



icap

International Carbon
Action Partnership

EMISSIONS TRADING WORLDWIDE

Infographics

Status Report 2020

FROM SUPRANATIONAL TO LOCAL

Emissions trading systems operate at every level of government

1 Supranational

EU Member States
+ Iceland
+ Liechtenstein
+ Norway

5 Countries

Kazakhstan
Mexico
New Zealand
Republic of Korea
Switzerland

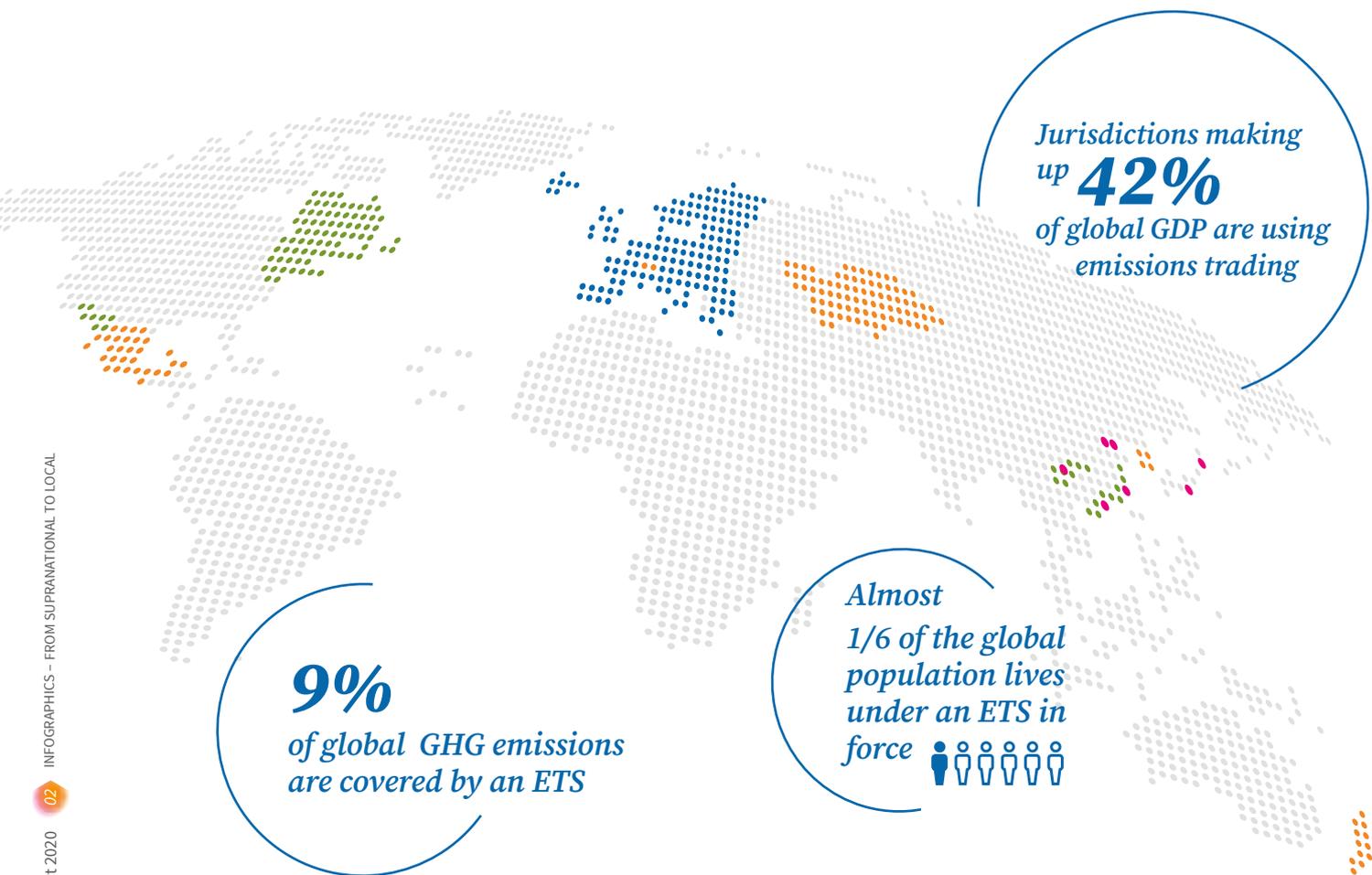
16 Provinces & States

California
Connecticut
Delaware
Fujian
Guangdong
Hubei
Maine
Maryland
Massachusetts

