

# Carbon pricing across the world: how to efficiently spend growing revenues?

Paris,  
 October 2018

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**An acceleration of carbon pricing policy implementation is underway.** By April 2018, 46 countries and 26 provinces had implemented an explicit carbon pricing instrument: a carbon tax or an emissions trading scheme (ETS). These jurisdictions account for 60% of global GDP. More than 25 carbon pricing instruments have been announced for the years ahead.

This acceleration has an impact on the increase in associated revenues: **in 2017, carbon pricing instruments have generated revenue of USD32 billion (EUR 26 billion), up from USD22 billion in 2016.** This increase raises the issue of the use of revenues, which can no longer be considered as the incidental co-benefit of a purely behavioral instrument.

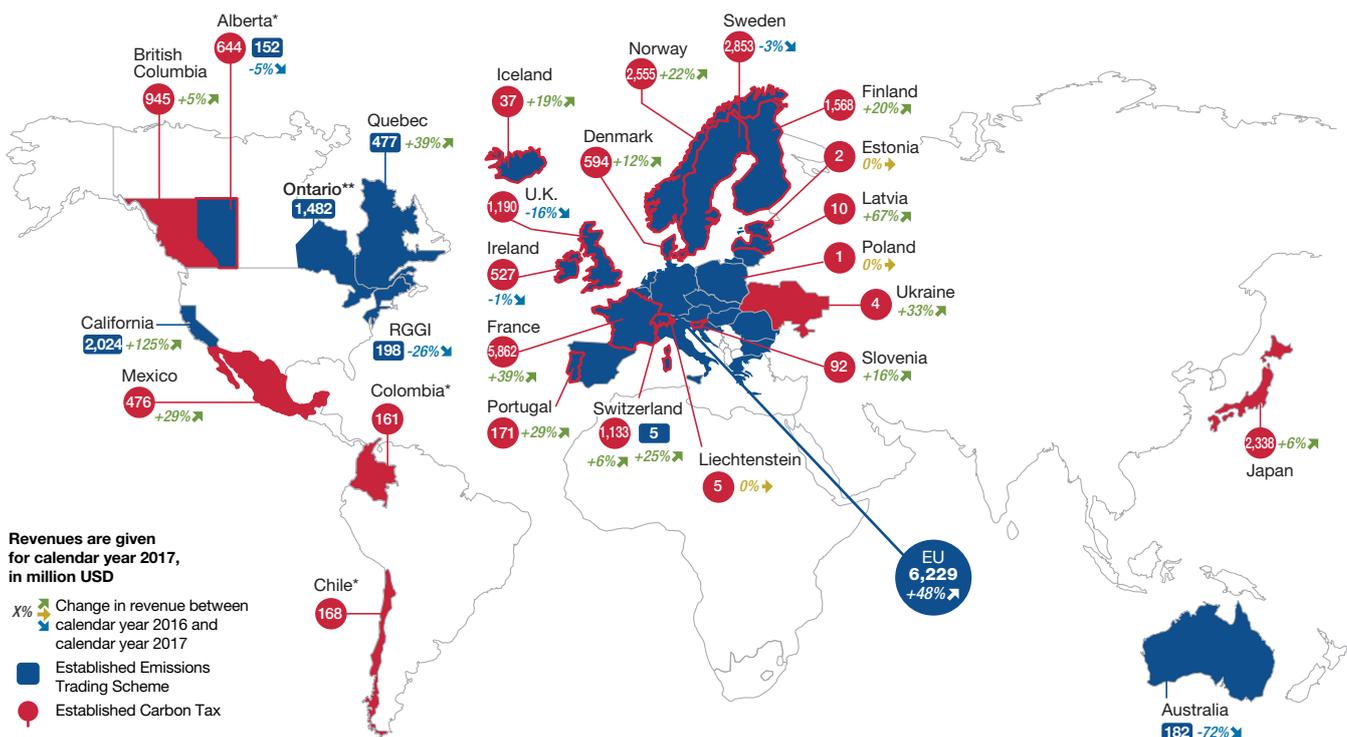
**International experience points to very different uses for these revenues.** These uses can be classified into four categories: investment in low-carbon projects (46% of revenues), allocation to the general budget (44% of

revenues), reduction of other taxes (6% of revenues), direct payment of premiums or subsidies (4% of revenues).

