International Carbon Action Partnership

EMISSIONS TRADING WORLDWIDE

Executive Summary

Status Report 2022

Emissions Trading Worldwide

International Carbon Action Partnership (ICAP)
Status Report 2022

Executive Summary

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Executive Summary

Climate change is the defining challenge of this decade. Without concerted efforts to decarbonize economies around the world and reduce emissions, our collective goal of limiting global warming to 1.5°C, or even to 2°C, will be out of reach. Governments and companies are responding to the climate emergency by ramping up their ambition: setting new climate targets and committing to net zero by mid-century.

Achieving net zero in time will be challenging. Governments' net zero commitments cover roughly 90% of global GHG emissions, but many are not yet supported by near-term policies. To reach these long-term goals, countries must rapidly implement adequate policy frameworks and those already in place must be bolstered. In this context, emissions trading will be critical, and will increasingly play a key role as the policy tool of choice to drive decarbonization. At the end of 2021 ETSs covered 37% of emissions in jurisdictions that have enshrined their net zero targets in law and 17% of emissions in jurisdictions where net zero targets are under development or discussion.

ALMOST 1/3 OF THE GLOBAL POPULATION LIVES UNDER AN ETS IN FORCE

The 2022 International Carbon Action Partnership (ICAP) Status Report demonstrates how ETS developments are proliferating and picking up pace across the globe, with an increasing number of systems. There are now 25 such systems in force, covering 17% of global GHG emissions. 22 ETSs are currently under development or under consideration, mainly in South America and South-East Asia. Today, almost 1/3 of the global population lives under an active ETS.

Existing systems are maturing, becoming increasingly resilient to external shocks, and several governments around the world are undertaking reforms to align their ETS with net zero targets. This increase in global ambition has resulted in an increase in carbon prices across almost all systems, reflecting the expectations of more ambitious emissions caps in the future. Allowance prices in the EU ETS reached a record high of more than USD 100 at the end of 2021, and the market's auctions generated a revenue of USD 36,7 billion in 2021, representing a growth of almost 63%. The rise in allowance prices and revenues can be observed in nearly all systems, from North America across to the Asia Pacific. In North America, the allowance price in California and Quebec grew from USD 18 to USD 28, and from USD 8 to USD 14 in the Regional Greenhouse Gas Initiative (RGGI). Across the Asia-Pacific region, significant price rises were recorded in Korea, from USD21 to USD 30, and in New Zealand, from USD 27 to USD 46.

While carbon prices are rising against a backdrop of high energy prices in several regions around the world, public acceptance of carbon pricing is essential to its political feasibility, effectiveness, and longevity. Emissions trading offers tools to ensure that the most vulnerable are protected from negative impacts, such as California's ring-fencing of ETS revenues to support disadvantaged and low-income communities and household rebates via utility bills. By the end of 2021, global ETSs had raised a record USD 161 billion in auctioning revenues, growing by just over 50% since the end of 2020.

In the years ahead, we must continue to learn from each other's experiences on how best to design programs to support a just transition, communicate the benefits of carbon pricing, and how to mitigate its impacts where needed, to gain and maintain public support.

New systems are gaining momentum in their design and implementation. China's national ETS commenced trading, becoming the largest carbon market in the world in terms of covered emissions. It covers over 4 billion tCO_2 representing over 40% of its emissions. 2021 also witnessed the launch of national carbon markets in the UK and Germany.

This newest edition of the ICAP Emissions Trading Worldwide report lays out the latest developments and salient ETS trends from the past year. A series of infographics examine and compare ETS facts and figures, and detailed factsheets have been compiled on each system currently in force, under development, or under consideration. The report also features in-depth articles from policymakers and experts from key jurisdictions around the world.

To ensure that the maritime sector contributes to the EU's climate ambitions, the European Commission made the proposal to extend the scope of the EU ETS to cover CO_2 emissions from large ships. In its article, the Commission presents the key stages of this sectoral expansion, the main opportunities and challenges, as well as the need for further action in the framework of the International Maritime Organization. The article provides important insights for moving forward on maritime decarbonization.

Meanwhile, the UK ETS has now been up and running for one year. An article from the UK government provides reflections on the progress the UK has made and how it has aligned the system with its national net zero framework. As a frontrunner on net zero climate legislation, the UK's experience yields valuable lessons on how to balance ambition with competitiveness and preserving stability for participants.

California has seen firsthand the destructive force of climate change, with wildfires ripping through the state this past year and exacerbating existing disparities in the community. Its article lays out the jurisdiction's innovative approaches to ensuring a sustainable and fair transition to net zero. The California ETS provides policymakers around the world with an important real-world example of how distributional impacts of carbon pricing instruments like ETS can be addressed and environmental justice advanced. This issue will continue to grow in relevance as jurisdictions hotly debate how to strengthen and expand their own ETSs.

The world's largest carbon market, the Chinese national ETS, is discussed by experts from SinoCarbon, a prominent Chinese think-tank. Having now completed its first compliance cycle, China is looking ahead at strengthening the system's legal foundations, expanding the scope of the ETS to different industrial sectors, improving data quality, and making decisions on offset use and how to allocate allowances.

The Carbon Pricing in the Americas Platform (CPA) sheds light on the increasing interest in carbon pricing across the Americas. With its article, the CPA reflects on the role and prospects for carbon markets in the region, and how it will continue to support these discussions by fostering dialogue, sharing best practice, and facilitating the convergence of carbon pricing policies.

Finally, the International Energy Agency (IEA) details what it means to translate net zero targets into policy measures that can deliver the necessary level of emission reductions and removals. The article assesses the role of emission removals and the use of both domestic and international carbon markets to drive them. This is an emerging debate as we strive for net zero, and understanding the implications of these technologies will increasingly gain relevance.

JURISDICTIONS MAKING UP 55% OF GLOBAL GDP ARE USING EMISSIONS TRADING

55%

A Year of ETS Developments

During the course of 2021, global ETSs have undergone a series of developments, including changes to make them compatible with the net zero targets many jurisdictions have committed to. New systems are also being introduced as jurisdictions work to design and implement ETSs. Below, we summarize updates from the systems currently in force (i.e., those already in operation) and those under development (i.e., jurisdictions in which a mandate for an ETS is in place, and where system rules are currently being drafted), as well as other jurisdictions with major ETS developments in 2021.

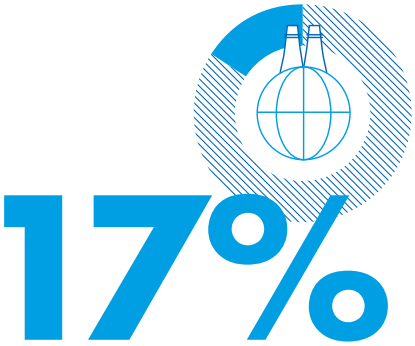
EUROPE AND CENTRAL ASIA

European Union: Following the release of the "Fit for 55" package in July 2021, a comprehensive reform package is underway to align the EU ETS with the new EU-wide 2030 climate target. The proposed reforms include adjustments to the cap, the MSR, benchmarks, the inclusion of the maritime sector, a border carbon mechanism, and a separate fuel ETS for buildings and road transport. The widely-awaited proposal was one of the key drivers pushing EU carbon prices to record levels in 2021.

Germany: Germany successfully launched its national ETS in 2021. It covers fuels from the transport and building sectors upstream and complements the EU ETS. In 2021, regulated entities opened registry compliance accounts, started monitoring their emissions and bought the first allowances from the exchange or authorized intermediaries.

Finland: In March 2021, the Ministry of Transport and Communications in Finland set up a cross-sectoral working group tasked with assessing and preparing for a national ETS to cover the road transport sector.

Kazakhstan: The system made a full transition to benchmarking as the only allocation method. The cap for 2021 had been established at 159.9 $MtCO_2$, for one year only, as opposed to the three-year cap of the previous 2018-2020 phase.



OF GLOBAL GHG EMISSIONS ARE COVERED BY AN ETS

Montenegro: The EU and Western Balkan states, including Montenegro, agreed on a roadmap for climate policy implementation in October 2021. Under the "Green Agenda Action Plan", the EU will support Montenegro's efforts to align its national legislation with the bloc's by 2024.

Sakhalin: In 2021, the results of the regional GHG inventory in Sakhalin were published, showing that 95% of emissions are energy related. The Russian Ministry of Economic Development in cooperation with the government of Sakhalin prepared a draft law to introduce mandatory requirements for carbon reporting and compliance with the allocated emissions allowances for entities emitting 50,000 tCO_2e and more. The draft passed the first State Duma reading in December 2021 and is expected to become law in early 2022. Four other regions in Russia have expressed an interest in joining the experiment.

Switzerland: The Swiss ETS started its third trading period in 2021. The ministry updated allocation benchmarks in line with the EU ETS and introduced a market stability mechanism to counter future demand shocks.

Turkey: In the lead up to COP 26, Turkey became the latest country to ratify the Paris Agreement and redoubled its efforts to introduce an ETS.