New Hampshire
New Jersey
New York
Nova Scotia
Québec
Rhode Island
Vermont

7 Cities

Beijing
Chongqing
Saitama
Shanghai
Shenzhen
Tianjin
Tokyo



Jurisdictions making up **42%** of global GDP are using emissions trading

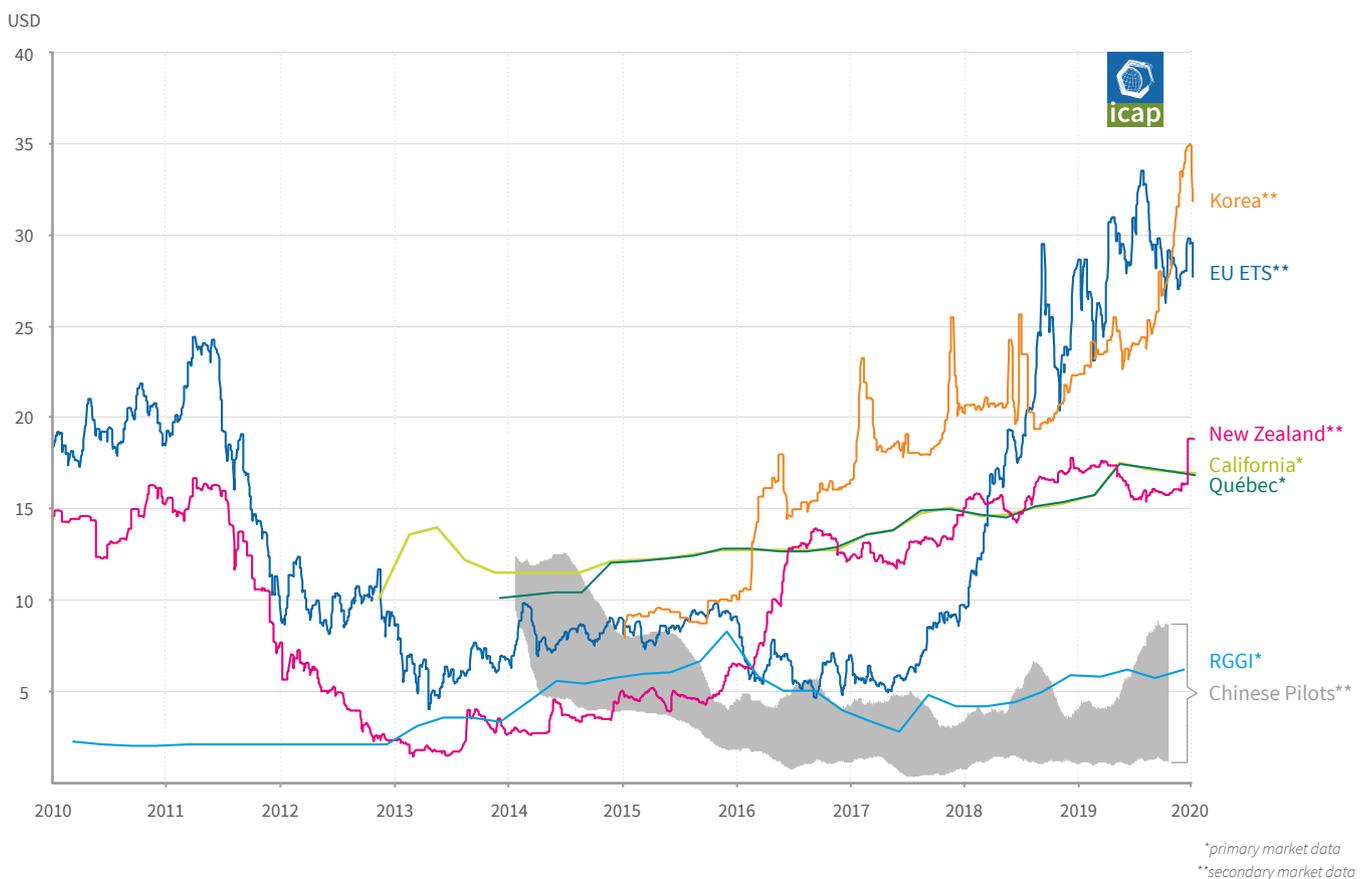
9% of global GHG emissions are covered by an ETS

Almost **1/6** of the global population lives under an ETS in force 

ALLOWANCE PRICES

Evolution of primary and secondary market prices in the 2010s

The figure uses data from the ICAP Allowance Price Explorer to visualize price developments during the 2010s in selected ETSs around the world. Sustained trends and short-term volatility can be seen throughout the decade in all systems and were driven by changes in current and expected future scarcity of allowances. In turn, these changes are 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. All data are in USD and are converted using the exchange rate valid on the day. The allowance prices for RGGI, California and Québec are obtained from primary markets while for all other systems secondary market prices are used. For the Chinese pilots the minimum and maximum price data on a given day are used to compute the 90-day moving average which in turn is depicted as the grey shaded region. See the section titled “Notes on Methods and Sources” for additional details.