**Several dimensions must be considered when assessing the relevance of revenue utilization.** Macroeconomic performance, environmental performance, distributive impacts, ease of communication, and governance are all criteria for assessing the relevance of forms of revenue utilization.

**While there is no one-size-fits-all solution for revenue utilization, transparency of expenditure nevertheless seems essential.** National discussions are vital to determine the most appropriate use for each context and they also serve as important levers for increasing the acceptability of carbon pricing. Similarly, acceptability increases sharply when citizens are informed about how revenues are spent, and also when decision makers publicly report on these uses.

## Map of carbon revenues around the world in 2017 (in million USD)



Revenues are given for calendar year 2017, in million USD

% Change in revenue between calendar year 2016 and calendar year 2017

Established Emissions Trading Scheme  
 Established Carbon Tax

\* New carbon pricing instrument, 2017 is the first year for which revenue is generated.  
 \*\* The ETS in Ontario was cancelled in 2018.

Source: I4CE – Institute for Climate Economics with data from World Bank, government officials and public information, October 2018.

## 4 main categories to address specific contexts for carbon revenue use – practical examples



### LOW-CARBON PROJECTS: REVENUE FROM THE QUEBEC CAP-AND-TRADE IS ADMINISTERED BY THE GREEN FUND

Type of mechanism	Cap-and-trade system
CO <sub>2</sub> emissions covered by the mechanism	85%
Start date	2013
2017 revenue	USD477 million

Revenue from the Quebec cap-and-trade system is allocated to a specific instrument, the Green Fund, and dedicated to mitigation and adaptation projects to address climate change. Two-thirds of the Green Fund's revenue must be directed to the transport sector, the province's largest emitter, particularly to develop public transport and to electrify transport modes. In total, more than 20 programs receive financial support from the Green Fund.



### REDUCTION OF OTHER TAXES: SWEDEN INTRODUCES A CARBON TAX, WHILE REDUCING ITS TAX BURDEN

Type of mechanism	Carbon tax
CO <sub>2</sub> emissions covered by the mechanism	40%
Start date	1991
2017 revenue	USD2,853 million

The Swedish carbon tax was introduced as part of broad tax reforms in the early 1990s, in parallel with a reduction of income and labor taxes. Subsequently, as the carbon tax rate increased, employers' social contributions were reduced and the most vulnerable households benefited from income tax exemptions.



### GENERAL BUDGET: IRELAND RELIES ON CARBON TAX TO INCREASE STATE RESOURCES

Type of mechanism	Carbon tax
CO <sub>2</sub> emissions covered by the mechanism	49%
Start date	2010
2017 revenue	USD527 million

Ireland's carbon tax was introduced when the country was hit by the 2008 global economic crisis. As public debt reached record levels, Ireland implemented a recovery plan for its economy, including broad tax reforms. These reforms introduced various instruments to increase state revenue, including a carbon tax. Carbon tax receipts are used to increase the government's overall revenue.



### DIRECT PAYMENT OF PREMIUMS OR SUBSIDIES: CARBON TAX REVENUES ARE REDUCING HEALTH INSURANCE PREMIUMS IN SWITZERLAND

Type of mechanism	Carbon tax
CO <sub>2</sub> emissions covered by the mechanism	36%
Start date	2008
2017 revenue	USD1,133 million

Two-thirds of Swiss tax revenues are redistributed annually to businesses and households. For companies, income redistribution operates via reductions in social security contributions. For citizens, an amount is deducted from the health insurance premium, which is mandatory in Switzerland. This amount is the same for every citizen, regardless of income or consumption level. In 2018, every Swiss citizen received USD90 through this direct transfer.

#### A TOPICAL ISSUE, ALL OVER THE WORLD

The case studies presented here come from a report produced in collaboration with the World Bank's Partnership for Market Readiness program and the Agence Française de Développement. In response to the growing number of questions about the use of carbon revenues, this report, to be published in December, reviews the increasing number of examples from around the world. It also provides public decision makers with the means to evaluate and design ways of using revenues derived from carbon pricing.

