nearly two-year public process to update the Regulation culminated in the adoption of amendments in July 2017 that extend the Program through 2030 and allow the joint California and Québec Programs to link with Ontario's Cap-and-Trade Program on 1 January 2018. Linking the Program with Ontario expands overall emissions reduction opportunities and improves liquidity in the carbon market. More information on these recent amendments is available at the CARB website.[1]

### Upcoming amendments for the post-2020 California Cap-and-Trade Program

AB 398 requires the post-2020 Program to include, among other changes, a specified price ceiling and price containment points, additional limits to the amount of offsets that may be used, and the maintenance of existing levels of allocation to industry. CARB will undertake a public process to amend the Regulation to accommodate these features.

The Program currently includes an Allowance Price Containment Reserve (APCR) to contain costs. APCR allowances are available for sale at pre-determined fixed prices if any entity requests that a sale occur. Under the current Regulation, allowances remaining in the APCR after 2020 will be available for sale at a fixed dollar amount above the floor price with the fixed amount increasing each year by the inflation rate. If APCR allowances are exhausted, additional allowances would be pulled from future years' allowance budgets and made available at the same cost. AB 398 directs the post-2020 Program to replace the APCR with an allowance price ceiling and two interim price containment points. In establishing these prices, CARB must consider impacts on households, businesses, and the economy, as well as the social cost of

1 California Air Resources Board. Available at https://www.arb.ca.gov/regact/2016/capandtrade16/capandtrade16.htm

carbon, emissions leakage, the auction floor price, and the price needed to incentivize research, development and deployment of low-carbon technologies.

AB 398 also requires that the offset credit limit be capped at four percent of an entity's compliance obligation for 2021–2025 and at six percent for 2026–2030. Further, at least half of offset credits surrendered must provide direct environmental benefits to the state. Currently, offset credits may be used to satisfy up to eight percent of a compliance obligation with no other restrictions.

Industrial entities covered by the Program currently receive free allowances to minimize emissions leakage. For 2013–2017, industry assistance factors used to calculate allowance allocation are set at 100 percent for all industrial sectors. These assistance factors are only one factor—alongside benchmarks, product data (for most sectors), and an adjustment factor that decreases every year with the cap—used to calculate allocations. This means a 100 percent assistance factor does not translate into an allocation sufficient to cover an entity's annual emissions. Under the current Regulation for 2018–2020, these assistance factors will be reduced to 50, 75, and 100 percent for sectors with low, medium, and high emissions leakage risk, respectively. AB 398 directs that assistance factors for the post-2020 Program will be at 100 percent for all industrial sectors; further, CARB has directed staff to evaluate and propose applying a 100 percent assistance factor for the 2018–2020 period.

"Moving forward, California will continue to advocate for broader climate action and to pursue partnerships with other jurisdictions to expand opportunities for GHG reductions."

### Upcoming climate efforts in California

In recognition of this, in the coming year, California will underscore the urgency of coordinated climate action by hosting both the Governors' Climate and Forests Task Force annual meeting on 10–11 September and the Global Climate Action Summit on 12–14 September. Together, these meetings will further demonstrate the role of subnational climate leadership in advocating for inclusive, green economies, convening people from all walks of life to showcase the surge of climate action around the world, and strengthening the push for greater emissions reduction targets.

# The Regional Greenhouse Gas Initiative
## The RGGI Review and the Path Ahead

**Lois New**, New York State Department of Environmental Conservation
**William Space**, Massachusetts Department of Environmental Protection

The successful Regional Greenhouse Gas Initiative (RGGI) continues to evolve and improve. 2018 will mark the 10th year of the program, and the 38 successful auctions held through to the end of 2017 have yielded more than USD 2.8 billion in proceeds for participating states, much of which is invested in energy efficiency programs that yield large macroeconomic benefits. Recently announced changes will result in a 2030 emissions cap that is 65% below the initial 2009 cap, and the implementation of an "Emissions Containment Reserve." Furthermore, the addition of one or more states to the RGGI market is a real possibility.

"While the proposed abandonment of the federal Clean Power Plan is a significant setback for the United States as a whole, the RGGI states continue to demonstrate that the RGGI cap, together with the reinvestment of auction proceeds in cleaner and more efficient energy, is not only reducing emissions, but also improving public health, reducing electricity bills, and creating jobs."

RGGI recently completed its second program review. The review process extended over two years, and included nine public regional stakeholder meetings and webinars. The states initiated the public component of the program review in late 2015 by sharing a list of key topics, and went on to consider thousands of public comments and more than 25 distinct modeling runs. In August 2017, the states announced their proposed changes, including:

- A regional cap of 75.148 million short tons of $CO_2$ in 2021, which will decline by 2.275 million short tons of $CO_2$ per year thereafter, resulting in a total 30% reduction in the regional cap from 2020 to 2030.
- Additional adjustments to the RGGI cap, to account for the full bank of excess allowances at the end of 2020. The amount of this adjustment will be calculated in 2021 according to a formula established in the revised Model Rule, and it will be implemented over the period 2021 to 2025.
- Modifications to the Cost Containment Reserve (CCR) size and trigger price. The proposed CCR size from 2021 onwards will be 10% of the regional cap. The CCR trigger price will be USD 13 in 2021, and will rise by 7% per year, ensuring that the CCR will only be triggered if emission reduction costs are higher than projected.
- Implementation of an Emissions Containment Reserve (ECR) in 2021, wherein states will withhold allowances from circulation to secure additional emission reductions if prices fall below established trigger prices. The ECR trigger price will be USD 6 in 2021, and rise at 7% per year, so that the ECR will only be triggered if emission reduction costs are lower than projected. At this time, Maine and New Hampshire do not intend to implement an ECR.

"The states implementing the ECR will withhold up to 10% of the allowances in their base budgets per year. Allowances withheld in this way will not be reoffered for sale."

