CARBON CREDIT MARKETS | FAQ

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Carbon Markets
FAQ

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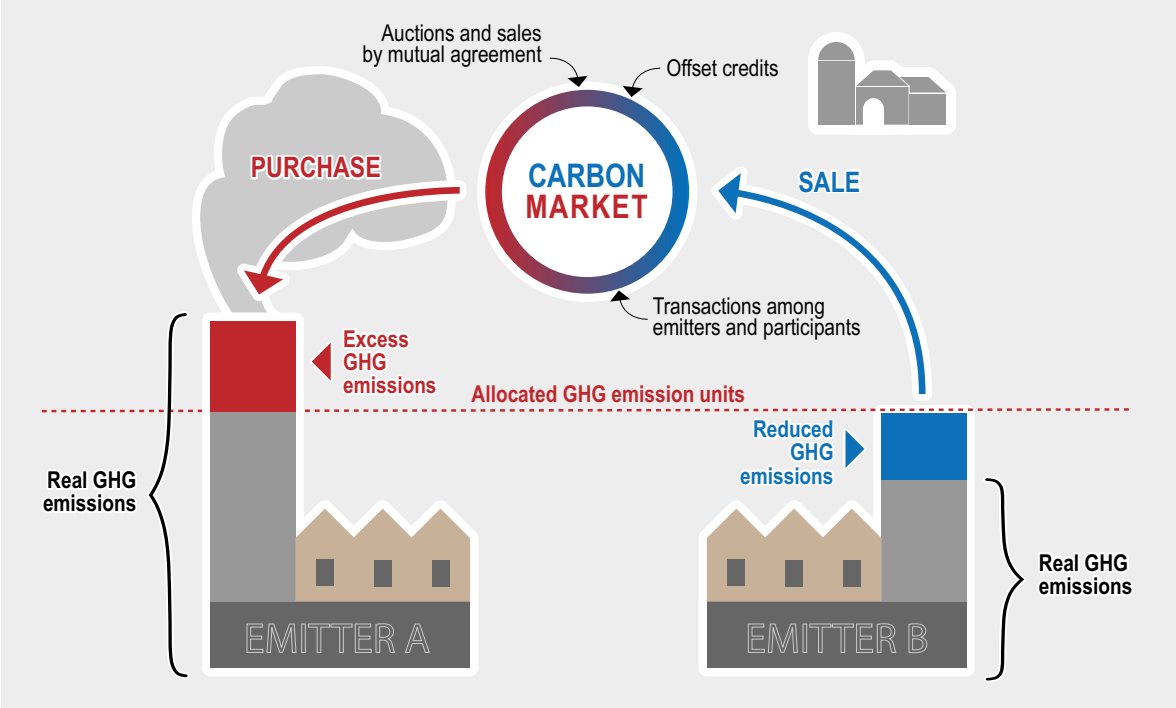
Section 1. The Basics

1. What is a Carbon Credit?

A carbon allowance or carbon credit is a permit allowing the holder to emit carbon dioxide or other greenhouse gases.[1] One carbon credit represents the right to emit one ton of carbon dioxide or carbon dioxide equivalent gases. This term is commonly used in an Emissions Trading System (the "ETS"). Commodity futures contracts linked to the value of carbon allowances or carbon credits are known as carbon credit futures.

2. What is an Emissions Trading System (the "ETS")?

In an emissions trading system - sometimes referred to as a cap-and-trade system, a governmental entity sets a policy objective to reduce emissions in their jurisdiction by establishing a regulatory authority which sets targets for major emitters. The regulatory authority sets a cap on total emissions within the emissions trading system and splits the cap into carbon allowances or credits. To achieve compliance, a regulated company under the emission trading system can acquire carbon allowances from the regulator for free or through an auction, purchase through secondary markets, or reduce its emissions. After each compliance period, regulated companies must surrender enough carbon credits to cover its emissions, or they will be liable to heavy fines. In some emissions trading systems, companies may use offset credits generated from regional or international projects towards a small percentage of their compliance requirements. Each year the regulator reduces the total number of allowances available, thereby achieving lower emissions targets. Below is an illustration of an emissions trading system:



Source: Ministère de l'Environnement et de la Lutte contre les changements climatiques.