## GOVERNANCE, A KEY ISSUE FOR REVENUE UTILIZATION

The following questions facilitate testing the relevance of decisions made throughout the process of setting up carbon pricing instruments:

### Prior to instrument set up

- Has the revenue use been the subject of consultation beforehand?
- Are the different stakeholders (ministries, private sector, civil society) represented in the decision-making bodies in proportion to (1) their contribution to revenue raising, and (2) the impact they will experience as a result of the fiscal policy?
- Is the autonomy of the authorities responsible for revenue management in line with the general objectives and the local institutional context? In particular, is recourse to an independent fund justified?

In Quebec, an independent management board has been established to oversee decisions made by the Green Fund, which is responsible for the redistribution of the cap-and-trade system's revenue.

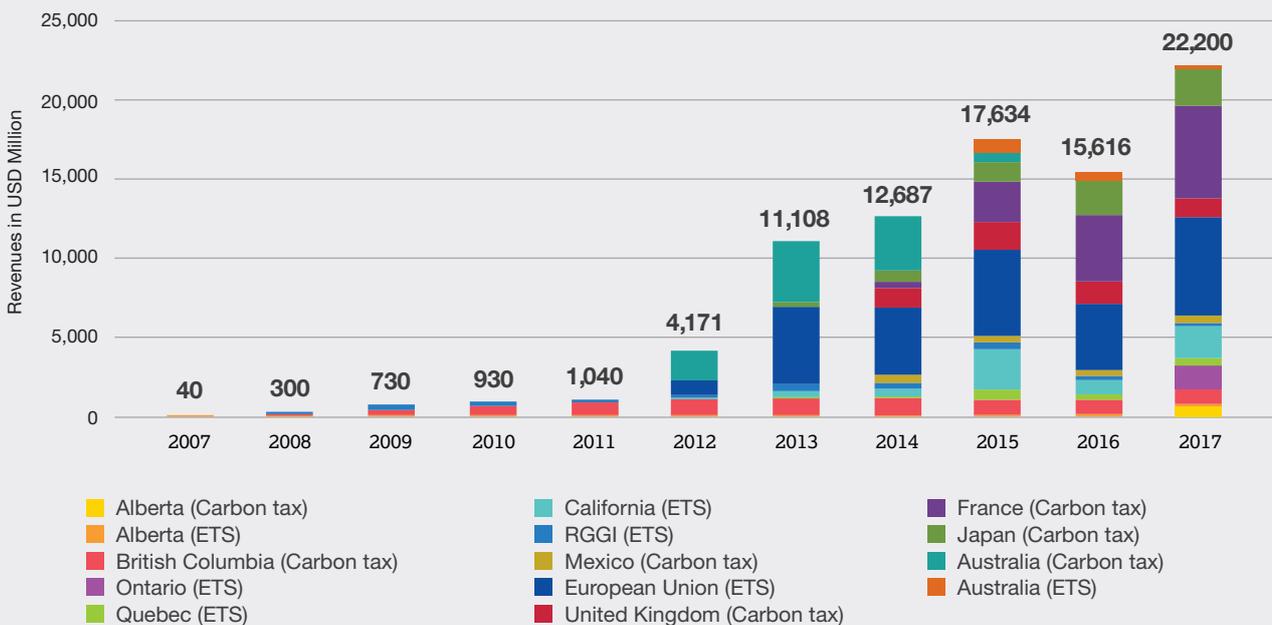
### Following instrument set up

- Is the information on revenue utilization available to the general public and updated regularly?
- What safeguards are in place to ensure compliance with the key commitments associated with the carbon pricing policy?
- Have review and verification mechanisms been implemented to allow changes and improvements to revenue use? How are public authorities accountable for the proper use of revenues?

