

# Global Carbon Account 2019

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## 5 key trends in 2019

- 1. As of May 1, 2019, 25 carbon taxes and 26 Emissions Trading Schemes (ETS) were operating worldwide.** The jurisdictions covered by one or more explicit carbon price account for around 60% of global GDP.
- 2. Carbon prices are making headway globally despite local setbacks.** In Canada, provincial elections in Ontario and Alberta led to rolling back provincial pricing schemes; at the same time, the pan-Canadian backstop is being implemented countrywide on all provinces that do not have their own pricing scheme. In France, the yellow vest protests prompted the government to freeze the carbon tax at its current rate of USD51, yet the tax was not rolled back. The year 2020 shall see Mexico and China ETSs start operations with actual positive prices.
- 3. Carbon pricing mechanisms generated USD45 billion (EUR 40 billion) in revenues in 2018,** up from USD32 billion in 2017 and USD22 billion in 2016. This increase is mostly due to a rise in EU ETS prices, from below USD 10 until 2018 to above USD25 lately.
- 4. In 2018, 52% of carbon pricing revenues came from carbon taxes.** Carbon revenues are mostly channeled to the general budget, or earmarked for environmental purposes.
- 5. More than 75% of emissions regulated by carbon pricing are still covered by a price below USD 10 (EUR 8).** To stay on the 2°C trajectory while sustaining economic growth, the High-Level Commission on carbon prices led by economists Stern and Stiglitz recommends carbon prices between USD40 and USD80 per ton of CO<sub>2</sub> by 2020, and between USD50 and USD100 per ton of CO<sub>2</sub> by 2030.

## Explicit and implicit price of carbon

Two instruments put a price explicitly on GHG emissions: carbon taxes set a fixed price per ton of CO<sub>2</sub>, while CO<sub>2</sub> Emissions Trading Schemes (ETS) impose ceilings on a jurisdiction's yearly emissions.

This Global Carbon Account focuses on explicit carbon prices, yet implicit carbon prices such as fuel excise taxes (price per liter) or taxes on electricity production (price per kWh) are also to be taken into account when calculating the full impact of pollution-related prices on economic actors' choices. Similarly, subsidies and support measures to the production and/or consumption of fossil fuels are sometimes referred to as «negative implicit carbon prices». The International Energy Agency estimates that the total amount of consumption fossil-fuel subsidies was around USD260 billion in 2016.

# Features of carbon prices in 2019

## Instruments:

- ESTABLISHED EMISSIONS TRADING SCHEME
- ESTABLISHED CARBON TAX
- SCHEDULED EMISSIONS TRADING SCHEME
- SCHEDULED CARBON TAX

Jurisdiction	Start year	Price in USD/tCO <sub>2</sub> (nominal value) <sup>1</sup>	Share of emissions (%) <sup>2</sup>	Sectoral scope						Fuels covered		
Finland	1990	70	36									
Poland	1990	0.08	4									
Norway	1991	58	60									
Sweden	1991	124	40									
Denmark	1992	26	40									
Slovenia	1996	19	24									
Estonia	2000	2.3	3									
Latvia	2004	5.7	15									
Liechtenstein	2008	96	26									
Switzerland	2008	96	33									
British Columbia	2008	30	70									
Iceland	2010	30	29									
Ireland	2010	23	49									
Ukraine	2011	0.02	71									
Japan	2012	2.6	68									
United Kingdom	2013	24	23									
Mexico	2014	2.4	46									
France	2014	51	35									
Portugal	2015	14	29									
Chile	2018	5.0	39									
Colombia	2018	5.0	24									
Singapore	2019	3.7	80									
Argentina	2019	10	20									
Pan-Canadian carbon price	2019	15	N/A									
Newfoundland and Labrador	2019	15	91									
South Africa	2019	8.3	80									
Northwest Territories	2019	N/A	N/A									
Prince Edwards Island	2019	N/A	N/A									

### 1 Price in USD/tCO<sub>2</sub>:

- Up to 10
- Between 11 and 30
- More than 30

### 2 Share of emissions covered:

- Up to 35%
- Between 36% and 65%
- More than 65%

\* ETS prices: mean values observed between April 2018 and April 2019. Tax prices observed on April 1, 2019.