Ukraine: 2021 was the first year MRV procedures, as adopted in the framework law, were applied. The first monitoring reports for 2021 are expected by the end of March 2022. Based on at least three years of data from the MRV system, Ukraine plans to develop legislation to establish an ETS, which the Minister of Environmental Protection and Natural Resources announced in January 2021 could launch in 2025.

United Kingdom: The UK ETS successfully completed its first year of operation. High allowance prices triggered the cost containment mechanism in both December 2021 and January 2022, with the authorities deciding on both occasions not to redistribute or release additional supply into the market.

NORTH AMERICA

California: California implemented program changes, including the introduction of a price ceiling and two price containment reserve tiers below it, reductions in the use of offset credits and a steeper allowance cap decline to 2030. By May, prices of California Carbon Allowances had reached record highs.

Massachusetts: In March 2021, Massachusetts passed a new climate law with binding emission reduction targets of 50% by 2030 and 75% by 2040, compared with 1990 levels, as well as net-zero emissions by 2050. The state's ETS changed to full auctioning in 2021.

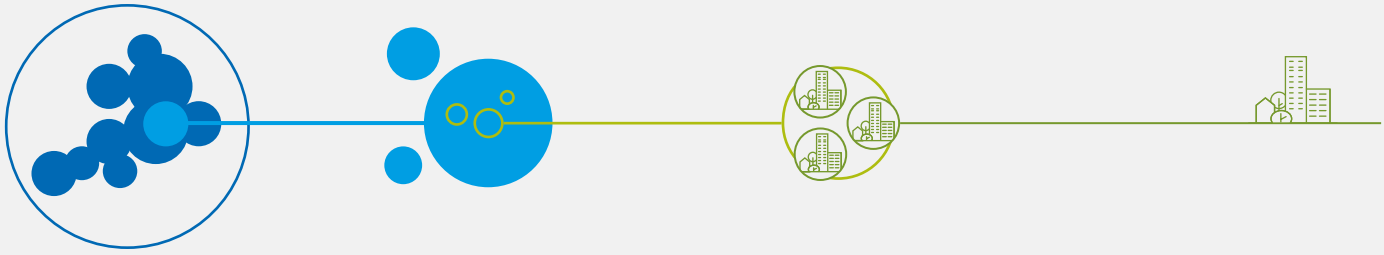
Nova Scotia: The current federal approval for the province's carbon pricing system expires at the end of this year and Nova Scotia is reviewing options for post-2022. Nova Scotia held a public consultation in 2021, which included questions on carbon pricing as well as broader environmental goals and climate change policies.

North Carolina: In July 2021, North Carolina's Environmental Management Commission (EMC) instructed the DEQ to initiate a rulemaking process to establish an ETS that is consistent with the design features of the RGGI Model Rule, which would enable the state to join the regional partnership.

Oregon: Oregon adopted rules that establish a new Climate Protection Program that includes an ETS for fuel suppliers. The first compliance period is 2022-2024, with free distribution of compliance instruments under the cap.

Québec: The cap-and-trade system began its fourth compliance period with new rules, including amended price tiers for reserve allowances and reformed eligibility for offset projects. The second half of the year saw increased allowance prices.

Regional Greenhouse Gas Initiative: In May 2021, the final regulation to establish an ETS in Pennsylvania covering CO_2 emissions from the power sector and to join RGGI was released, alongside updated modeling results of the effects of the ETS. An emissions containment reserve started operating in 2021. The RGGI states initiated the Third Program Review in summer 2021 to analyze program successes, impacts,



potential additional reductions to the cap post-2030, and other design elements.

Transport and Climate Initiative: In the second half of 2021, most of the participating states halted their participation in TCI-P. As a result, it is currently unlikely that the implementation of TCI-P in its current form will continue.

Washington: The "Climate Commitment Act" was signed into law, establishing an economy-wide cap-and-invest program to start operation in January 2023. It will cover entities emitting more than 25,000 tCO_2e per year. The Washington State Department of Ecology is currently developing the rules to implement the system.

LATIN AMERICA AND THE CARIBBEAN

Colombia: The "Climate Action Law", which entered into force in December 2021, consolidates the commitments presented in Colombia's NDC and sets a goal to fully implement the ETS by 2030.

Mexico: In 2021, the first and second allowance allocations took place. The Ministry of Environment and Natural Resources concluded the analysis and revision of the information for the first compliance period and participants surrendered allowances corresponding to this period, achieving a 97% compliance rate.

ASIA PACIFIC

China: China's national ETS – the world's largest in terms of covered emissions (4.5 billion tCO_2) – started operating in 2021. As confirmed as part of the "1+N policy" framework in October 2021, it will be an important measure to achieve China's targets to peak emissions by 2030 and reach carbon neutrality by 2060. Throughout 2021, a series of ETS policy documents on key design elements such as MRV and market operation were finalized, and trading of carbon emissions allowances (CEAs) commenced in July. At the end of 2021, the government announced the successful conclusion of the first compliance period covering 2019 and 2020, with high compliance rate.

Chinese Pilots: 2021 saw the transition of the electricity generation sector from Chinese regional ETSs to the national system. Meanwhile all eight regional carbon markets continued operating and further developed allocation, offsetting, MRV and trading rules. Several of them (such as Beijing, Chongqing, Guangdong, Fujian, and Tianjin) also expanded their scope or are in preparation to do so.

Indonesia: After a voluntary intensity-based ETS pilot for the power sector took place between April and August 2021, the much-anticipated "Presidential Regulation on the Economic Value of Carbon" was signed in October, which will serve as the framework for Indonesia's carbon pricing instruments. A hybrid "cap-trade-and-tax" system was also announced, to start April 2022.

Malaysia: The Malaysian government published a policy document with plans for a domestic ETS. In 2022, a trading platform for voluntary carbon market credits is planned to start, which will serve as preceding infrastructure for the ETS.

New Zealand: 2021 was a year of major reforms for the NZ ETS, following on from the passing of the "Climate Change Response (Emissions Trading Reform) Amendment Act 2020". The reforms include a cap on unit supply and the introduction of an auctioning mechanism. Auctioning began in March 2021. The fixed price option, which previously acted as a price ceiling, was withdrawn after 2020, and was replaced with a cost containment reserve.

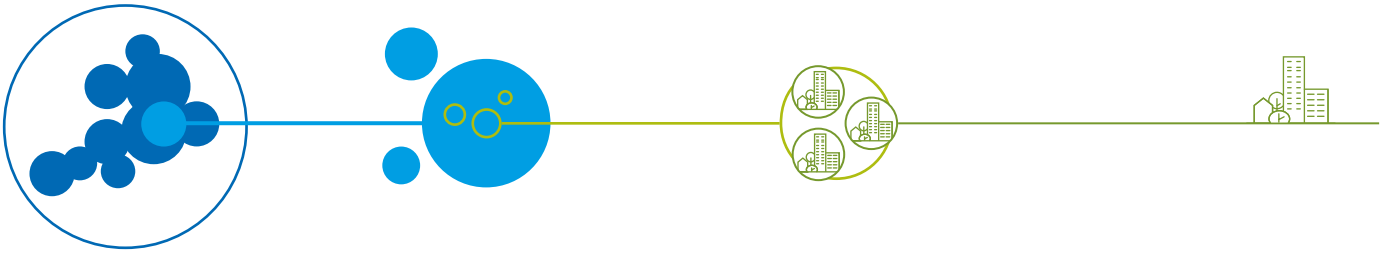
Republic of Korea: The Korean government decided to suspend the monthly allowance auctions from February to May 2021, following assessments of low allowance prices and oversupply for the 2020 compliance year, in part due to lower emission in covered entities from the impacts of the COVID-19 pandemic. In the second half of the year, both prices and trading volumes increased.

Vietnam: In January 2022, the Government of Vietnam issued a comprehensive set of regulations under the "Law on Environmental Protection", including provisions for the development of a national ETS with a declining cap corresponding to Vietnam's NDC, and the establishment of a carbon crediting program.

From Supranational to Local

Emissions trading systems operate at every level of government

This infographic demonstrates the diversity and complexity that exists with respect to the level of government at which emissions trading can be implemented. At one end of the spectrum, the EU ETS operates supranationally in all EU Member States plus Iceland, Liechtenstein, and Norway. At the other end, city-level ETSs are in operation, for example, in Shenzhen and Tokyo. Multiple ETSs may be in force in countries like Germany, where some emissions are covered by the EU ETS and others by the German 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 ETSs exist, with some linked domestically or internationally. In the rest of ICAP Status Report 2022 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 consideration.