Stakeholder feedback on the ECR was overwhelmingly positive, and an August 2017 analysis of the ECR concept completed by Resources for the Future (RFF) identified a number of ways in which an ECR could reduce risk and improve the functioning of the RGGI market.[1] RFF titled their analysis "Expanding the Toolkit," suggesting that the ECR is a RGGI program element that may be of interest to other jurisdictions, just as the RGGI auctions have been.

"The most important part of the program review is the selection of a proposed 30% reduction in the regional cap between 2020 and 2030. However, the inclusion of the ECR, which is designed to secure additional reductions when costs are low, generated nearly as much interest among stakeholders."

1 http://www.rff.org/research/publications/expanding-toolkit-potential-role-emissions-containment-reserve-rggi

As noted above, the program changes have been proposed by states, but have not yet been finalized. For the changes to take effect, each state must complete a rulemaking process pursuant to its own statutory requirements. The processes are critical because the RGGI allowance market depends on the existence of consistent rules in all participating states; there is no centralized rulemaking authority. Individual state rulemaking processes are expected to take place in 2018.

Another development is the potential for new states to link with the RGGI market. Virginia and New Jersey, both of which are US states that are located contiguous to the RGGI region, are current possibilities. The process has progressed furthest in Virginia, with the completion by Virginia of draft regulatory language and modeling runs that address a potential combined allowance market, as well as the release of a statement by the RGGI states applauding Virginia's progress and noting similarities between Virginia's regulation and the RGGI model rule. Serious work with New Jersey is expected in 2018, after the inauguration of a newly elected (and supportive) governor. Notably, governors in both states were elected after having indicated support for RGGI. Of course, "linking" would bring challenges, but fortunately there are resources, such as the forthcoming 'ICAP Guide to Linking', to help guide the process as the RGGI states move from theory to practice.

Looking further ahead, 2019 could be a relatively quiet year, but the next program review is scheduled for 2021, so planning for that will need to begin in 2020. Stay tuned to the RGGI website and ICAP's updates to follow the implementation of the ECR, the ongoing assessment of Virginia's program development, and all of the latest RGGI news.

# The EU ETS

## A Resilient System to Support Long-Term Decarbonization

**Dirk Weinreich, Helen Monzel, Lisa Katharina Schmid and Angelika Smuda**
German Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (BMUB)

Since its establishment in 2005, the European Emissions Trading System (EU-ETS) has always been a learning system. The agreement on far-reaching reform measures finalized in late 2017 marks the successful conclusion of lengthy negotiations. It incorporates lessons learned from earlier trading periods and brings the system in line with the EU's 2030 climate targets. With the recently agreed reform package,[1] negotiators have struck a balance between strengthening the price signal, protecting industry from carbon leakage, and securing solidarity mechanisms for poorer member states. Most changes will be implemented in the fourth trading period that will last from 2021 until 2030.

"The reform stipulates a number of measures that strengthen the EU-ETS and enable it to resume its place as the main driver of European decarbonization."

Since the global financial and economic crisis began unfolding in 2008, a structural surplus has been accumulating within the EU-ETS amounting to an aggregated figure of 2.2 billion allowances at its peak in 2013. A comprehensive reform to tackle this problem and also to make the system more resilient to potential future crises was adopted in 2015 with the establishment of the Market Stability Reserve—MSR[2] (for more details on the MSR please refer to our contribution to the ICAP Status Report 2015). From 2019 onwards, allowances will be transferred to the MSR and thus the surplus will be gradually removed.

The final reform package comprises not only one, but a whole set of measures aimed at strengthening the EU-ETS. Already in 2014, the Council of the European Union decided to increase the linear reduction factor (LRF), by which the cap is reduced each year from 1.74% to 2.2%,[3] in order to comply with the EU 2030 target of reducing emissions by 43% compared to 2005 in the sectors covered by the EU-ETS. The LRF is also subject to a review in light of the goals and the stocktaking process of the Paris Agreement.

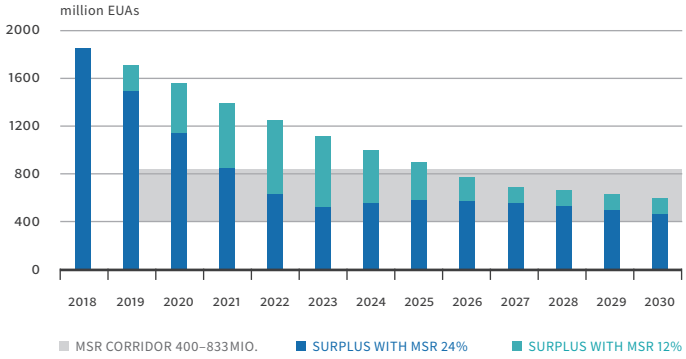


**Figure 1:** Projected Surplus Development 2018–2030

The effect of doubling the MSR intake rate on the projected surplus development indicating the timeframe for dropping below the upper threshold.[4,5]

Although the general architecture of the MSR is still considered to be a guarantee for long-term resilience and flexibility, it became increasingly obvious that the stipulated intake rate of 12% would not return scarcity to the system quickly enough. Therefore, it was agreed to reform the MSR so that the rate will be increased to 24% in the years 2019 to 2023. By doubling the intake rate, we now expect to reach scarcity[6] at the beginning of the next trading period (Figure 1).[7] The second reform measure aimed at the MSR guarantees that the withdrawal is sustainable and that not all allowances will eventually be returned to the market. As of 2023, the MSR will be capped at the number of allowances auctioned in the previous year; excess allowances will no longer be valid. Depending on the emissions forecast assumed, this will lead to an amount in the order of two billion allowances[8]—roughly the average cap for one year—being cancelled in 2023 (Figure 2).

1 European Parliament. "PROVISIONAL AGREEMENT RESULTING FROM INTERINSTITUTIONAL NEGOTIATIONS Subject: Proposal for a directive of the European Parliament and of the Council amending Directive 2003/87/EC to enhance cost-effective emission reductions and low-carbon investments." europarl.europa.eu. http://www.europarl.europa.eu/RegData/commissions/envi/inag/2017/11-22/ENVI_AG(2017)615245_EN.pdf (accessed 12 December 2017).