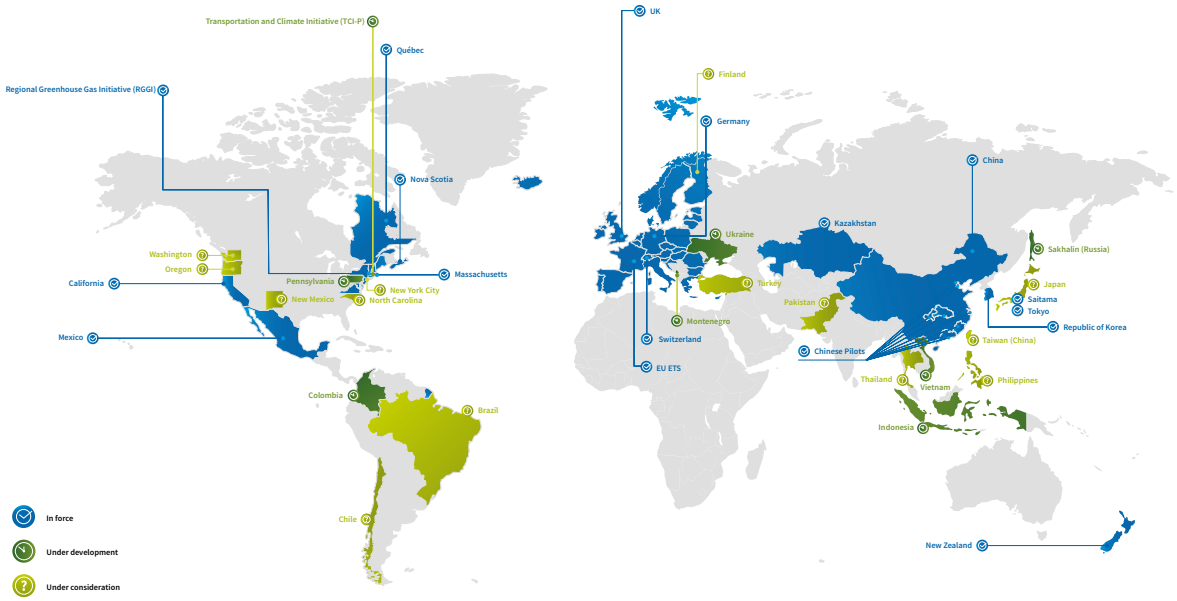
3. The history of ETS

During the 1970s and 1980s, acid rain was one of the biggest environmental problems globally. At the time, coal burning power plants were sending up too much sulfur dioxide, which was falling back to earth in the form of acid rain, damaging soil, forests, and infrastructure. Therefore, in 1990, the US government passed a law forcing polluters to pay for their emissions. This is called a cap-and-trade system.[2] Later on, the 1997 Kyoto Protocol and 2005 Paris Agreement explicitly supported the ongoing growth of cap-and-trade systems. During the years, different countries and regions set up their own carbon ETSs. Most recently, a deal was reached on the Glasglow COP 26 to standardize an international carbon trading market.

4. How big is the global carbon market?

According to financial market data provider Refinitiv, the total value of global carbon market reached US$851 billion in 2021.[3] Energy consulting firm Wood Mackenzie estimates that the global emissions trading market can be worth as much as $22 trillion by 2050.[4]

As of 2021, ETS systems are operating in 38 countries covering over 40% of global GDP.[5] The three major ETS markets globally are EU ETS, California/Quebec, and US Eastern States (RGGI). Below is an illustration of the global carbon market:

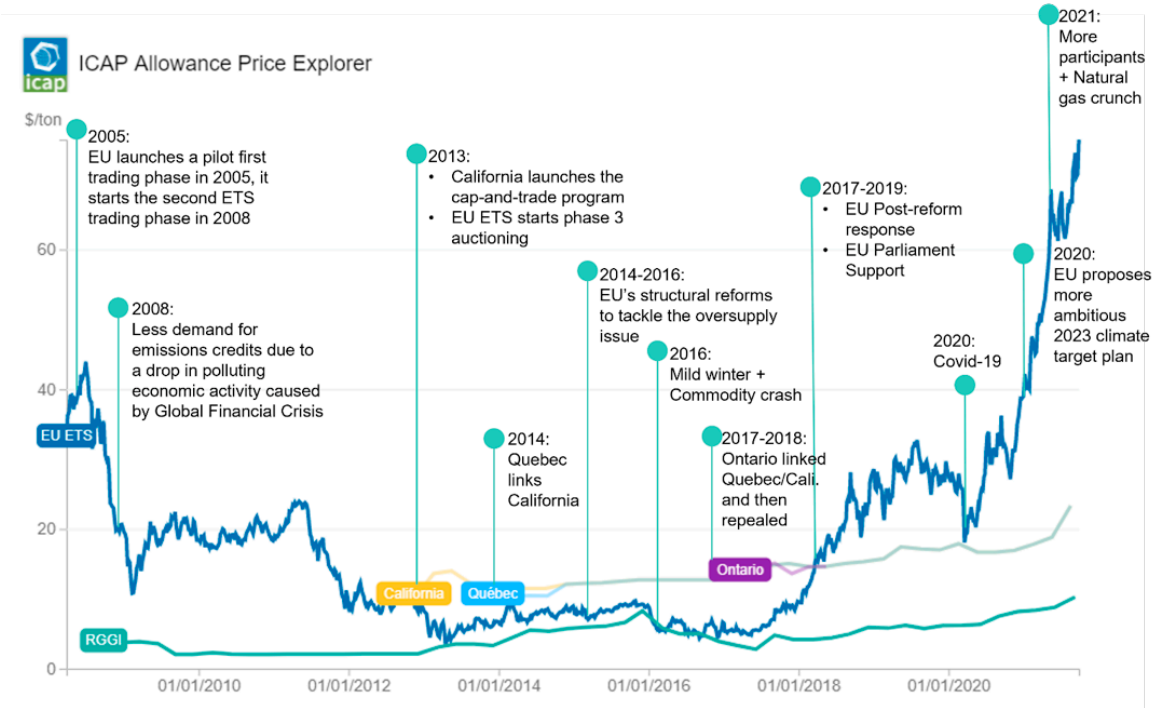


Data Source: Partnership for Market Readiness; International Carbon Action Partnership. 2021. Emissions Trading in Practice, Second Edition: A Handbook on Design and Implementation. World Bank, Washington, DC. © World Bank. https://openknowledge.worldbank.org/handle/10986/35413 License: CC BY 3.0 IGO.

Image Source: The World Bank, Adapted from International Carbon Action Partnership (ICAP) 2021.

5. How much carbon emissions are covered under the major ETSs?

As at the end of 2021, the EU ETS is trading around €75/ton, the California/Quebec ETS is trading around $30/ton, RGGI ETS is trading around $10/ton.[6] Below is a price history of the major ETSs:



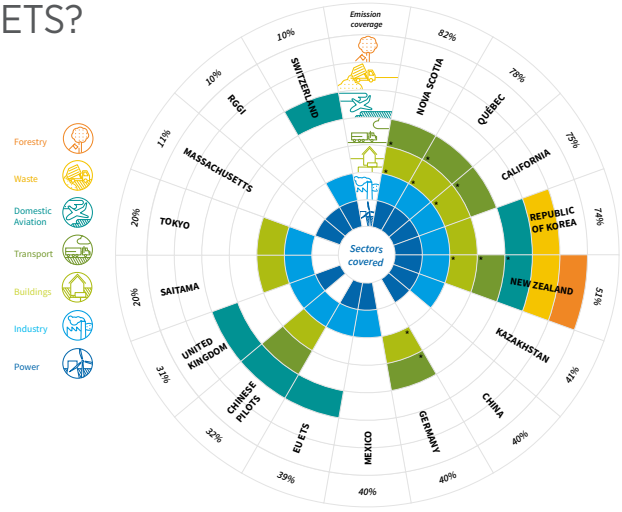
Source: International Carbon Action Partnership, ClearBlue Markets, Reuters.