1 Supranational

EU Member States
+ Iceland
+ Liechtenstein
+ Norway

8 Countries

China
Germany
Kazakhstan
Mexico
New Zealand
Republic of Korea
Switzerland
United Kingdom

19 Provinces & States

California
Connecticut
Delaware
Fujian
Guangdong
Hubei
Maine
Maryland
Massachusetts
New Hampshire
New Jersey
New York
Nova Scotia
Oregon
Québec
Rhode Island
Saitama Prefecture
Vermont
Virginia

6 Cities

Beijing*
Chongqing*
Shanghai*
Shenzhen
Tianjin*
Tokyo

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

**JURISDICTIONS MAKING UP 55%
OF GLOBAL GDP ARE USING EMISSIONS TRADING**

55%

1/3

**ALMOST 1/3 OF THE GLOBAL POPULATION LIVES
UNDER AN ETS IN FORCE**

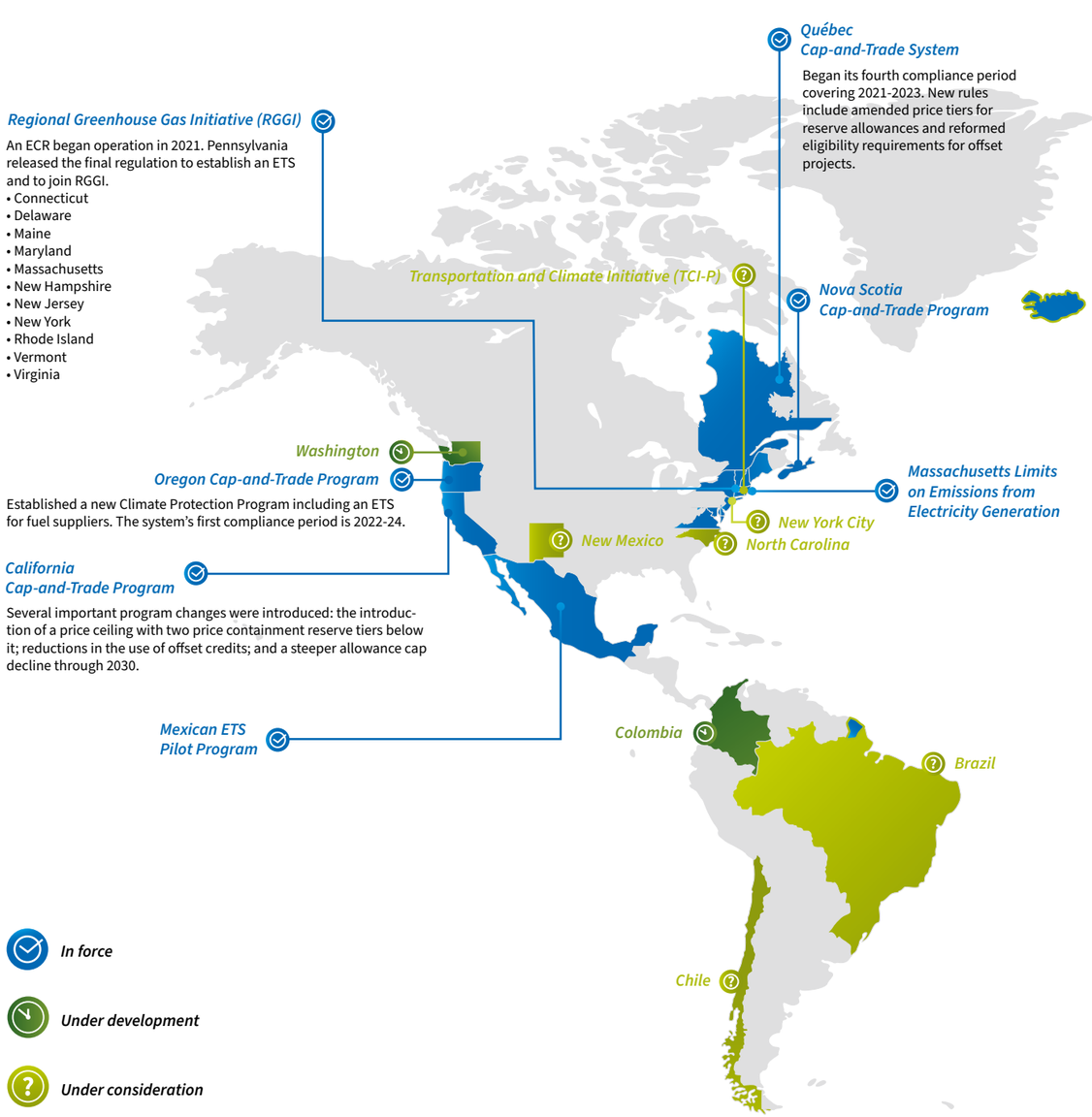
17%

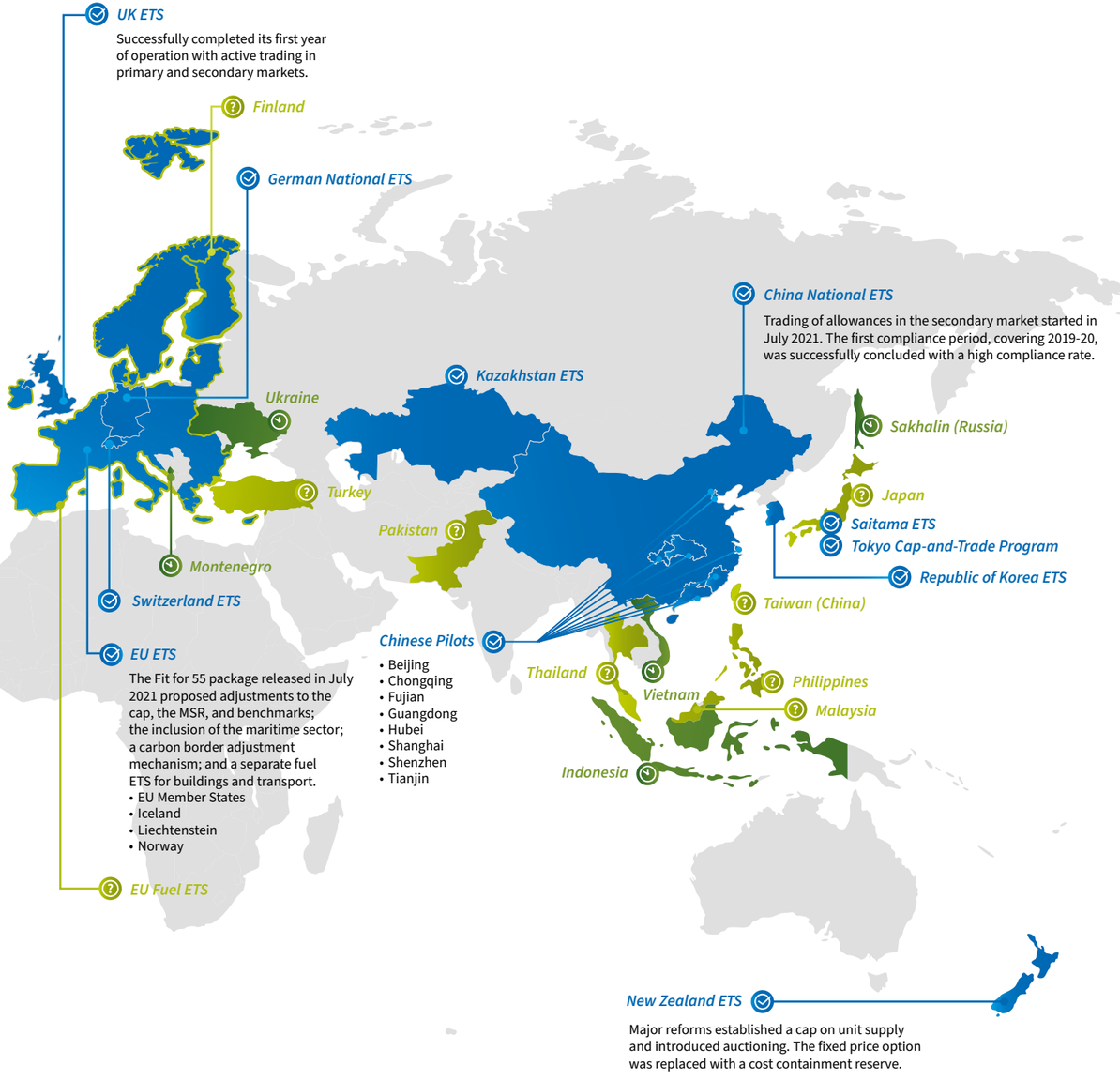
OF GLOBAL GHG EMISSIONS ARE COVERED BY AN ETS

Emissions Trading Worldwide

The state of play of cap-and-trade in 2021

The ICAP ETS world map depicts emissions trading systems currently in force, under development or under consideration. As of January 2022, there are 25 ETSs in force. Another seven are under development and expected to be in operation in the next few years. These include ETSs in Colombia, Indonesia, and Vietnam. 15 jurisdictions including Brazil, Finland, and Japan 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, the jurisdiction has a system in force but is also considering an additional system, it is depicted in blue but also features a (light) green border (e.g. Finland). There is currently no jurisdiction with both an ETS in force and another system under development.