2 EUR-Lex. "DECISION (EU) 2015/1814 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 6 October 2015 concerning the establishment and operation of a market stability reserve for the Union greenhouse gas emission trading scheme and amending Directive 2003/87/EC." publications.europa.eu. https://publications.europa.eu/en/publication-detail/-/publication/01c4f171-6e49-11e5-9317-01aa75ed71a1/language-en (accessed 12 December 2017).

3 The LRF is based on the average yearly cap of the 2nd trading period (2008–2012) and results in 38 million allowances being subtracted each year in the 3rd trading period. From 2021 onwards, the LRF will be increased to 48 million allowances per year.

4 If the surplus in a given year is above the threshold, it triggers the MSR to take up allowances in the two consecutive years: The surplus in 2021 therefore leads to allowances being removed in 2022 and 2023. By our projections, allowances will be taken into the MSR in the five years from 2019–2023.

5 The projected surplus development shown in the graph is the result of two effects—the uptake of allowances into the MSR and the annual structural surplus development. According to our estimations, emissions will remain below the cap until 2025, leading to a structural surplus increase in these years. Despite this structural increase, from 2019 until 2023 the MSR will take up enough allowances to ensure an overall decrease in the surplus. From 2023 onward, the MSR is not triggered anymore; thus the structural increase in the surplus becomes apparent. From 2026 onwards, emissions are projected to be above the cap, leading to an ongoing structural decrease in the surplus.

6 According to the MSR decision (cf. DECISION (EU) 2015/1814), scarcity is defined as the amount of allowances in circulation being below an upper threshold. Allowances in circulation are the balance between supply (allowances issued) and demand (verified emissions). The upper threshold (above which MSR intake is triggered) is currently set at 833 million, taking into account allowances needed for upfront hedging by power companies.

7 Based on calculations by BMUB.

8 Based on calculations by BMUB.

"Taken together, these two measures send a strong signal to industry and electricity generators: policymakers take the goal of long-term decarbonization seriously."

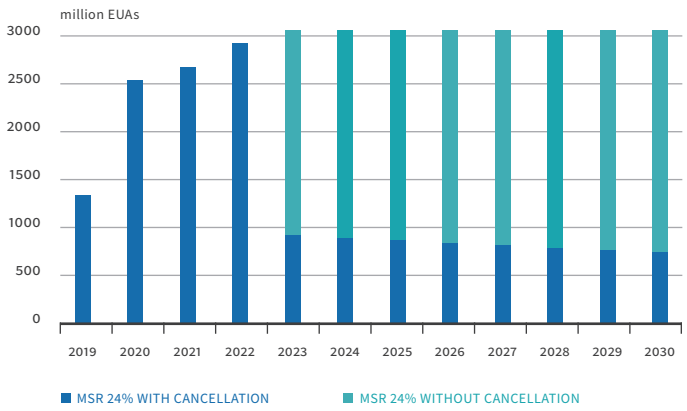


**Figure 2:** Capped Market Stability Reserve 2019–2030

Amount of allowances in the MSR with and without cancellation.[9]

In addition to strengthening the MSR, the regulation will now acknowledge the interplay between national and European climate policy: It allows member states to unilaterally cancel allowances in order to compensate for closures of electricity generation capacity in their territory due to additional national measures. The amount cancelled shall not exceed the average verified emissions of the installation concerned over a period of five years preceding the closure. The possibility to compensate for additional national measures acknowledges the fact that national climate targets and policies among member states differ. The effect of national climate policies on the EU ETS is also ameliorated by the MSR, but in order to account for significant structural changes, like the closure of coal power plants, additional compensatory measures may be necessary. Otherwise, additional mitigation efforts in one member state could be counteracted by more emissions in other member states—the so called 'waterbed effect'.

A strengthened system is expected to lead to a significant increase of the carbon price within the EU-ETS. This has to be counterbalanced by measures protecting the competitiveness of European industry, as well as solidarity mechanisms for lower-income Member States. Both are part of the final reform package.

To prevent unfair competition, industries at risk of carbon leakage will continue to receive free allocation of allowances in the fourth trading period. Benchmark values will be updated reflecting actual technological progress and will decrease at a minimum of 0.2% per year in order to incentivize innovation over time. A key component of the reform is designed to prevent across-the-board cuts to free allocation for industry, as was the case in the third trading period. With this aim in mind, 3% of the allowance cap will be put aside from the auctioning volume as a safety buffer, to be added to the free allocation volume if the amount of allowances applied for should exceed the amount reserved for free allocation. Furthermore, free allocation will be adjusted more dynamically in the case that significant production changes occur. In addition, an Innovation Fund was created that supports innovative low-carbon projects throughout the European Union. These measures will ensure that industries at risk of carbon leakage receive the amount of allowances they need, while maintaining incentives for innovation and avoiding over-allocation of allowances.

The reform package also includes a set of solidarity measures within the Union: The newly created Modernization Fund supports low-income Member States in modernizing their energy systems and introducing energy efficiency measures, as well as supporting a just transition to low-carbon economies in regions especially reliant on fossil fuels. No investments in coal-fired power plants are eligible under the fund, the only exception being the modernization of district heating generators in the poorest Member States. In addition, poorer Member States are still allowed to transitionally provide a limited amount of free allocation to their energy generators.

As with the first major reform of the EU-ETS in 2009, several lessons learned have been integrated in the recently agreed reform for the fourth trading period. The result will be an emissions trading system that is quickly returning to scarcity and able to react more flexibly to future imbalances between supply and demand, including those due to ambitious national climate policies. The reformed EU-ETS sets the EU on the right track to reach its 2030 target and provides incentives for reaching the EU's long-term decarbonization pathway.

9 From 2023 the MSR will be capped at the amount of allowances auctioned in the previous year; in the graph we use the gross amount foreseen for auctioning (before reductions by the MSR and auctioning of additional allowances for the Innovation Fund).