Section 2. Regulatory Compliance

6. What sectors are covered under ETS?

The chart shows the sector coverage of each ETS. Globally, most ETSs cover electricity generation and industrial emissions. Currently, the EU ETS covers around 40% of the EU's greenhouse gas (GHG) emissions; the California ETS covers around 75% of California's GHG emissions; the RGGI covers around 10% of RGGI's GHG emissions.[7]

The sector coverage is largely dependent on the jurisdiction's decision as to which gases to include in the ETS.[5] Globally, the primary greenhouse gas - carbon dioxide is covered by all existing ETSs. Many ETSs also include other types of gases. Below figure shows the gases covered in existing ETSs:

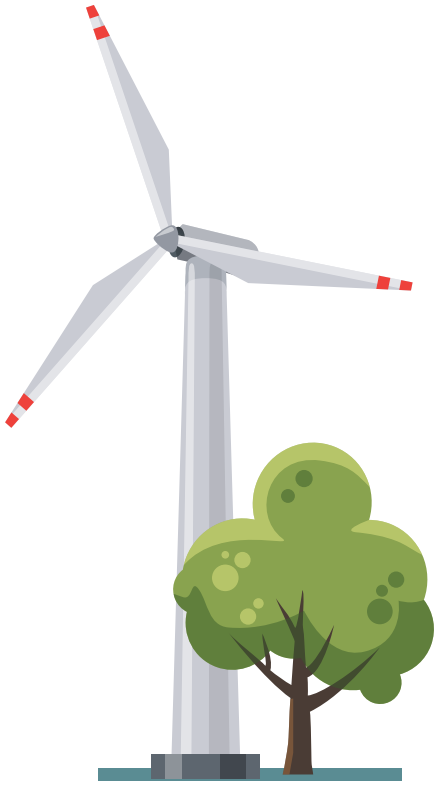


Source: ICAP. (2021). Emissions Trading Worldwide: Status Report 2021. Berlin: International Carbon Action Partnership.

Jurisdiction	CO_2	CH_4	N_2O	HFCs	PFCs	SF_6	NF_3
California	●	●	●	●	●	●	●
China national and pilots*	●						
EU	●		●		●		
Kazakhstan	●						
Massachusetts	●						
Mexico Pilot	●						
New Zealand	●	●	●	●	●	●	
Nova Scotia	●	●	●	●	●	●	●
Québec	●	●	●	●	●	●	●
Republic of Korea	●	●	●	●	●	●	
Regional Greenhouse Gas Initiative (RGGI)	●						
Switzerland	●		●		●		
Toykyo-Saitama	●						

* With the exception of Chongqing, which covers all the above gases.

Source: Partnership for Market Readiness; International Carbon Action Partnership. 2021. Emissions Trading in Practice, Second Edition: A Handbook on Design and Implementation. World Bank, Washington, DC.



7. What is the cost for non-compliance?

The cost for non-compliance is heavy fines.

Heavy fines would be imposed if a company fails to surrender enough allowances at the end of each compliance period. In the three major emissions trading systems, the fines are as following:

- EU: €100/t fine in addition to surrendering the equivalent amount of missing allowances.[8]
- California/Quebec: Each missing credit and three additional credits for each missing credit.[9]
- RGGI: Imposed by each State. In the case of excess emissions, three times the amount of excess emissions must be surrendered.[9]

8. Can carbon emissions be reliably measured and reported?

Yes.

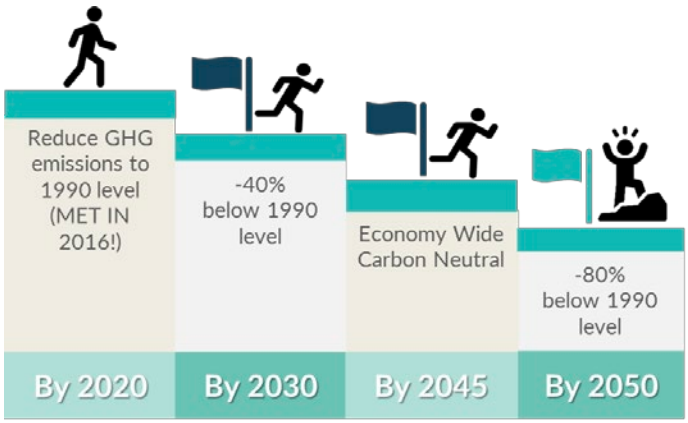
In most jurisdictions, GHG emissions data reports and underlying data are required to be measured, reported and verified by government or independent accredited verifiers, prior or post submission to the local regulator.