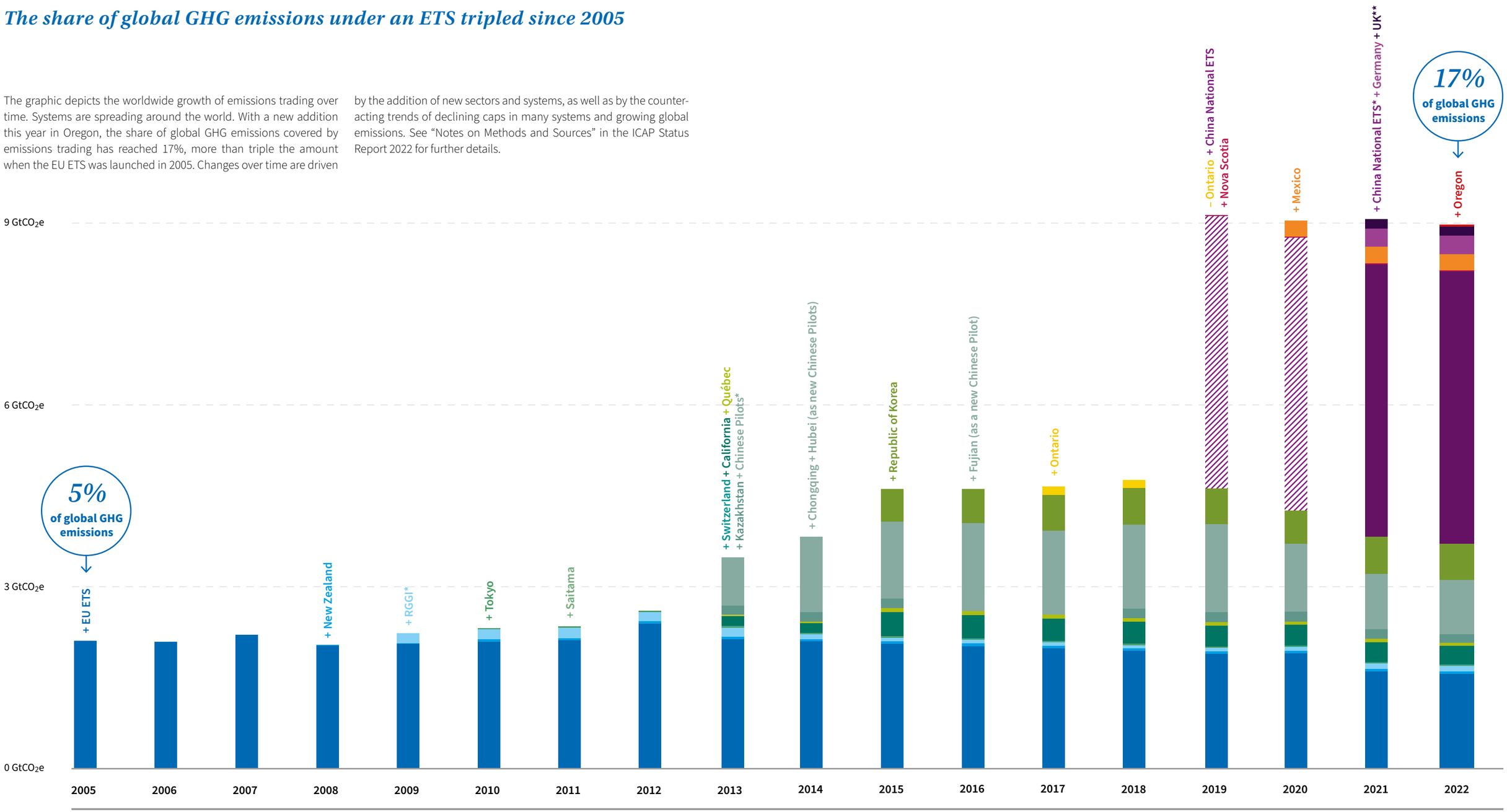




Global Expansion of ETS

The share of global GHG emissions under an ETS tripled since 2005

The graphic depicts the worldwide growth of emissions trading over time. Systems are spreading around the world. With a new addition this year in Oregon, the share of global GHG emissions covered by emissions trading has reached 17%, 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” in the ICAP Status Report 2022 for further details.



* RGGI includes New Jersey (as of 2020) and Virginia (as of 2021).

* Beijing, Guangdong, Shanghai, Shenzhen,Tianjin

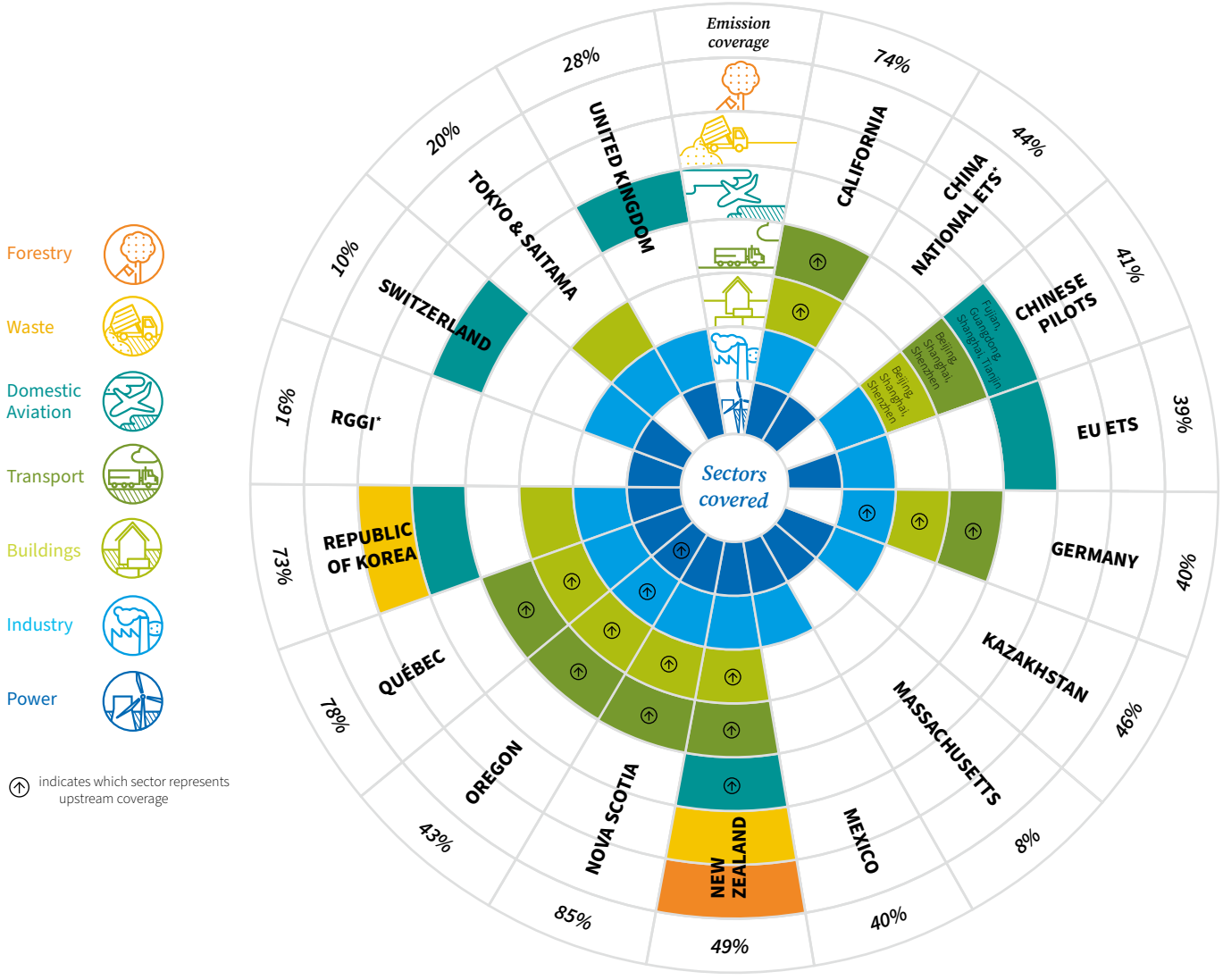
* The Chinese National ETS came into force in 2021 but has retroactive compliance obligations in 2019 and 2020, indicated above by the striped bar

** 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 2021. Systems are listed clockwise alphabetically, with the numbers in the outermost ring indicating the share of aggregate emissions covered by the system. 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 are covered. The jurisdictions' respective factsheets provide more information on system coverage. Note in particular that the coverage figures in the ETSs in China and for RGGI reflect CO_2 emissions only. The graphic includes only sectors which are covered by at least one ETS. See "Notes on Methods and Sources" in the ICAP Status Report 2022 for further details.