# The New Zealand Emissions Trading Scheme
## Getting Ready for Paris: Improving the NZ ETS

**Eva Murray, Charlotte Berg, Sarah Deblock**
Ministry for the Environment, New Zealand

Next year will mark ten years of operation for the New Zealand Emissions Trading Scheme (NZ ETS), and will be a critical year in the scheme's development as we implement the outcomes of the latest NZ ETS review. This review, concluded in 2017, allowed us to reflect on how the NZ ETS has had to evolve over the past ten years. This evolution has been due to a mix of changes in our domestic circumstances, governmental priorities and the international context.

> "An important conclusion of the review is that change is a constant—and we need to build in flexibility to respond to changing circumstances so the NZ ETS remains effective over time."

### The NZ ETS followed the Kyoto Protocol model

The NZ ETS was designed in 2007 and launched in 2008. At that time, as a small country aiming to play its role in global climate action and with few examples of operating emissions trading schemes to draw on, our point of reference was the Kyoto Protocol (KP).

The original framework for the NZ ETS closely aligned with the rules applying to New Zealand under the Protocol. This meant the scheme was intended to cover all gases and all sectors of the economy, and be fully integrated with the KP carbon market. The NZ ETS was thereby designed to operate within the international cap that the KP set on developed country emissions, with full fungibility between New Zealand Units (NZUs) and Kyoto-compliant units such as RMUs, CERs, and ERUs.

In some ways, this approach was appropriate for New Zealand's national circumstances. For example, coverage of the forestry sector as a source of both carbon dioxide removals and emissions is an unusual feature of the NZ ETS drawn from the KP. Including forestry in the NZ ETS helps New Zealand manage a major sector that represents both a key risk and opportunity for achieving its emission reduction targets.

New Zealand's large forestry estate, which makes up approximately 37% of New Zealand's land cover, has a significant impact on the country's net emissions as illustrated in Figure 1. The carbon price can help encourage new forest planting, which increases carbon dioxide removals and supports the long-term investments needed for forestry's continued role as a key export sector. Importantly, it also discourages deforestation—which is critical for New Zealand as most plantation forests are privately owned. The NZ ETS acts as a brake on land use change, while still allowing forest owners flexibility to compensate for emissions if they choose to deforest.

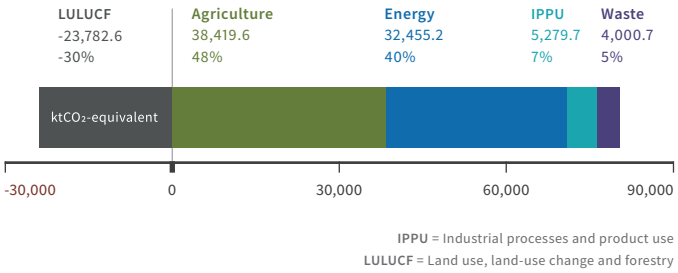


**Figure 1:** New Zealand's net emissions by sector in 2015[1]

With time, however, it became apparent that there were drawbacks to such strict alignment with the international framework. For example, full integration with the KP market meant that when international carbon prices collapsed from 2011 onwards, the carbon price in New Zealand plunged alongside them. A price differential between NZUs and KP units then arose when it became clear that the KP would be overtaken by a different regime. This encouraged NZ ETS participants to use many more international units for compliance than had been envisaged.

Responding to these developments in a timely and appropriate way was challenging. Although the NZ ETS legislation provided for regular and comprehensive policy reviews, the timeframes for these reviews did not coincide with when the government needed to address emerging problems. This resulted in necessary adjustments either taking longer than ideal to put in place, or being made in ways that were seen by market participants as ad hoc and unexpected.

### Reviewing the NZ ETS

The most recent review of the NZ ETS began in 2015, to coincide with the Paris Agreement and the setting of New Zealand's first Nationally Determined Contribution (NDC). New Zealand's first NDC target, to reduce emissions 30% below 2005 levels by 2030, is more challenging than our previous targets, and it is expected that ambition should increase over time. The review provided an important opportunity to consider how the NZ ETS should develop to take this new context into account, as well as to learn from the experiences outlined above.

1 Source: New Zealand's Greenhouse Gas Inventory 1990–2015, Ministry for the Environment.

Consultation and engagement with NZ ETS stakeholders formed a critical part of the review and helped identify key issues and potential solutions. The strongest theme from stakeholder feedback was that the way the NZ ETS had been managed had created significant regulatory uncertainty for market participants. This has undermined confidence and reduced incentives for businesses to invest in low-emissions technology.

This feedback fed through into two key findings—the NZ ETS needs:

- New features to allow it to better align with the Paris Agreement and with the increasing ambition of our emission reduction targets; and
- A regulatory framework that provides both more predictability for market participants and more flexibility for the Government to be able to adjust the scheme to reflect changing circumstances.

### Decisions resulting from the NZ ETS review

The review was conducted in two stages. The first stage resulted in a decision to phase out the 'one-for-two' measure, originally a transitional provision that allowed some participants to surrender one unit for every two tonnes of emissions, by 2019. This was the first step in aligning the NZ ETS with our targets, as it will reduce the current oversupply of NZUs in the market, another consequence of the extensive use of KP units outlined above.

Stage two of the review took a longer-term focus on making the NZ ETS more fit for purpose in light of the Paris Agreement and the increasing ambition of New Zealand's future targets. This stage concluded with several Government decisions in mid-2017, to:

- Introduce auctioning to the NZ ETS to align it with our emission reduction targets
- Develop an alternative price ceiling to replace the current NZD25 (~USD17.50) fixed price option
- Limit participants' use of international units in the 2020s
- Coordinate decisions on the supply of units in the NZ ETS over a five-year rolling period

Once implemented, these changes will provide the necessary components to give the NZ ETS its own overall cap on units, so that the Government can align the supply of units with our targets.