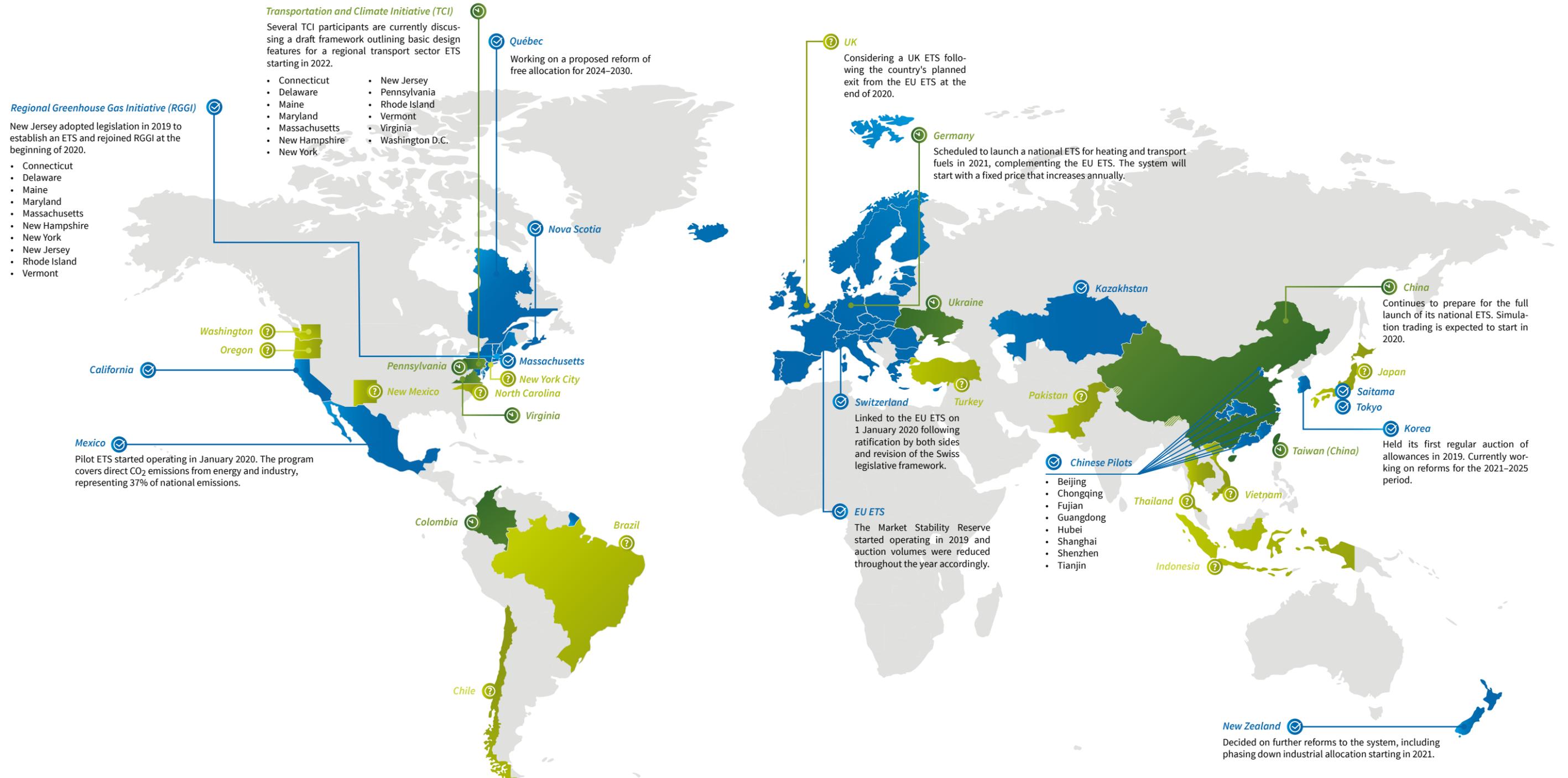


EMISSIONS TRADING WORLDWIDE

The state of play in existing and upcoming systems in 2020

The ICAP ETS world map depicts emissions trading systems currently in force, under development or under consideration. There are now 21 systems covering 29 jurisdictions with an ETS in force. Another nine jurisdictions are putting in place their systems for operation in the next few years, including China, Germany and Colombia. 15 jurisdictions including Chile, Turkey and Pakistan are also considering the role an ETS can play in their climate change policy mix. The number of systems under development and consideration includes Montenegro and the Philippines, respectively, but this is not reflected in the map below as the announcements were made after the editorial cut-off date of this report. If a jurisdiction already has a system in force and is developing or considering an additional system, it is depicted in the map as its system being in force only (i.e. in blue).