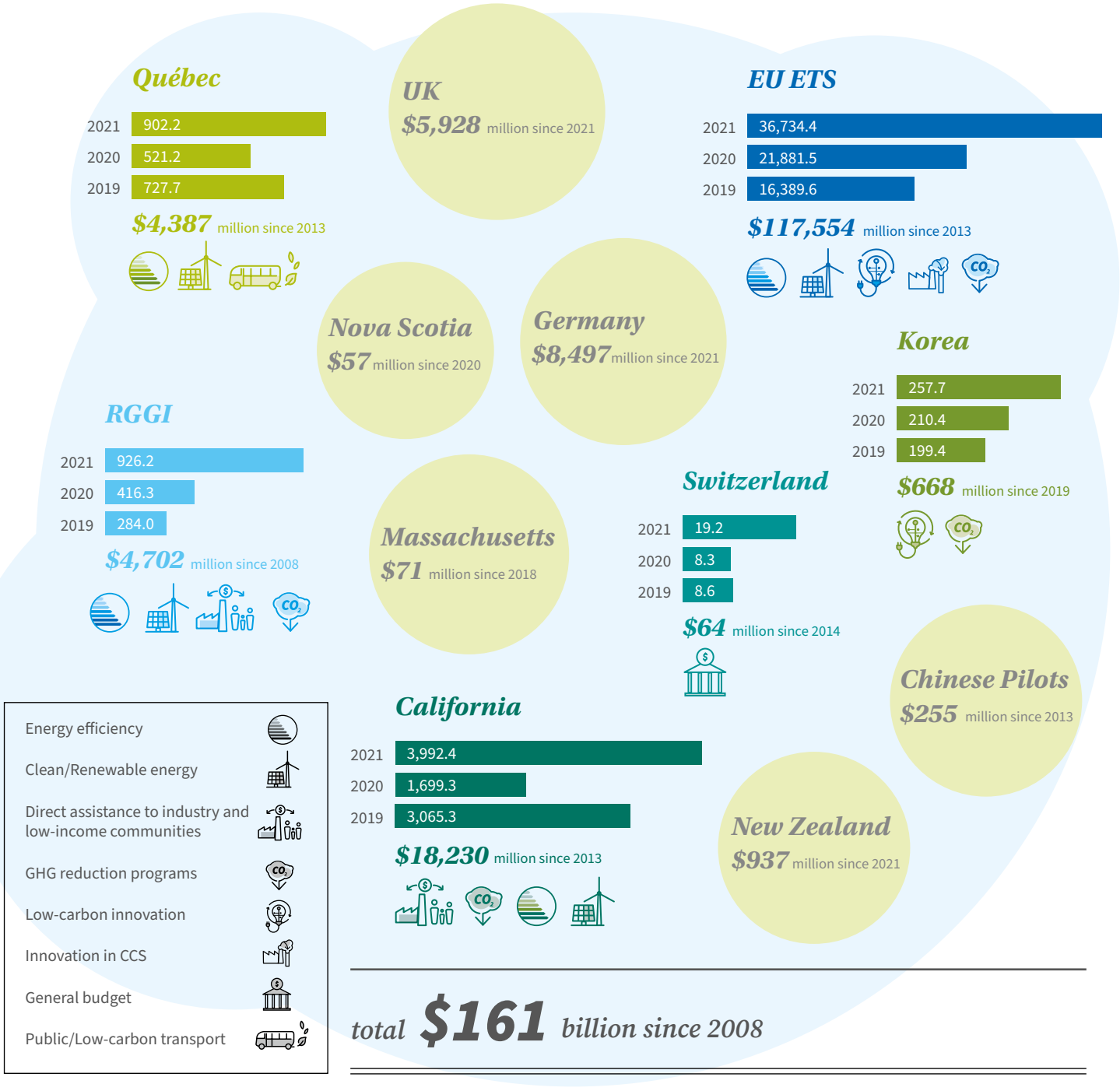


* Coverage numbers reflects CO_2 emissions only

Auctioning Revenue

Emissions trading as an additional source of government revenue

Allowance auctions generate revenue that can be used in areas reflecting jurisdictional priorities. Jurisdictions have tended to use auction revenues to fund climate programs, including on energy efficiency, low-carbon transport, and clean and renewable energy. Revenues have also been used to support energy-intensive industries, as well as to assist disadvantaged and low-income groups. The amount of revenue collected depends on the jurisdiction's size, ETS coverage, share of auctioned allowances and allowance prices. By the end of 2021, systems worldwide raised over USD 161 billion cumulatively. See "Notes on Methods and Sources" in the ICAP Status Report 2022 for further details.



Different Shapes of ETS

A comparative look at key metrics in selected systems

The axes on each graph correspond to a specific metric. **Coverage** shows the share of the jurisdiction's GHG emissions covered under the ETS, except in China and RGGI where it represents CO_2 emissions only. **Allowance price** is measured in USD per metric tonne of CO_2e and averaged over 2021. **Auction share**, expressed as a share of the 2021 cap, denotes the share of allowances that were auctioned and generated revenues for the jurisdiction's government. **Offset use** indicates the share of a compliance entity's obligations that can be met using approved offsets. To aid comparison, the axes share the same scale across graphs. See "Notes on Methods and Sources" in the ICAP Status Report 2022 for further details.

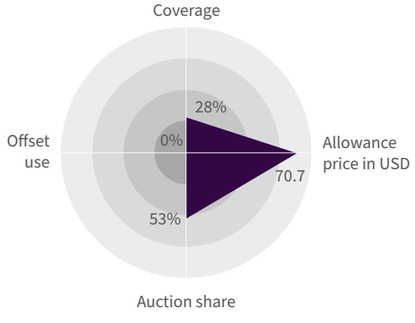
Coverage
Share of jurisdiction emissions covered by the ETS (0-100%)

Allowance price
Average USD price over 2021 per tonne of CO_2e (USD 0-80)

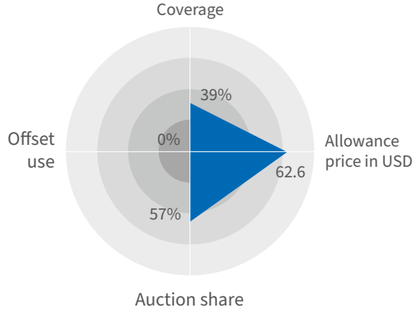
Auction share
Share of allowances not allocated for free (0-100%)

Offset use
Share of compliance obligations whihc can be met using offsets (0-10%)

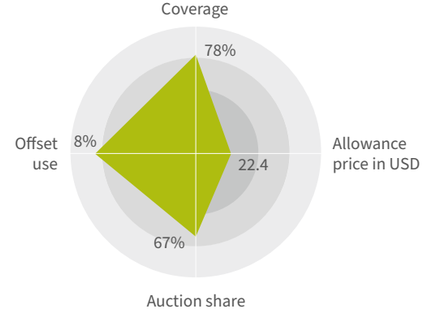
UK



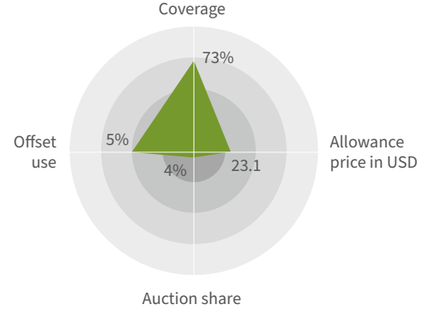
EU ETS



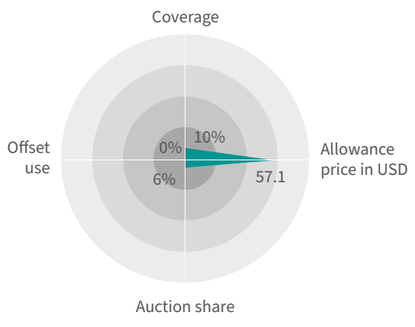
QUÉBEC



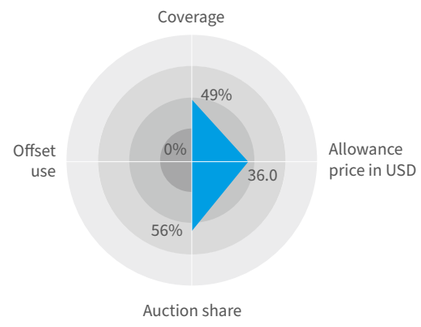
REPUBLIC OF KOREA



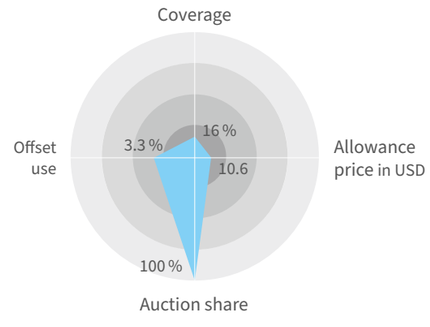
SWITZERLAND



NEW ZEALAND



RGGI



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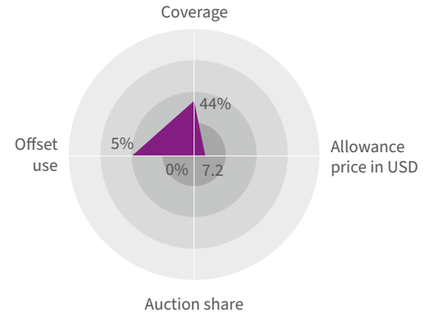