The rolling five-year period for setting unit supply volumes is arguably the key element of this package that will help to future-proof the NZ ETS. It is intended to provide a more predictable and transparent way to manage unit supply, improving regulatory predictability for participants by giving them visibility of NZ ETS settings for five years into the future. Its rolling nature, with settings extended by one year annually, is also expected to give the government sufficient flexibility to adjust the scheme as circumstances change.

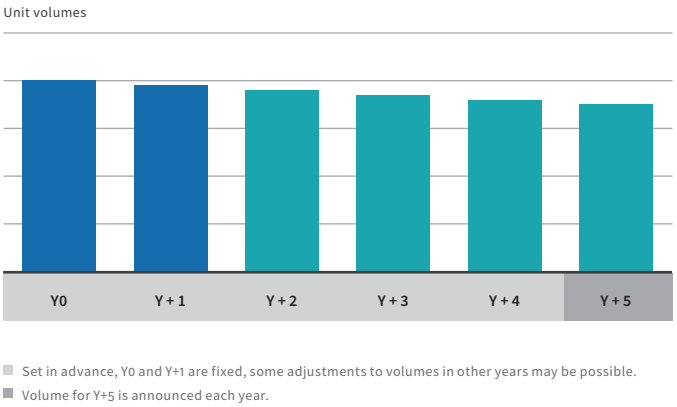


**Figure 2:** Illustration of how the five-year rolling period could work

### Implementing the review decisions

Our task now is to develop further advice on how these decisions can be implemented in practice. We are also looking at improving a range of other aspects of the NZ ETS. These include a package of changes relating to forestry, options for phasing out of free allocation, improvements to market information systems as well as other operational and technical elements. We expect to provide this advice to the government later this year. This will enable further consultation and engagement with stakeholders before legislative change, planned for 2019. New measures can then be in place ahead of 2021.

### Conclusion

It will always be challenging to find the right balance in the design of an ETS.

> "On one hand, participants seek regulatory predictability and stability, while on the other hand policy makers need the tools to maintain enough flexibility to respond to changing circumstances."

We expect that the new framework for the NZ ETS will put us in a much better position to manage this balancing act in a Paris Agreement world.

# China
## China's National Carbon Market and the Roadmap Ahead

Qian Guoqiang and Huang Xiaochen
SinoCarbon Innovation & Investment Co. Ltd.

On the 19th of December 2017, China's National Development and Reform Commission (NDRC) announced the official launch of the much-anticipated national emissions trading system (ETS). The announcement met the ambitious timeline set by the Chinese leadership two years ago to launch the Chinese national ETS by the end of 2017.

"It also comes at a significant moment in history, when the overall political context in China more than ever favors green development and the ideals of an ecological civilization."

Just a few months ago these ideas were consolidated into China's new national development strategy, established by the 19th National Congress of the Communist Party of China.[1] This has tremendous and far reaching impact on how the government directs the country, and how laws, regulations and policies will be formulated and implemented.

Already, China is undergoing a massive social and economic transformation. The new round of deepening reform, underway since 2014, has the objective to transition the country from a phase of rapid growth to one of high-quality development, which underlines a more balanced and environmentally friendly economy driven by innovation. The national ETS, as a market-based policy instrument, is part of this new round of deepening reform. It is an integral part of the new national development strategy following the concepts of innovation, coordination, greening, opening up and inclusiveness.

### State Council approves the Work Plan

The official announcement of the launch of the national ETS was marked by the release of the Work Plan for Construction of the National Emissions Trading System (Power Sector), (the "Work Plan"), approved by the State Council. The Work Plan outlines the targets and roadmap for the development of the national ETS, specifies the remaining work required to enable the start of trading activities, and confirms the plan to further improve and expand the carbon market. Trading activities under the newly established national ETS will not begin immediately, but plan to be phased in by 2020.

### The power sector as the starting point

China's national ETS will eventually cover eight key emitting sectors, starting with the power sector[2], then including the chemical, petrochemical, iron and steel, non-ferrous metal, building materials, paper making, and aviation sectors. Enterprises in these sectors that exceed the annual threshold of 26,000 tons of $CO_2$ emissions (energy consumption of more than 10,000 tce) are already requested by the government to report and verify their historical $CO_2$ emissions, with the aim to collect and improve data quality. This data will then support the development and implementation of sound allocation plans. Starting with the power sector is still significant. Even with the power sector alone, the national ETS will cover more than 1700 enterprises with combined emissions of over 3.3 billion tons of $CO_2$.

### A three-phase roadmap

The system will be developed and scaled up in three phases over the coming years.

(1) *The infrastructure completion phase:*
This will last about one year, in which the focus will be completing the legal foundation and market support systems, such as the trading, registry, and data reporting systems. In-depth capacity building will be carried out, targeting different types of carbon market actors, to enable them to administer or participate in the market.

(2) *The simulation trading phase:*
Expected to last an additional year, in which simulation trading for the power sector will take place. This phase will focus on testing the design and functionality of different elements of the national carbon market, gathering experiences, and further improving the system.

(3) *The deepening and expanding phase:*
Initially in this phase, only the compliance entities of the power sector will be expected to participate in allowance spot trading for compliance purposes. When the market is shown to perform well, with stable operation, the national ETS will be expanded to cover the seven other sectors on a step-by-step basis, depending on their readiness. Other types of trading products, market participants and transaction methods will then be explored. Domestic offsets that have also been used by the ETS pilots, known as Chinese Certified Emission Reductions (CCERs), are also expected to be made available during this phase.

### Work to be completed in 2018

Building on the extensive preparations since 2015, further work remains to be completed in 2018 to enable the national carbon market to become fully operational:

1 The recently concluded 19th CPC National Congress is a twice-per-decade event to elect China's leadership, guide its development path, and set national policy goals.