Section 3. "Cap-and-Trade" Principle

9. Why is an Emissions Trading System also referred to as Cap-and-Trade?

Emissions trading systems are also referred to as Cap-and-Trade because most ETSs operate under the Cap-and-Trade principle - The supply of total number of allowances is capped and the cap is reduced over time to ensure that actual emissions decline. All else equal, the lower the cap, the higher the carbon price will be and the stronger the incentive to reduce emissions.

Generally speaking, the cap should be aligned with the jurisdiction's overall mitigation target. In California's case, the emissions cap is 334.2 million tonnes of carbon dioxide equivalent by 2020. During the period of 2021-2030, the cap is set to decline by about 4% per year to reach 200.5 million tonnes of carbon dioxide equivalent in 2030, which is around 40% below 334.2 million tonnes of carbon dioxide equivalent.[9]



Source: Centre for Climate and Energy Solutions.

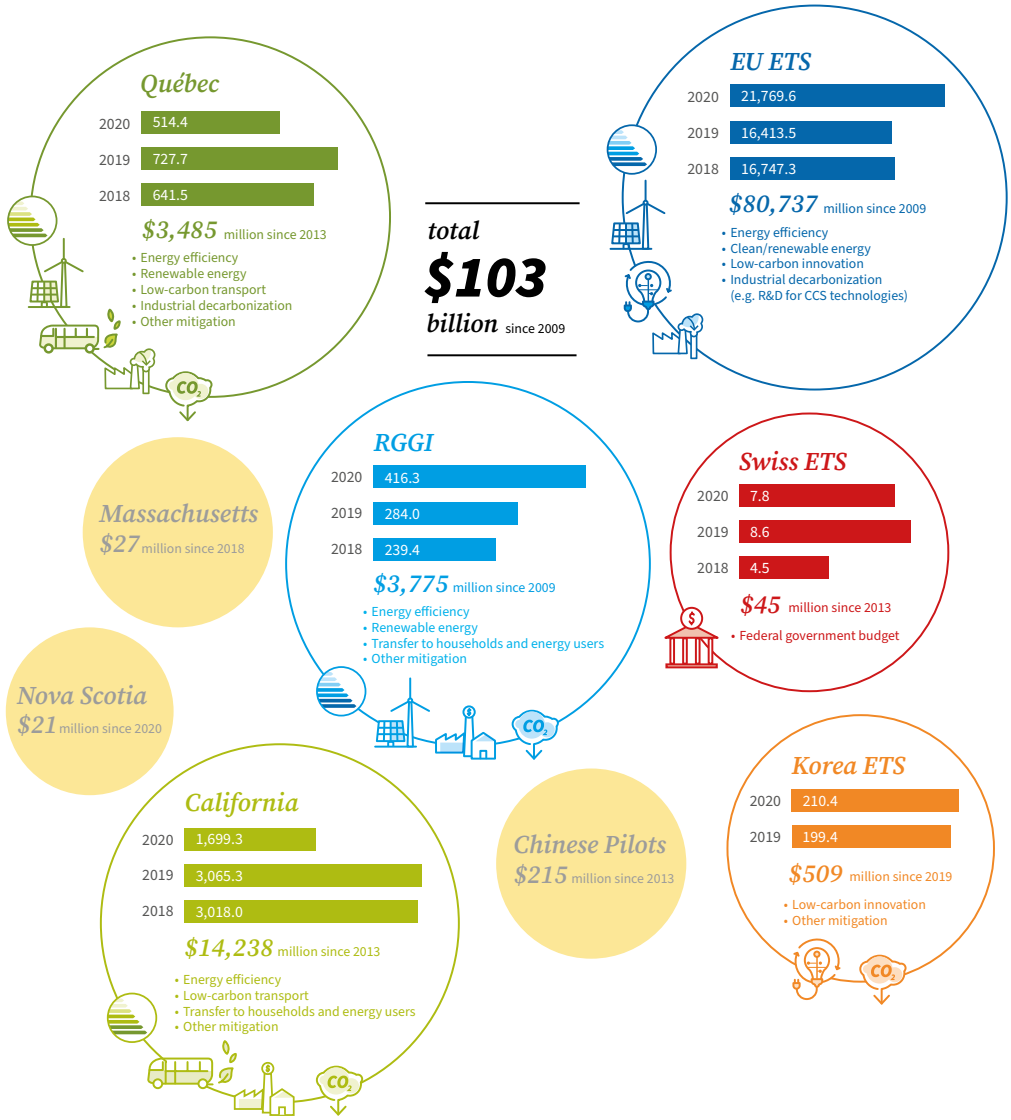
10. Is Cap-and-Trade working?