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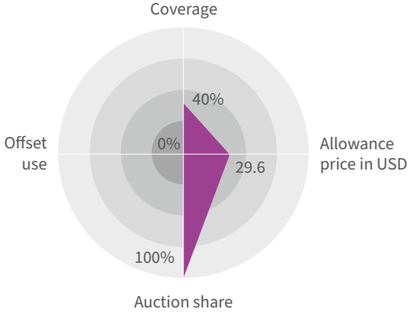
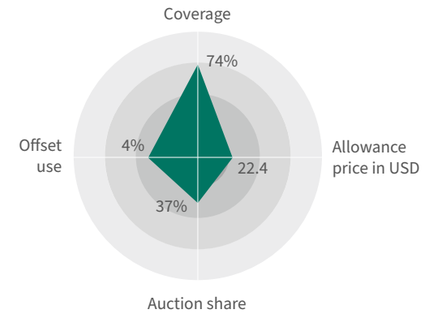


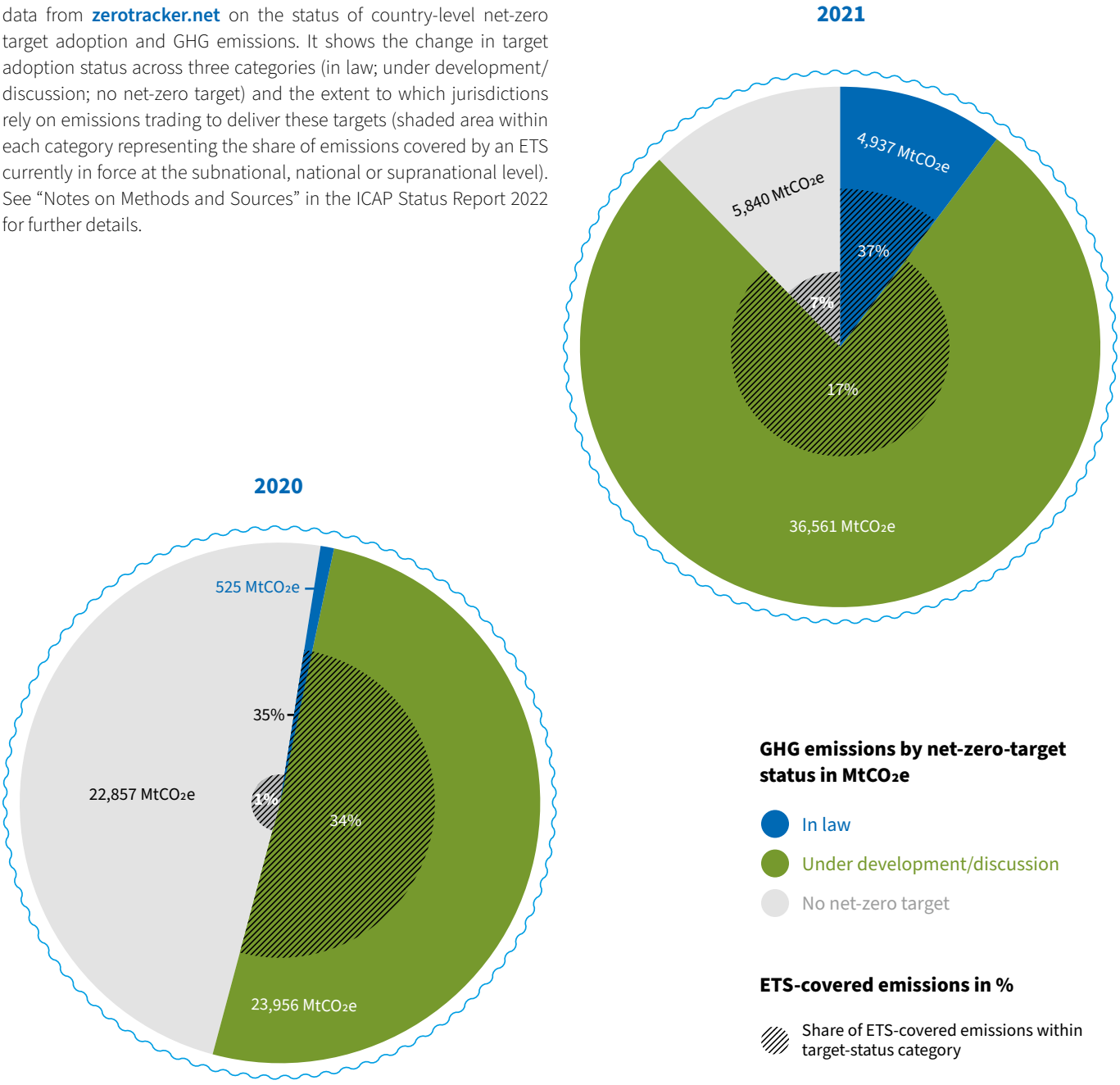
CALIFORNIA



Net-Zero Targets and ETS

ETS as an important policy instrument for the net-zero transition

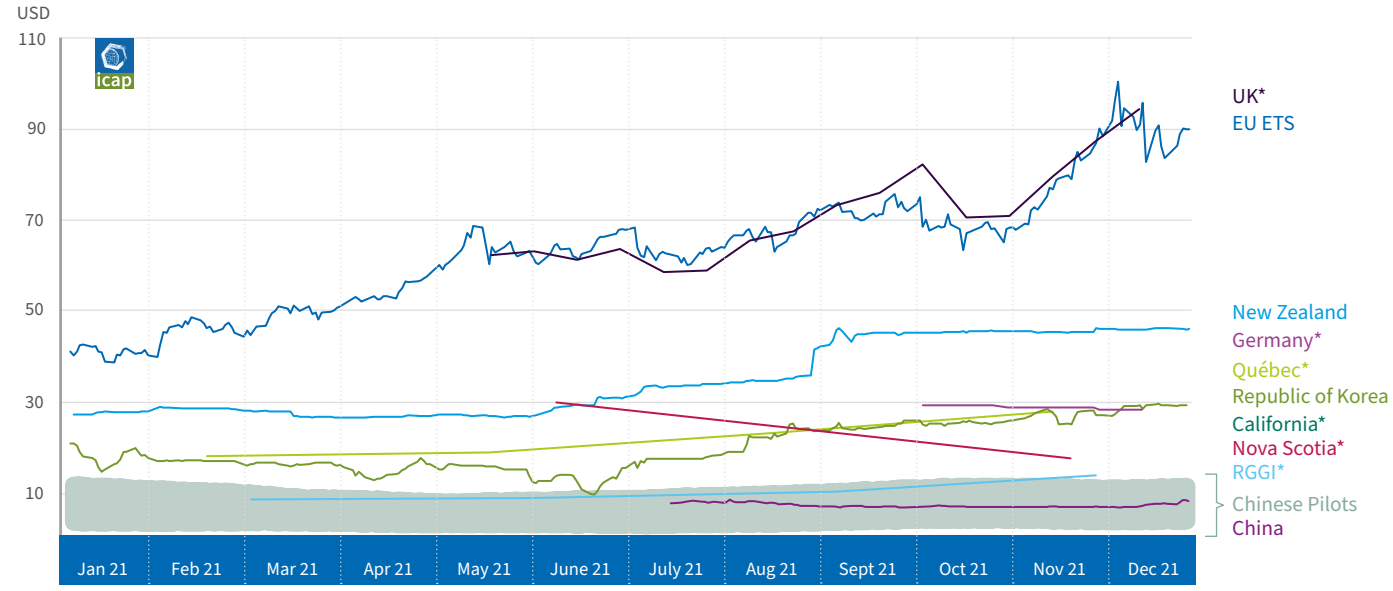
Around the world an increasing number of jurisdictions, representing an ever-greater share of global GHG emissions, are adopting mid-century net-zero emissions targets to limit global warming. Emissions trading is an important component of the climate policy portfolios aimed at achieving these targets. This infographic combines ETS-covered emissions data from ICAP Secretariat with data from **zerotracker.net** on the status of country-level net-zero target adoption and GHG emissions. It shows the change in target adoption status across three categories (in law; under development/ discussion; no net-zero target) and the extent to which jurisdictions rely on emissions trading to deliver these targets (shaded area within each category representing the share of emissions covered by an ETS currently in force at the subnational, national or supranational level). See "Notes on Methods and Sources" in the ICAP Status Report 2022 for further details.