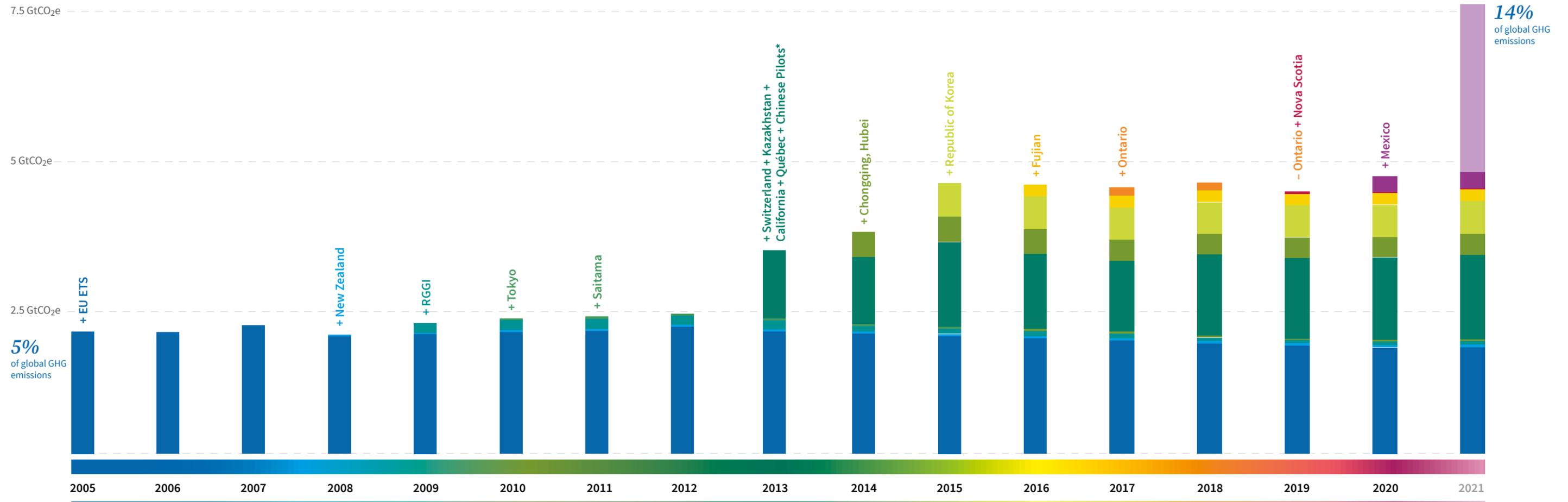
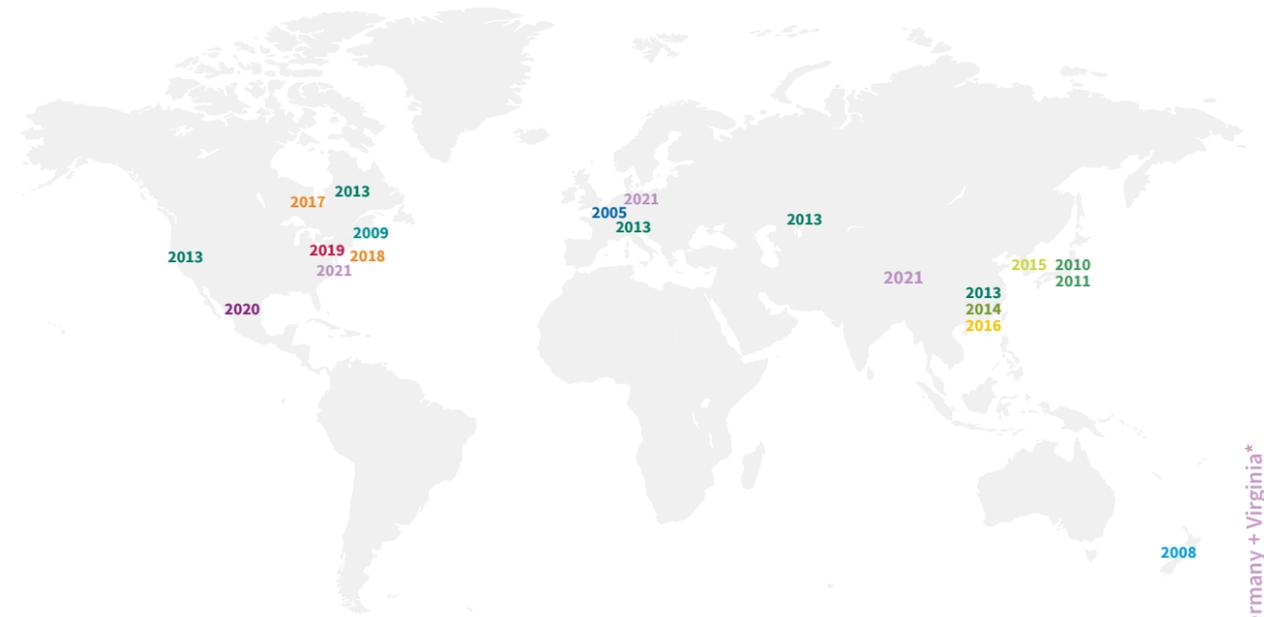
-  In force
-  Under development
-  Under consideration



GLOBAL EXPANSION OF EMISSIONS TRADING

GHG emissions under ETSs

The graphic depicts the worldwide growth of emissions trading over time. Systems are spreading around the world and new additions will soon triple the share of global GHG emissions covered by emissions trading since the launch of the EU ETS in 2005. Changes over time are driven by the addition of new sectors and systems, as well as by the counteracting trend of declining caps in many systems. See the section titled “Notes on Methods and Sources” for additional details.