Since the adoption of ETSs in many jurisdictions globally, there has been clear, credible evidence that carbon emissions have declined in each regulated jurisdiction. According to the European Commission, companies covered by the EU ETS reduced emissions by about 35% between 2005 and 2019.[10] In the United States, California launched its own ETS in 2013, since then, the emissions from sources covered by the ETS declined 10% from 2013 to 2018.[11]

Section 4. Primary Market

11. What happens to the revenue from auctions?

Auction revenues are often used to support low-carbon innovation and fund additional climate and energy related initiatives. See below chart for more details:



Source: ICAP. Emissions Trading Worldwide: Status Report 2021. Berlin: International Carbon Action Partnership. 2021. Retrieved from https://icapcarbonaction.com/en/icap-status-report-2021.

Section 5. Secondary Market

12. How do carbon allowance futures trade, and do the carbon allowance futures the fund proposes to hold trade on an exchange?

Yes, the carbon allowance futures our fund proposes to hold all trade on the Intercontinental Exchange (the "ICE").

The three initial constituents of the fund are the European Union Allowance (the "EUA"), the California Carbon Allowance (the "CCA") and the Regional Greenhouse Gas Initiative (the "RGGI").

13. Why do we need a secondary carbon market?

A secondary carbon market helps support a proven environmentally effective policy choice through:

1. Enhanced transparency: Facilitating the price discovery of carbon which in turn helps companies' strategic planning and policymaker's decision-making.
2. Providing flexibility: Giving companies flexibility to decide how and when to manage carbon emissions.
3. Managing risks: Helping transfer risks (e.g. price risk) between counterparties.
4. Promoting innovation: Encouraging carbon market participation, incentivizing businesses to discover more sustainable business models.

Section 6. Canadian Experience

14. Does Canada have Emissions Trading System?

Yes!

Quebec launched its own cap-and-trade system in 2013, the system was linked to California in 2014 under the Western Climate Initiative, forming North America's largest carbon market and the first designed and operated by sub-national governments in different countries.[12] Ontario briefly joined in 2018 and then repealed after a few months when the new provincial government came in.

Learn about Ninepoint Carbon Credit ETF

ninepoint.com/CBON

FOOTNOTES

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2 YouTube. (2021). *How do carbon markets work? | The Economist. YouTube*. Retrieved from https://www.youtube.com/watch?v=m5ych9oDtk0.

3 Global carbon markets value surged to record $851 bln last year-Refinitiv. Reuters. (2022, Jan 31). https://www.reuters.com/business/energy/global-carbon-markets-value-surged-record-851-bln-last-year-refinitiv-2022-01-31/

4 Wood Mackenzie. (2021, August 11). COP26: Make or break for Global Emissions Trading. Wood Mackenzie. Retrieved from https://www.woodmac.com/news/opinion/cop26-make-or-break-for-global-emissions-trading/

5 Partnership for Market Readiness; International Carbon Action Partnership. 2021. Emissions Trading in Practice, Second Edition: A Handbook on Design and Implementation. World Bank, Washington, DC. © World Bank. https://openknowledge.worldbank.org/handle/10986/35413 License: CC BY 3.0 IGO.

6 Carbon Pulse. (n.d.). Retrieved from https://carbon-pulse.com/

7 ICAP. Emissions Trading Worldwide: Status Report 2021. Berlin: International Carbon Action Partnership. 2021. Retrieved from https://icapcarbonaction.com/en/icap-status-report-2021

8 EU Emissions Trading System (EU ETS). International Carbon Action Partnership. (n.d.). Retrieved from https://icapcarbonaction.com/en/?option=com_etsmap&task=export&format=pdf&layout=list&systems%5B%5D=43

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11 Enhesa. (2021, September 20). Keeping tabs on Carbon Emissions Reduction Trends. Enhesa. Retrieved from https://www.enhesa.com/resources/article/keeping-tabs-on-carbon-emissions-reduction-trends/

12 The Carbon Market, a Green Economy Growth Tool! (n.d.). Retrieved from https://www.environnement.gouv.qc.ca/changementsclimatiques/marche-carbone_en.asp

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