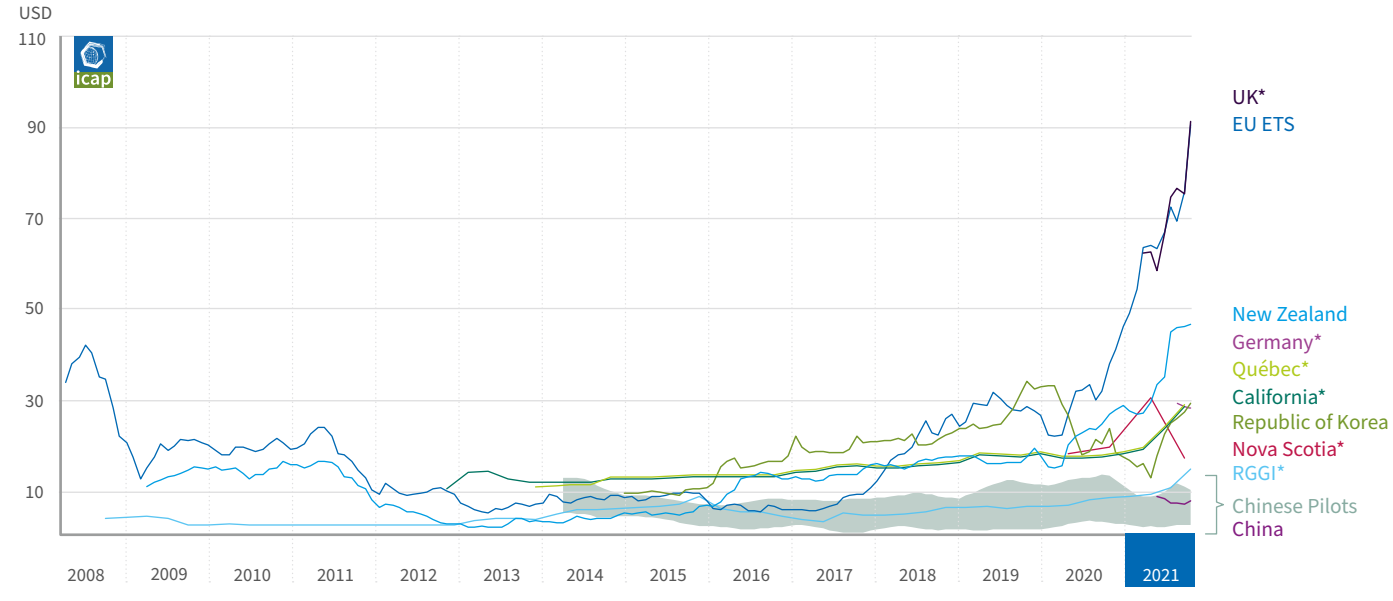


Allowance Price Developments

2021 in a longer historical context

This infographic uses data from the ICAP Allowance Price Explorer to visualize developments allowance markets in 2021 (top panel) and in a long historical context since 2008 (bottom 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. Prices in the top panel are the daily observations in the systems with secondary market data, and the clearing prices in the systems with primary market data on the day of the auction/sale. In the bottom panel, daily observations are averaged over the calendar month. In both panels, observations in non-USD currencies are converted to USD using monthly exchange rate data from the IMF. The shaded areas indicate the range of prices observed in the Chinese pilot ETSs. See "Notes on Methods and Sources" in the ICAP Status Report 2022 for further details.





* primary market prices

About the International Carbon Action Partnership

Founded in 2007, ICAP brings together policymakers from all levels of government that are operating an emissions trading system (ETS) or are taking steps to introduce one. The Partnership provides a unique platform for governments to discuss the latest knowledge and practical experiences with emissions trading. Since its formation, ICAP has established itself as an ETS knowledge hub and its membership has grown to 33 members and seven observers.

ICAP's Objectives

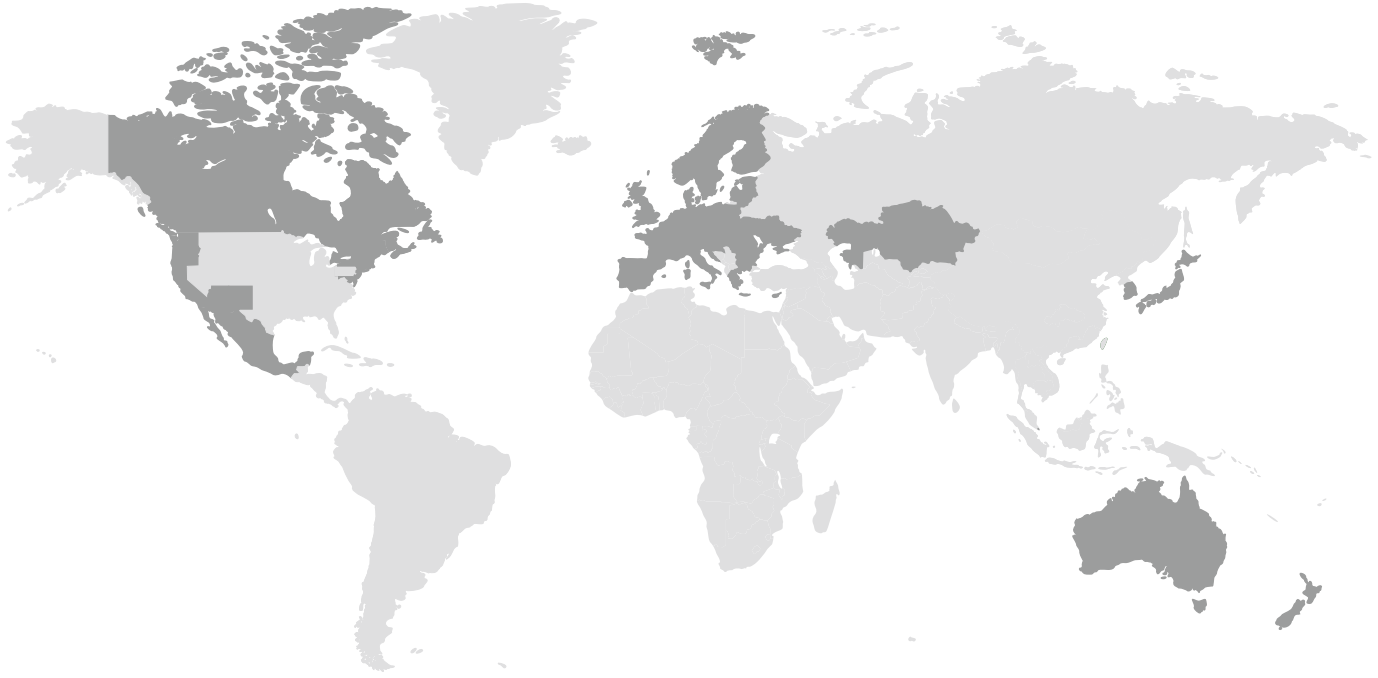
- Share best practices and learn from each other's experiences with ETS
- Help policymakers recognize ETS design compatibility issues and opportunities for establishing an ETS at an early stage
- Facilitate future linking of trading programs
- Highlight emissions trading as a key aspect of an effective climate policy response
- Build and strengthen partnerships amongst governments

Members (as of February 2022)

Arizona, Australia, 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, Japan, Kazakhstan, the Republic of Korea, Mexico, Singapore, and Ukraine



ICAP members & observers

22 *Countries*

16 *Provinces & States*

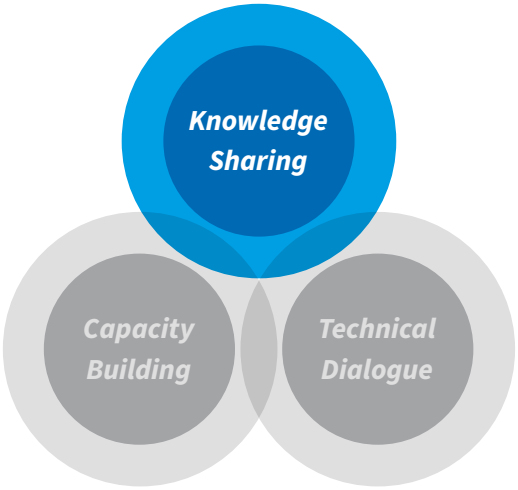
1 *Union*

1 *City*

The three pillars of ICAP's Work

KNOWLEDGE SHARING, TECHNICAL DIALOGUE, AND CAPACITY BUILDING

Through these three pillars, ICAP creates a holistic approach to delivering meaningful ETS support. This encompasses ICAP's role as a knowledge hub for ETS through our knowledge sharing tools and activities, ICAP's capacity-building courses around the world, and the ongoing technical dialogues on pertinent design topics.



Knowledge Sharing

ICAP acts as a unique repository of information on emissions trading, promoting it as an important policy instrument to address climate change. Over the years, ICAP has become an ETS knowledge hub for all people who want to learn more about emissions trading and the latest developments relating to ETS worldwide.

ICAP WEBSITE

As the primary knowledge sharing channel, the ICAP website has been reconceptualized and renewed, enabling smooth navigation across components and featuring ICAP's key services and knowledge products more prominently, underlining ICAP's credibility as a knowledge hub for state-of-the-art information on ETS.