2 Including combined heat and power as well as captive power plants in other sectors.

(1) A "1 plus 3" legal framework will be completed. The State Council is expected to pass the "Interim Regulation on Carbon Emissions Trading", which will serve as the constitution of the national ETS. NDRC is also expected to pass three supplementary technical regulations, including the "Management Decree on Emission Reporting and Verification", the "Management Decree on the Accreditation of Third Party Verifiers", and the "Management Decree of Trading Activities".

(2) The development of two key electronic systems will be finished—the national registry and trading system. Under the supervision of NDRC, the registry will be located and managed in Hubei, and the trading system will be located and managed in Shanghai. They are expected to work together with peer provinces and cities such as Beijing, Tianjin, Chongqing, Guangdong, Jiangsu, Fujian and Shenzhen.

(3) Reporting and verification of the most recent historical data for the eight sectors is to be completed. The objective is to collect and verify data for the years 2016 and 2017, to complement the 2013–2015 data already in place. Additionally, all enterprises subject to reporting are requested to implement motioning plans. The work is expected to be completed in the first half of 2018.

(4) The allowance allocation plan for the power sector will be further improved. The allocation plan will be updated based on the latest 2016–2017 data, and is expected to be finalized in the second half of 2018. If the above-mentioned work is completed smoothly, allowances could be distributed to power companies in the second half of 2018 to enable simulation trading. Allocation plans for other sectors are also under deliberation.

### Some key uncertainties remain

Given the size and complexity of the Chinese national carbon market, the government is expected to take a cautious attitude towards its development and administration. In such a context, some uncertainties will need to be clarified in the coming years.

(1) It is still unclear when power companies will be required to surrender allowances for their first compliance. This depends on how long it will take to complete the first two phases outlined in the Work Plan. Under an ideal scenario, simulation trading could start by the end of 2018. In this situation, June 2020 could be the first deadline for covered entities to surrender allowances for compliance.

(2) There is no specific timeline for introducing other sectors. This depends on how the power sector ETS performs, the quality of data from the other sectors, as well as the progress made developing allocation methods for these sectors. Beyond these technical considerations, the decision is also a political matter. So far, it is estimated that the national ETS could be expanded to cover additional sectors after 2020.

(3) The role of CCERs in the national ETS is still to be clarified. In 2012, the NDRC issued the Interim Measures for the Management of Voluntary GHG Emission Reduction Transactions. These measures include guidelines for the issuance of domestically-produced CCER offsets. However, in March 2017, NDRC suspended all work relating to CCER registration and issuance, and the procedures and modalities are currently under review. It is not clear how the new CCER management system will look, or when it will start. NDRC has confirmed that CCERs will play a role in the national ETS, but without yet specifying the eligibility criteria of CCERs in the compliance market.

(4) It is unclear when China's carbon market will open to investors. China is taking a cautious approach to allow only compliance entities to participate in spot trading at the beginning. It plans to open the market to investors, and also allow trading of futures, forward allowances and other derivatives after 2020. But the timeline for introducing new market participants or trading products is not yet clear.

(5) Another key uncertainty is when and how exactly China's regional carbon markets would be integrated into the national ETS.

In conclusion, the official launch has demonstrated the strong political commitment of the Chinese government to employ the market-based mechanism of ETS to combat climate change and transform the economy. It also puts forward a concrete work plan to develop a fully-fledged carbon market after 2020.

> "It is pertinent for China to take a step-by-step approach, considering the complexity of designing and overseeing the world's largest carbon market and the learning-by-doing nature of such a journey."

So far, tremendous efforts and concrete progress have been made in preparing the infrastructure, developing the capacity and creating the enabling conditions for a national ETS to take root. On this basis, we have good reason to be optimistic.

# Latin America
## An Interview with Policymakers in Colombia, Chile and Mexico

**Sebastian Carranza**, Ministry of Environment, Colombia
**Nicolás Westenenk**, Technical Adviser, Partnership for Market Readiness, Chile
**Victor Escalona**, Ministry of Environment and Natural Resources (SEMARNAT), Mexico

Climate policy continues to take shape in Latin America. Colombia, Chile and Mexico have already implemented carbon taxes, and are either considering or actively planning an ETS. For this Status Report, ICAP conducted a series of informal interviews with policymakers and experts working closely within these jurisdictions. We here provide their personal insights into the latest developments and priorities in their countries, the role of ETS in their climate policy mix, and their international collaborations, as well as a timeline of major developments.

### Sebastian Carranza – Ministry of Environment, Colombia

*Could you give us an update on developments in your jurisdiction?*
Colombia's National Climate Change Policy (NCCP) sets the framework for our activities. The NCCP bundles together many of the strategies developed over the last five years, including the REDD+ Strategy and the National Adaptation Plan. Deforestation is a major source of emissions in Colombia, so REDD+ and adaptation are certainly important aspects. In addition, in 2016 we adopted a national carbon tax of USD 5/t$CO_2$ as part of a broader tax reform and started implementing the tax in 2017. The tax includes a non-payment mechanism which allows for the use of project-based offsets, which has recently raised several questions about how this can fit with a national approach. Over the past five years we have also been working with the Partnership for Market Readiness (PMR) and currently we have been exploring the opportunities and challenges of a national ETS with Carbon Trust, MOTU, University of Los Andes, Fedesarrollo and Econometría.

*What role do you see for ETS in your country's climate policy mix?*
In 2017, we proposed a Climate Change Law, and the draft includes a provision that could form the legal basis for an ETS. We hope to have it passed by the end of this government's term in mid-2018. Although at the moment we do not have all the elements or the technical capacity to develop a framework for an ETS, the first step is to have a legal basis. However, climate policy development has slowed recently with the peace process taking priority. Our plan is to continue the analytical work with the PMR through studies on ETS administration, scope, regulation points and registry issues, among others. Within two years we will have more clarity on the necessary steps, and can potentially establish an ETS within the next four to five years. Although we believe it is a good option, there is a lot of work to be done before we can think of implementing an ETS in our country.