\*\* The ETS in New Zealand also covers the forest sector.

\*\*\* China's national ETS was launched in December 2017, it will be fully operational in 2020.

## Sectors:

- ENERGY
- BUILDING
- WASTE
- INDUSTRY
- TRANSPORT
- AVIATION

## Fuels:

- COAL
- OIL
- GAS

Jurisdiction	Start year	Price in USD/tCO <sub>2</sub> (nominal value) <sup>1</sup>	Share of emissions (%) <sup>2</sup>	Sectoral scope								
EU ETS	2005	17	45									
Alberta	2007	22	48									
Switzerland	2008	7.0	11%									
New Zealand**	2008	16	51									
RGGI	2009	4.0	20									
Tokyo	2010	5.8	20									
Saitama	2011	5.8	18									
California	2012	15	85									
Kazakhstan	2013		50									
Quebec	2013	14	85									
China	Beijing	2013	8.9	45								
	Guangdong	2013	2.2	60								
	Shanghai	2013	5.2	57								
	Shenzhen	2013	5.2	40								
	Tianjin	2013	1.6	55								
	Chongqing	2014	1.8	40								
	Hubei	2014	3.3	35								
	Fujian	2016	3.1	60								
	Sichuan	2018										
	National***	2018		30								
South Korea	2015	20	68									
British Columbia	2016	19	10									
Massachusetts	2019	6.7	14									
Pan-Canadian carbon price	2019	15	N/A									
Newfoundland and Labrador	2019	15	43									
Nova Scotia	2019	15	80									
Mexico	2020	N/A	N/A									
Oregon	2021	N/A	N/A									
Saskatchewan	2021	N/A	58									

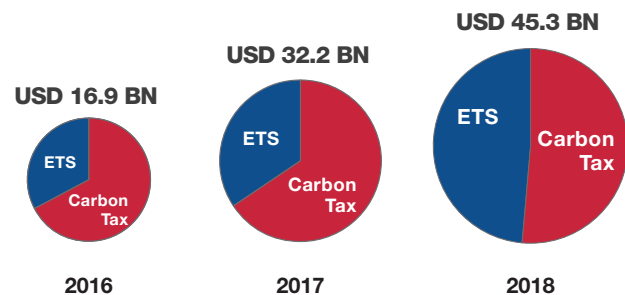
## 1 Share of state revenues

- Carbon tax - Less than 1%
- Carbon tax - 1% to 2%
- Carbon tax - More than 2%
- ETS - Less than 1%
- ETS - 1% to 2%
- ETS - More than 2%