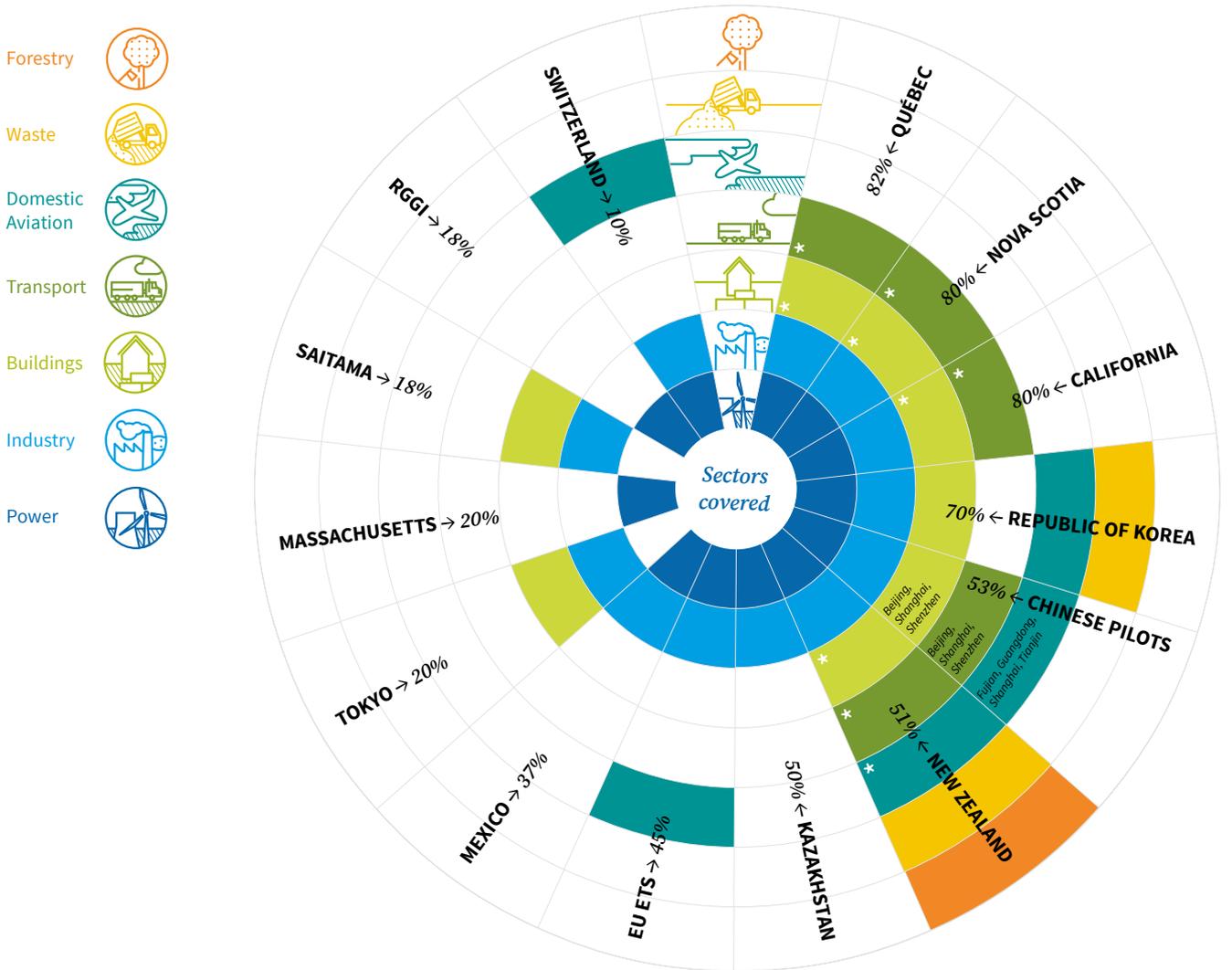
* Beijing, Guangdong, Shanghai, Shenzhen, Tianjin

*Virginia aims to join RGGI by 2021

SECTOR COVERAGE

Sectors covered by emissions trading across systems

The graphic shows sectors (types of economic activity) covered by ETSs in force, as well as whether a sector is regulated upstream. Systems are listed clockwise in decreasing order of share of aggregate emissions covered. Sectors are considered covered by a system when at least some entities in the sector have explicit compliance obligations. Typically, not all of the sector's facilities or GHG emissions are regulated because of limits like inclusion thresholds. In addition, not all sub-sectors, gases, or processes of a given sector may be covered. The jurisdictions' respective factsheets provide more information on system coverage. Only sectors covered by at least one ETS are included in the graphic. See the section titled "Notes on Methods and Sources" for additional details.



* indicates which sector represents upstream coverage

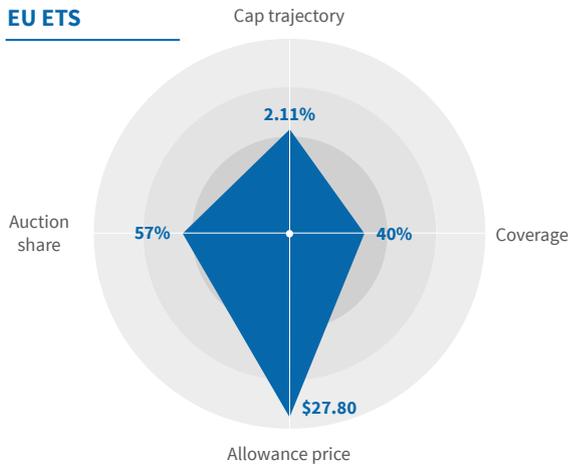
→ Emissions coverage based on the most recent data available.