*Can you tell us about your international climate collaborations?*
Chile, Peru and Mexico have been cooperating through the Pacific Alliance[1], exploring opportunities for regional collaboration. The Pacific Alliance helps to set the political agenda, in addition to the Cali Declaration[2] and the Paris Declaration on Carbon Pricing in the Americas[3] promoting carbon market cooperation in the region. The collaboration is very interesting, yet challenging because Latin American countries are very particular in their approaches and contexts. At the technical level, it has allowed us to work together on aspects such as MRV, registries, information platforms, standards, and accreditation. This collaboration not only enables progress towards our political aspirations, but also helps with transparency, information tracking and building robust systems. However, it is hard to talk about regional carbon markets or the exchange of mitigation outcomes without a comprehensive national approach. We need to combine the elements of each country and work out how to provide not only new economic development but a whole new economic sector for our countries based on carbon pricing.

*What key messages would you like to share?*

> "The implementation of the peace process is one of the biggest upcoming challenges in Colombia, and carbon pricing must be part of the solution."

Currently, it is a top priority for policymakers, where many ministries, local government institutions and indigenous leaders are involved. People that used to belong to the FARC group live primarily in small towns in rural areas, and they will be searching for new ways to make a living. Therefore, the relationship between the peace process and drivers of deforestation is evident. We need to provide a sustainable livelihood for these communities. Carbon pricing, where it allows for the use of carbon credits from the forestry sector, can therefore be a part of a sustainable development solution.

1 https://alianzapacifico.net/en/what-is-the-pacific-alliance/

2 https://alianzapacifico.net/en/?wpdmdl=9850

3 https://www.gob.mx/cms/uploads/attachment/file/279823/Declaration_on_Carbon_Pricing.pdf

**Nicolás Westenenk** – Technical Adviser,
Partnership for Market Readiness, Chile

*Could you give us an update on developments in your jurisdiction?*
Although Chile does not have a climate law yet, we are now reviewing our NDC to 2020, and that should form the framework for Chile's official climate policy. There is a change of government soon, and the incoming party wants to move forward on developing a climate law. In any case, we have the carbon tax that came into effect last year, and although it is primarily a tax reform instrument, it is still relevant for climate policy. On another level, we have the energy policy, which states that it must be aligned with our climate goals, which is important because the energy sector is responsible for 77% of Chile's GHG emissions. More broadly, we have a climate change mitigation plan and we are working on an adaptation plan. The forestry sector also has a climate strategy, and is doing an interesting job to foster policies regarding native forestry and conservation. This sector is an important part of the conversation, as it could be a provider of certificates or offsets.

*What role do you see for ETS in your country's climate policy mix?*
A carbon tax is a very good starting point. It is certainly a good way to work on the MRV that is required anyway for an ETS. But an ETS could provide more flexibility and alternatives to the compliance sectors and give some certainty regarding emissions reductions. Also, you have greater acceptability with ETS given that you are providing entities with more flexibility. Obviously that depends on how you design the ETS, for example, which mechanisms you use for price management and to prevent carbon leakage - the provisions that are needed to give stakeholders the certainty to achieve our targets without damaging the economy.

*Can you tell us about your international climate collaborations?*
We all see that a robust MRV system is going to be required, either for a carbon tax or for the use of offsets or for an ETS—for any instrument we are considering, we are going to need a solid MRV basis. That has been the focus of our collaboration in the Pacific Alliance. Primarily we are examining how a regional MRV could look like, where countries have similar requirements, rules and procedures. We have a similar focus in our collaboration with Canada on MRV rules for the region.

"This is a good opportunity for us to come together and figure out how we can achieve emissions reductions as a regional group rather than as individual countries."

Our collaboration with the PMR has been very helpful. So far we have done technical capacity building as well as a lot of consultation whereby we gained feedback and involvement of stakeholders. The PMR has been crucial in enabling our proposed MRV for the carbon tax to be implemented. Looking ahead, we will continue working with the PMR on carbon markets and cost-effective carbon pricing instruments. The next stage will focus on further developing our MRV and also on consultation and participation processes. We are also considering building a climate policy simulation tool, which is an exercise intended to be shared with the international community.

Over the long term we are looking at the possibilities of linking. Things are moving in the right direction, though we have a lot of work to do. Definitely, MRV work is crucial for successful linking. It is also important that we look to what kind of policies would be linked. It would be hard to link carbon taxes, so we need to consider offsets or eventually ETS. We also need to analyze what other countries are looking for in a link—if we are only offering offsets to each other then we will not have a very successful market. If we could work towards cap setting with a view to broadening the market, that would be great in any scenario.

*What key messages would you like to share?*
I would say most of us are convinced that carbon pricing instruments are a way to correct market failures. But, I think we should give more focus on the co-benefits of the instruments. Most of the time we hear that carbon pricing would be good for emissions reductions but at net-costs for the country. I think that shouldn't be the way it is conceived. Carbon pricing instruments can also create jobs, reduce health impacts and bring a number of other benefits. If there is a way to better quantify and communicate these co-benefits, it would be of great impact in the policy making process.

**Victor Escalona** – Ministry of Environment and Natural Resources (SEMARNAT), Mexico

*Could you give us an update on developments in your jurisdiction?*
The last year has been very busy in Mexico. We have engaged with the private sector in discussions on ETS advantages and regulation. In parallel we have been conducting technical work, analyzing historical data for 2014–2016 in order to inform the cap-setting process, and conducting a study on competitiveness issues for a variety of sectors. In October, we launched our ETS simulation, one of our major capacity building exercises that will last for ten months. With over 100 companies registered, we hope to gain good experience and raise the level of knowledge of ETS. Looking ahead to this year, we hope to move fast with implementing the pilot phase of the Mexican ETS.

*What role do you see for ETS in your country's climate policy mix?*
The formal position of the Ministry is that the carbon tax and the ETS will coexist. From the technical aspect, I see them as complementary instruments. The carbon tax was the first carbon price signal set by Mexico, and even if the rate is low, it is almost universally applied. It does not target any specific sector, but rather all fuel consumers. The ETS could then work on top of the tax, as it is much easier to target specific sectors with an ETS. In this way, ETS is just one of many policy tools that we are considering, which is also the approach outlined in Mexico's NDC.