ETS MAP

The ICAP ETS Map is one of the main features of the ICAP website. It provides and visualizes up-to-date information on ETSs around the world – including systems that are in force, under development and under consideration. The interactive map features downloadable factsheets and gives granular information on individual design aspects.

ICAP ALLOWANCE PRICE EXPLORER

The quarterly-updated Allowance Price Explorer is an interactive tool which lets the user compare price developments between ETSs. With full data downloads as well as deep diving on market stability mechanisms, this tool allows the user to create individualized charts.

KEY PUBLICATIONS

ICAP publishes a variety of different knowledge products on various topics of ETS design and implementation, drawing on the rich experience of all ICAP jurisdictions. Among many others, these publications include:

- The PMR-ICAP ETS Handbook, which provides a detailed step-by-step guide to ETS design and implementation and incorporates the latest in ETS thinking, best practice design, and experiences from ETS jurisdictions around the world. An updated version was published in April 2021 and is available in various languages.

- The series of ICAP Briefs on ETS basics, which was initiated in 2015 and thoroughly updated ever since. The ICAP Briefs provide simple explainers on what is an ETS and how it operates in practice. To reach a wider audience, the ICAP Briefs are available in English, Spanish, Portuguese, French, Russian, Mandarin and Korean, and can be downloaded from the ICAP website.

- The annual ICAP Status Report, which has become a prominent reference on the state of domestic ETSs around the world since its first edition in 2014.

Technical Dialogue

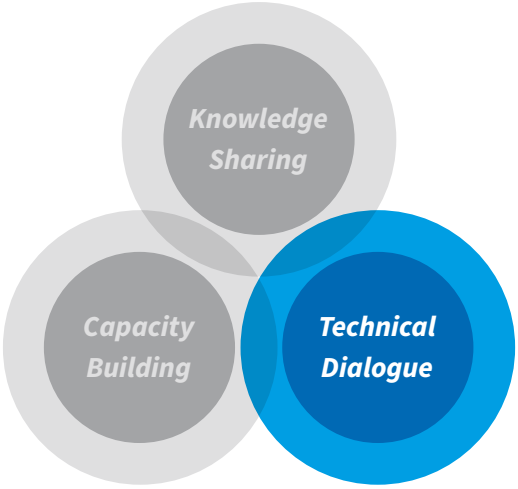
The technical dialogue workstream focuses on key aspects of emissions trading, drawing on the rich experience of all ICAP jurisdictions and facilitating dialogue and exchange on ETS issues among experts and people interested in carbon markets.

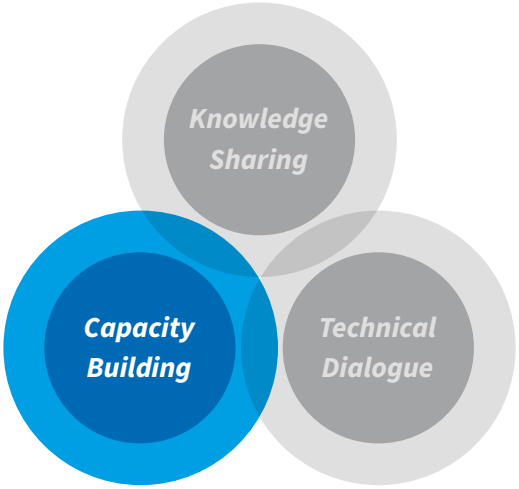
ICAP has been working on a variety of issues in different formats, including workshops, webinars, papers and reports.

In 2021, ICAP focused on emissions trading and net zero, which resulted in the paper on 'Emissions Trading Systems and Net Zero: Trading Removals' and an accompanying virtual workshop.

The paper sought to understand the challenges that net-zero emission targets could present for the operation of ETSs and developed a series of models for the possible interactions between markets and removal units from negative emissions technologies.

Other important topics of the technical dialogue workstream include dialogues on competitiveness and carbon leakage, emissions trading and international cooperation, ETS and Article 6, and ETS linking.





Capacity Building

Since 2009, ICAP has held courses on emissions trading for developing countries and emerging economies. These include the ICAP ETS courses, which are supported and funded by the European Commission, as well as in-country and virtual courses with various other partners. Over the past years, a total of 700 participants from more than 60 countries have participated in these courses, learning about all aspects of the design and implementation of emissions trading as a tool to mitigate GHG emissions. Due to the COVID-19 pandemic, the capacity building work stream has adapted and evolved into several virtual formats, which include multi-day ETS virtual workshops and trainings, like the ICAP Online ETS Academy 2021. Seventy-nine participants from over 30 countries and four continents were selected to attend the academy, giving them the opportunity to deepen their understanding of ETS design and implementation.

In addition, ICAP launched a new series of virtual webinars with the support of the European Commission. These virtual 90-minute webinars, called 'ETS for Policy Practitioners', are held on a monthly basis and cover different specific ETS topics targeting ICAP alumni as well as the broader climate community globally.

Both the emergence of new ETS jurisdictions, and government and other staff rotations creates a basic and rising level of demand for ETS training in the upcoming years. ICAP aims to meet this need by continuing to convene and organize its successful ICAP Training Courses on Emissions Trading.

24 *Courses*

700 *Participants*

60 *Different Countries*

4 *Continents*

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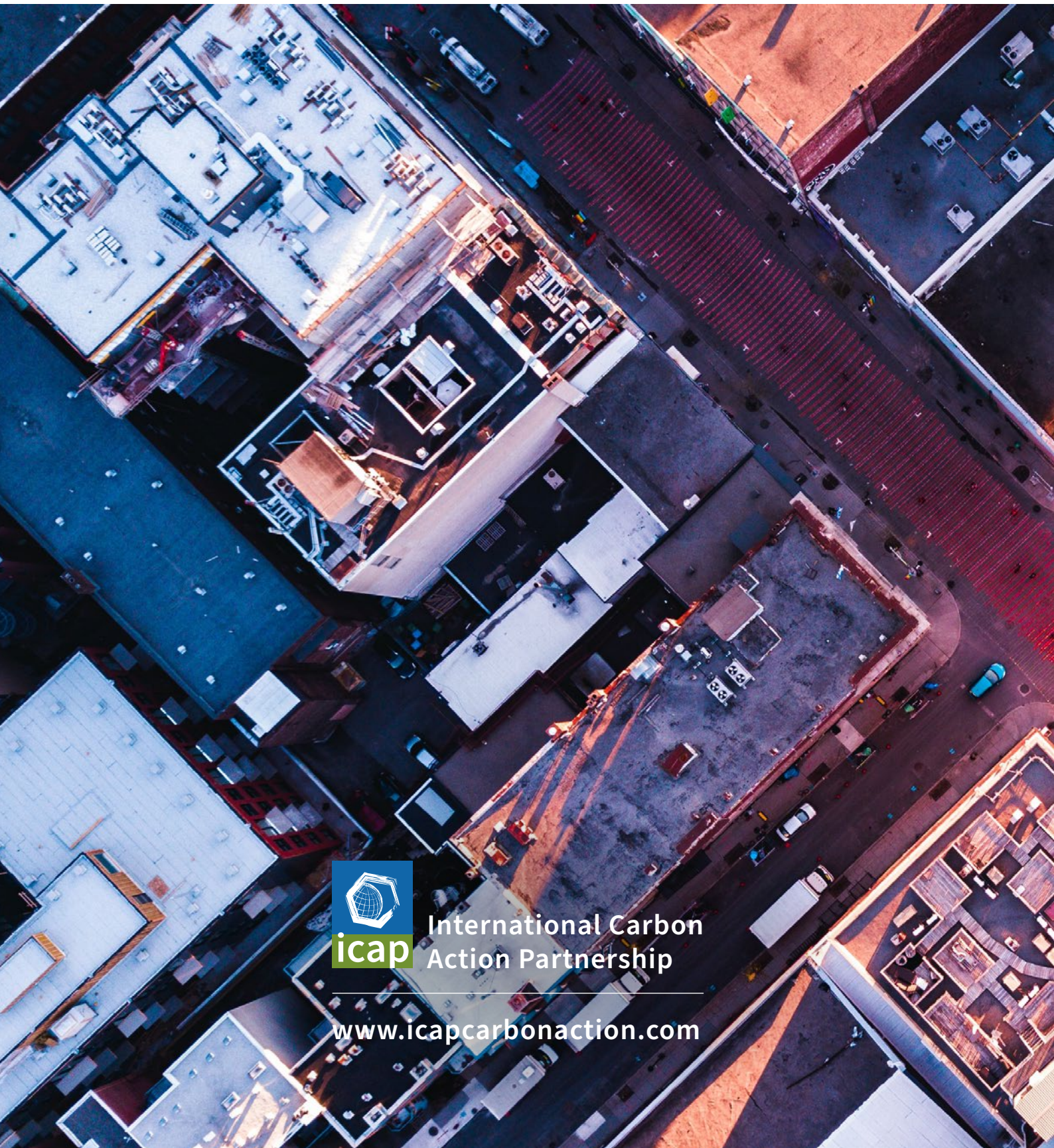
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