DIFFERENT SHAPES OF ETS

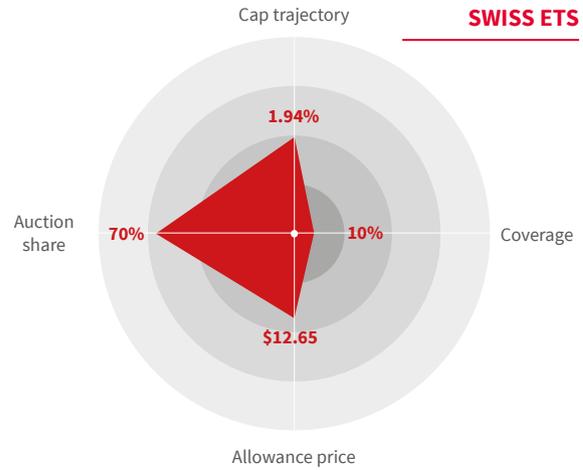
A comparative look at key metrics in six well-established systems

The axes in each graph show four key metrics. **Cap trajectory** indicates the average yearly decline rate in the system's cap between 2017 and 2020. **Coverage** shows the share of the jurisdiction's emissions that falls under the ETS. **Allowance price** is measured in USD per metric ton of CO₂e in each system and averaged over 2019. **Auction share**, expressed as a share of the 2019 cap, denotes the number of allowances that were auctioned and generated revenues for the jurisdiction's government. To aid comparison, the axes share the same scale across graphs.