## 2 Revenue uses

- Earmarking
- General budget allocation
- Tax exemptions
- Direct transfers

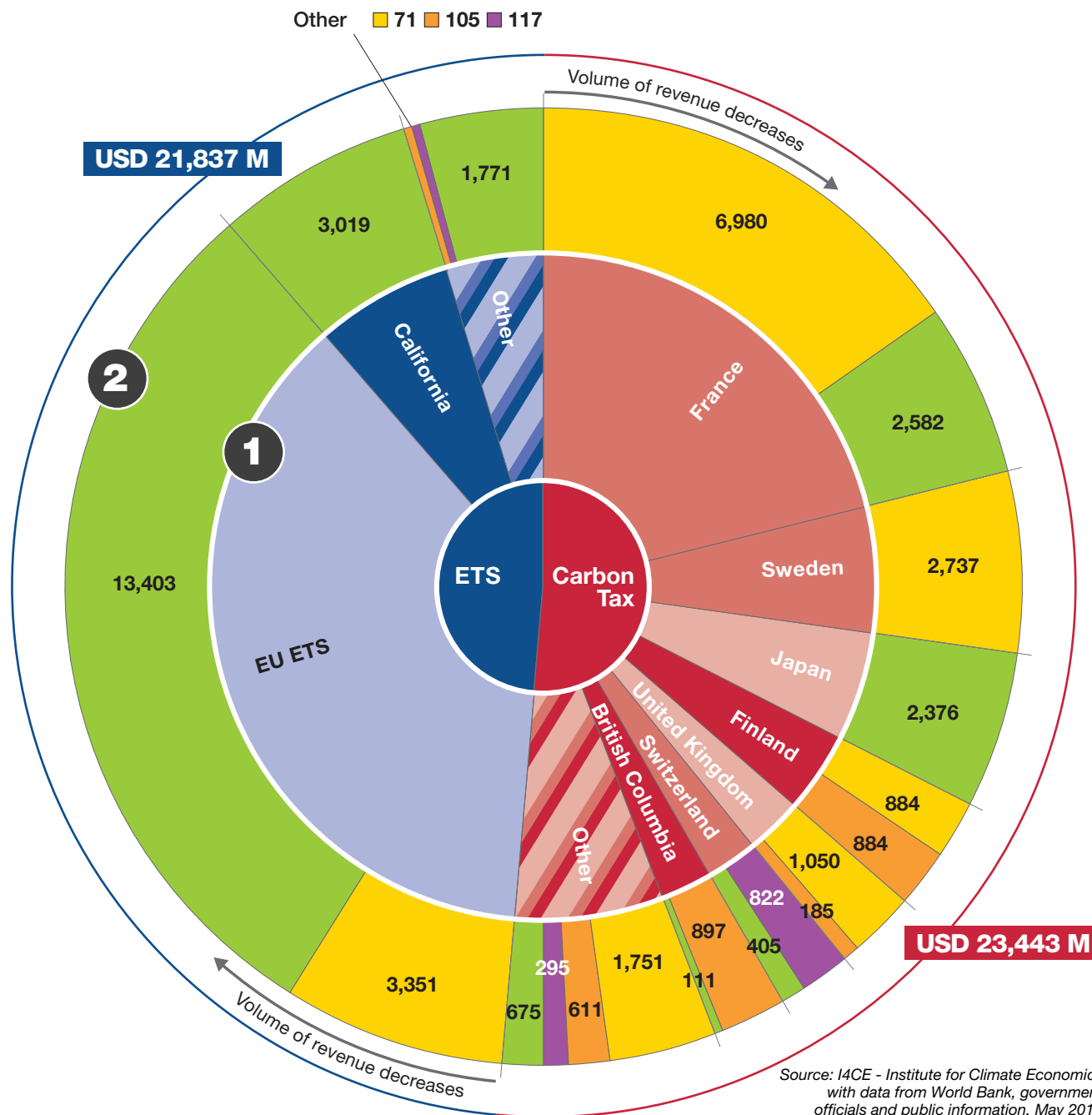
### Revenue evolution 2016-2018



### Key takeaways

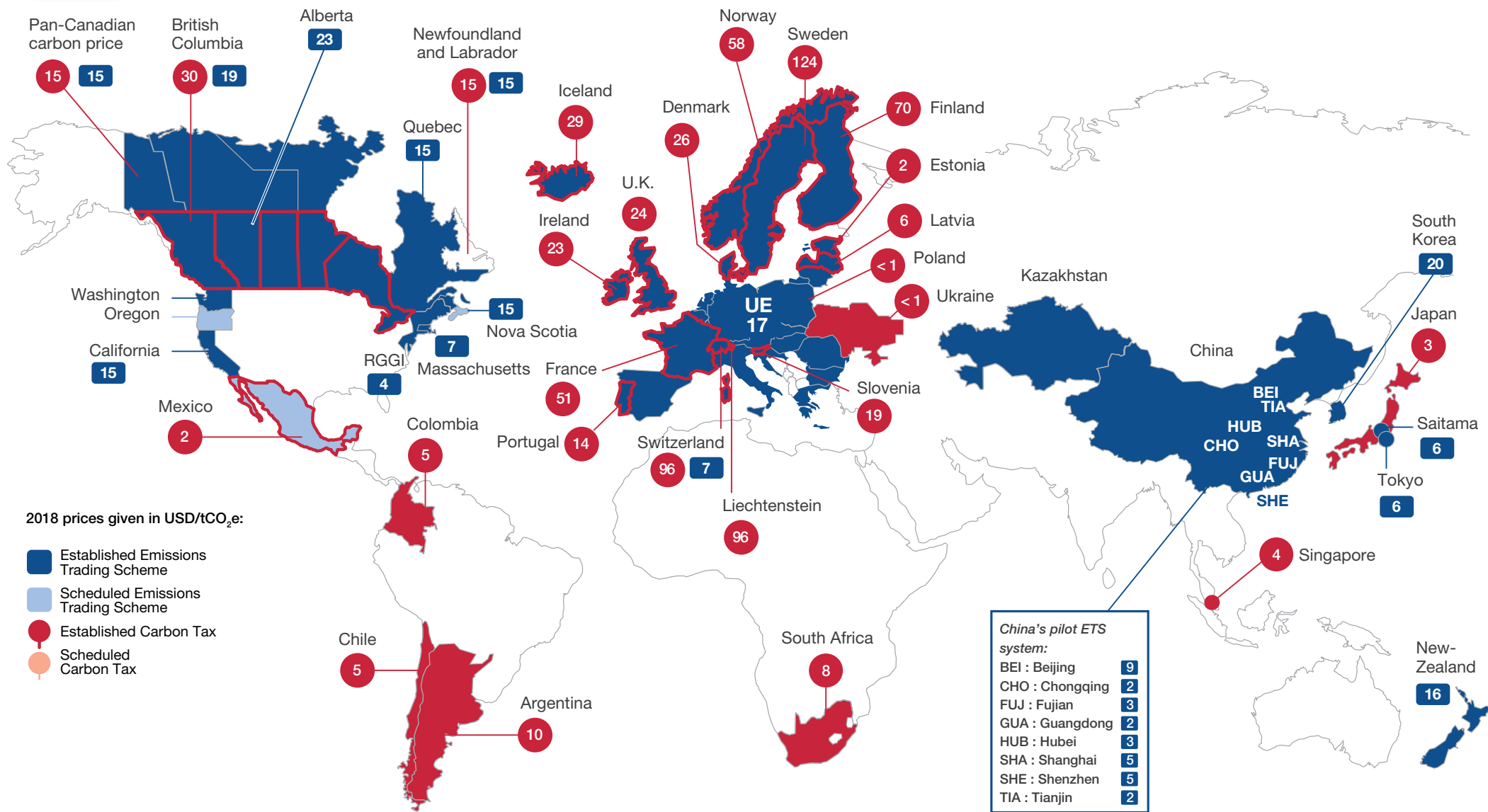
- 52% of carbon revenues are generated by carbon taxes, amounting to USD 23 billion. ETS have generated USD 22 billion.
- More than 75% of carbon revenues come from member countries of the European Union.

Note: Figures represented here are for calendar year 2018 or fiscal year 2017/2018. If no data was available, calendar year 2017 was taken into account.



Source: I4CE - Institute for Climate Economics with data from World Bank, government officials and public information, May 2019

# Map of explicit carbon prices around the world in 2019



\* The pan-Canadian carbon price applies on provinces that do not have their own pricing scheme.

Source: I4CE – Institute for Climate Economics with data from ICAP, World Bank, government officials and public information, Mai 2019.

Creation-realization: SophieBerloz.fr (REF3035)