*Can you tell us about your international climate collaborations?*
We have been engaging with the WCI jurisdictions of California, Ontario and Québec purely on the technical side. Conversations started two and a half years ago between the National Forestry Commission of Mexico (CONAFOR), the California Air Resources Board (ARB) and SEMARNAT, on the basis of our MoU with California. It became a great opportunity for SEMARNAT to learn from ARB about many aspects of how they designed their system. Last year we invited Ontario and Québec to join. It has been a good chance for the technical teams to get to know each other and we have discussed many design elements of ETS. We know that each jurisdiction has a different path to follow, but with the same objective—to design a system that is as similar to each other as possible in order to be able to link. However, although there have been public expressions of interest in Mexico linking with the WCI, we are not naïve—we know we have a lot of work to do before we can even begin discussions. So far there has only been work done on the technical side, and the political process has yet to really begin.

We are also collaborating with colleagues from Latin America through the Pacific Alliance. There we are undertaking studies on MRV supported by the World Bank. We also have informal collaboration, for example, at every PMR event we get together with Peru, Colombia and Chile. We find that we have many similar positions, especially regarding Article 6 of the Paris Agreement. We are also hoping to collaborate with Chile on emissions trading.

*What key messages would you like to share?*
There are two key messages. The first is from the political perspective and a view shared by policymakers here. We strongly consider ETS to be the most cost effective option that we have for reducing emissions in the energy and industrial sectors. There are, however, different measures that we need to take for the other sectors such as transport, waste or agriculture. Secondly,

> "… our top priority now is to have the pilot ETS ready, and then to make it work. The pilot needs to be as robust and credible as possible."

We are learning from other jurisdictions in Europe and North America, and their main advice has been to 'make it simple'—start with a system that is easy and affordable to administer. Finally, the pilot will be a mandatory system, so building a consensus with the private sector is crucial.

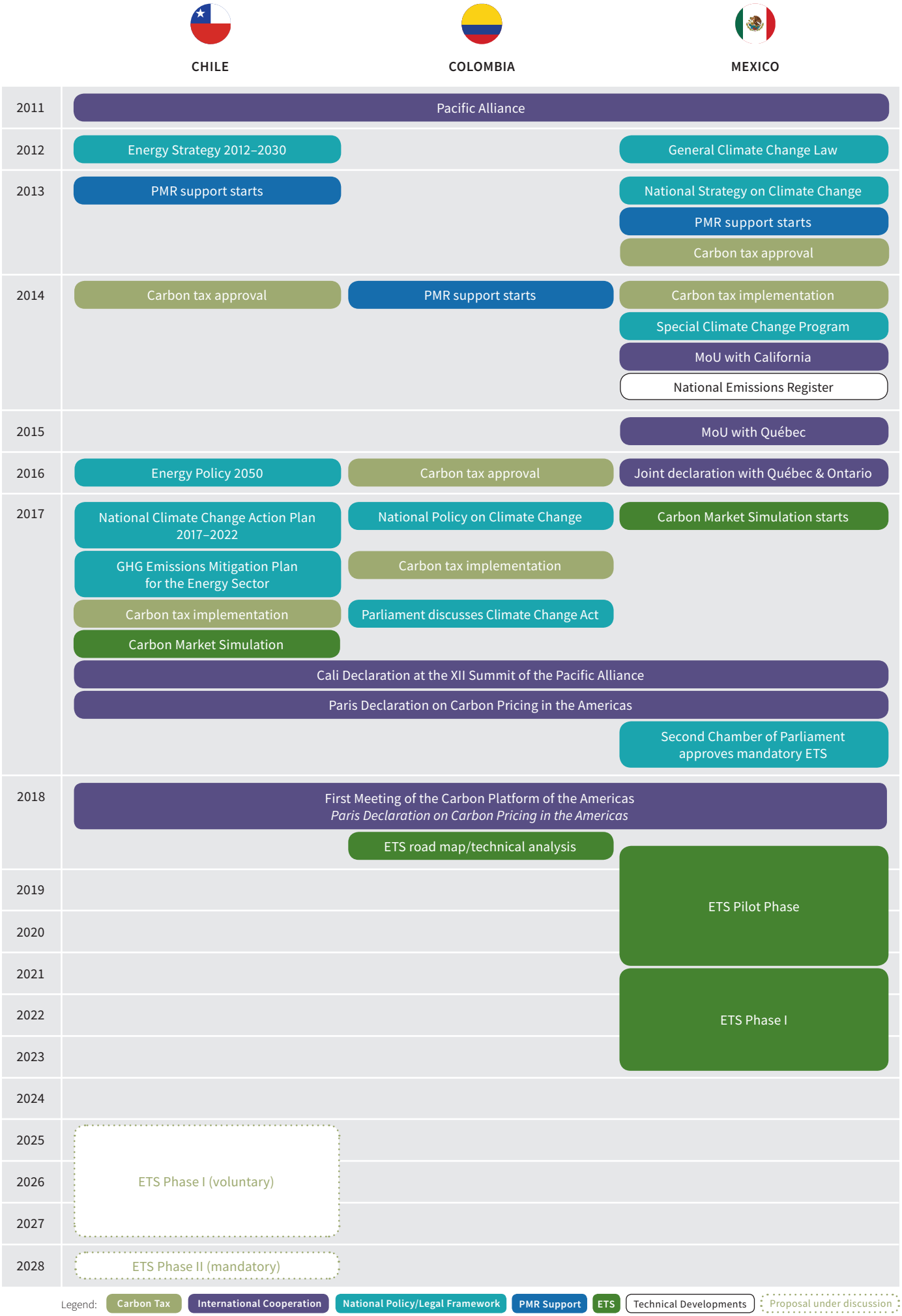


**Figure 1:** Timeline of Major Policy Developments and Regional **Collaborations**