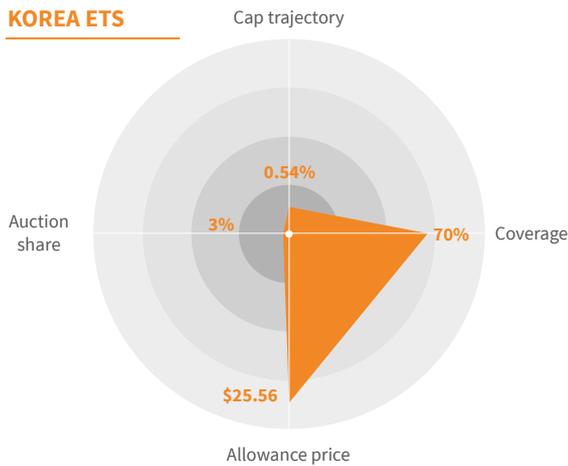
EU ETS



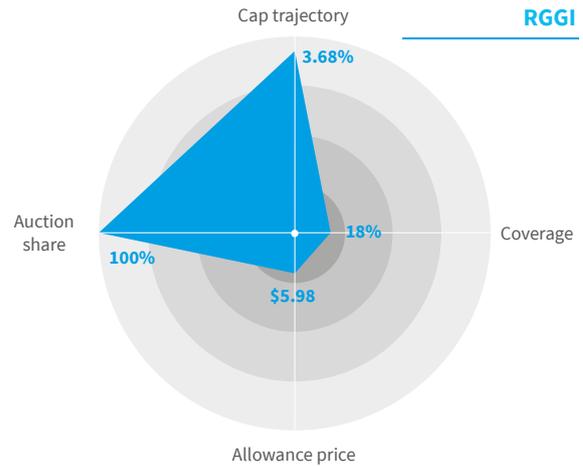
SWISS ETS



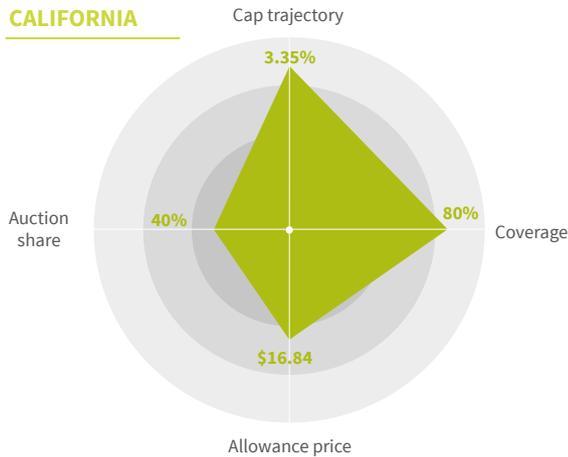
KOREA ETS



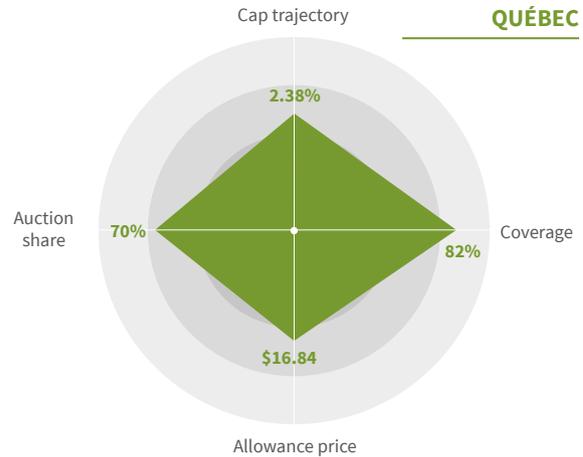
RGGI



CALIFORNIA



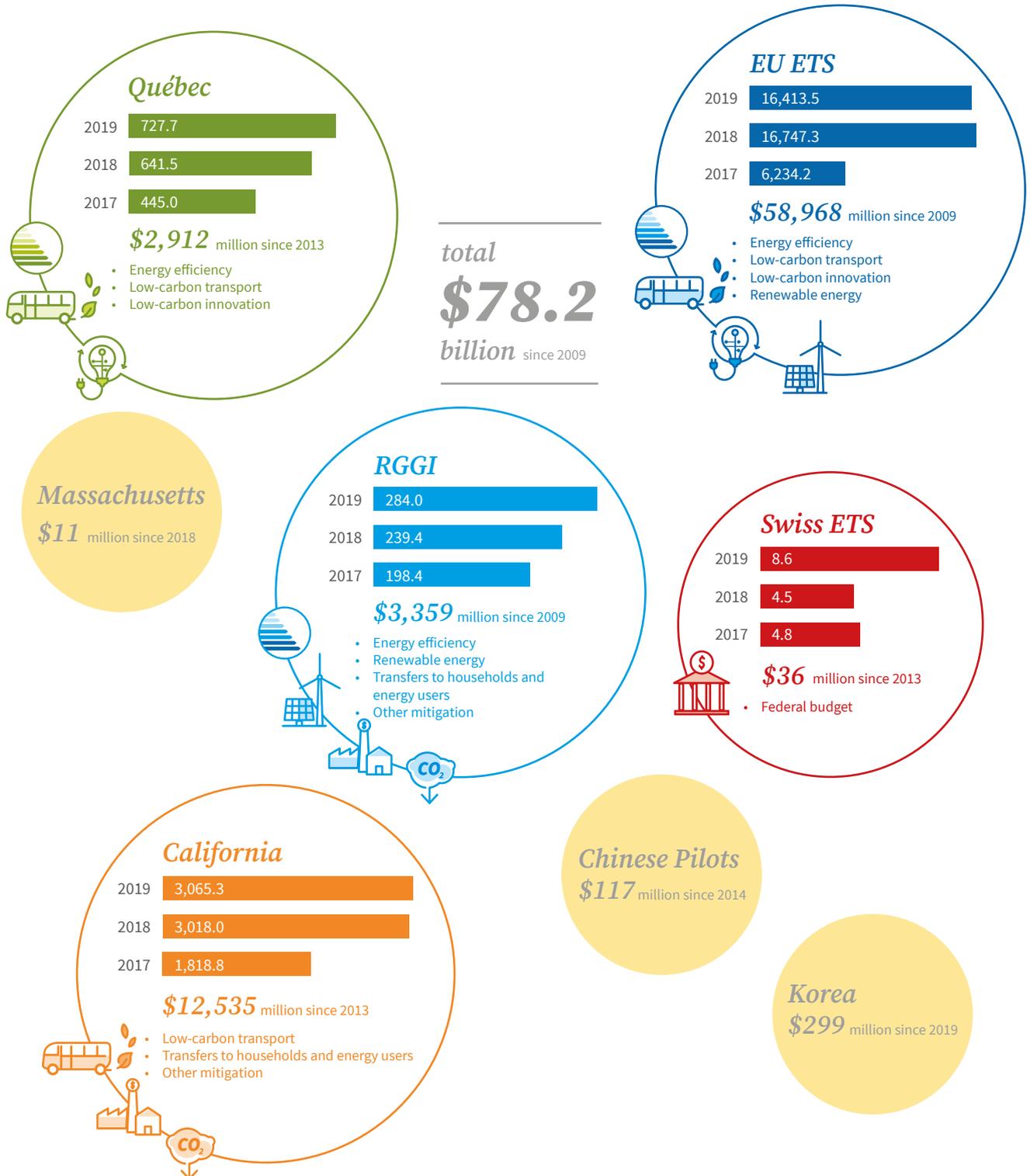
QUÉBEC



AUCTIONING REVENUE

Emissions trading as an additional source of government revenue

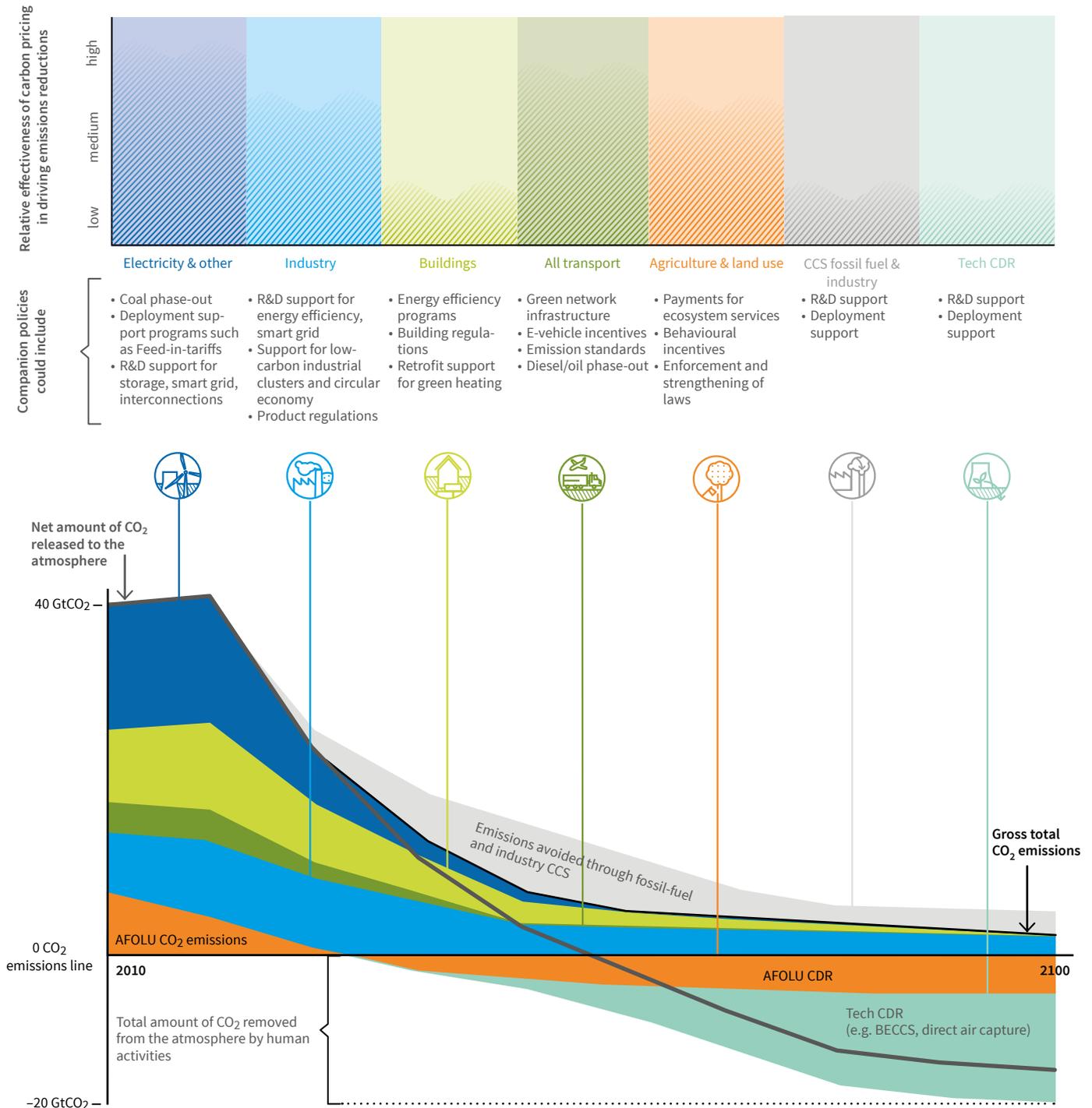
Auctioning allowances can generate public revenue that can be used in different ways depending on the priorities of the jurisdiction. Systems have tended to use auctioning revenue to fund climate programs, including on energy efficiency, low carbon transport and renewable energy. Auction revenue has also been used to support energy intensive industries, as well as to assist disadvantaged and low-income groups. The amount of revenue generated is expressed in USD and depends on the size of the jurisdiction, the ETS coverage, the number of auctioned allowances and the allowance price. By the end of 2019, systems worldwide had raised over \$78 billion cumulatively. See the section titled “Notes on Methods and Sources” for additional details.



THE PATH TO NET ZERO

The role of carbon pricing and companion policies in achieving net zero emissions

The infographic illustrates how carbon pricing and companion policies can be combined to lower the cost of emissions reductions across sectors and to incentivize negative emissions. The bottom panel replicates one of the “four illustrative 1.5°C-consistent pathway archetypes”, namely the middle-of-the-road pathway S2 in Chapter 2 of the IPCC Special Report on Global Warming of 1.5°C (IPCC, 2018). It shows the magnitude of the effort required and the time scales over which it must be applied. The top panel, which focuses on the role of carbon pricing and provides a non-exhaustive list of sector-specific companion policies, combines the conclusions in Burke et al (2019) and the analysis in the IPCC Special Report. It is deliberately stylized because the precise effectiveness of carbon pricing and companion policies is subject to academic debate and depends on the characteristics of the jurisdictions in which they are implemented. See the section titled “Notes on Methods and Sources” for additional details.



Source: IPCC (2018)

IMPRINT

Publication Date

March 2020

Design

Simpelplus
www.simpelplus.de

Printing

Ruksaldruck

Photos

Cover: Red Zeppelin on Unsplash

Disclaimer

This report was prepared by the ICAP Secretariat. The findings and opinions expressed in this report are the sole responsibility of the authors. They do not necessarily reflect the views of ICAP or its members.

The data used in this report reflects the global state of play at the time of writing in January 2020. Although the information contained in the report was assembled with the utmost care, updated and/or additional information may have been released by the time of printing. The ICAP Secretariat cannot be held liable for the timeliness, correctness, or completeness of the information provided. For any corrections, additions or other comments on the content of this report, including relevant citations, please contact the ICAP Secretariat at info@icapcarbonaction.com.

Rights and permissions

All rights reserved. The content of the work created by the ICAP Secretariat and the work itself are subject to German copyright law. Third party contributions are marked as such. Duplication, revision, distribution and any kind of use beyond the limits of copyright require the written consent of the authors. The duplication of parts of the work is only permitted if the source is mentioned.

Attribution

Please cite the work as follows: ICAP. (2020). Emissions Trading Worldwide: Status Report 2020. Berlin: International Carbon Action Partnership.

All queries on rights and permissions should be addressed to:

International Carbon Action Partnership (ICAP)
Köthener Strasse 2
10963 Berlin
Germany

www.icapcarbonaction.com
info@icapcarbonaction.com