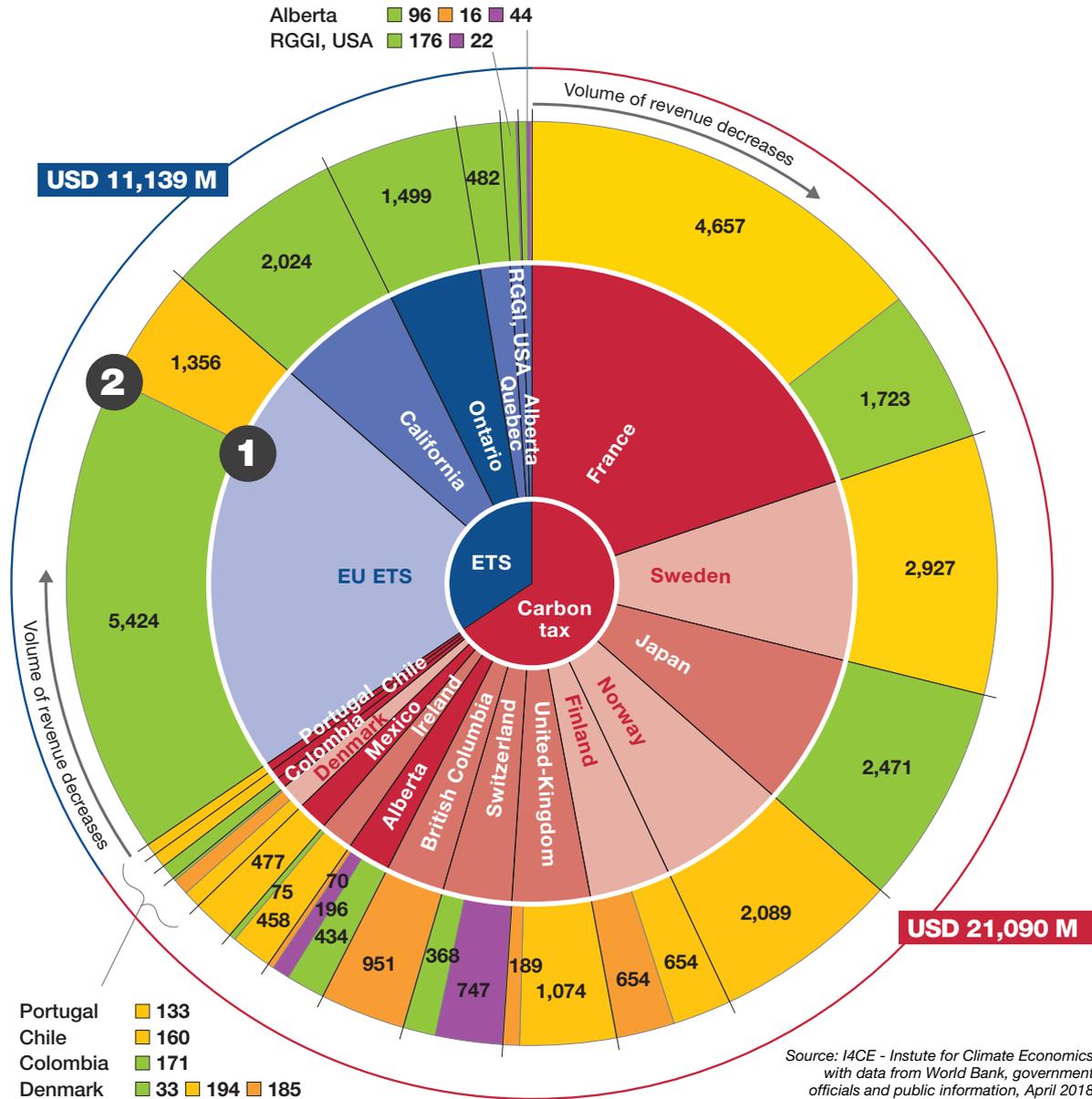
In California, the law requires that at least 35% of the auction proceeds benefit the most disadvantaged populations. In practice, more than 50% of revenues benefit the poorest households. An interactive map detailing all projects and programs supported by carbon revenue is also available on the California Climate Investments website.

## CARBON PRICING REVENUE IN G20 COUNTRIES

As part of the Climate Transparency initiative, I4CE has compiled carbon revenues in G20 countries from 2007 onwards. Following 5 years of relatively slow growth, carbon revenues have grown from USD 4.2 to USD 22.2 billion between 2012 and 2017, an increase of 429% in five years.



# Carbon pricing: use of revenues (in million USD)



## 1 Year of implementation

- Carbon tax since 2013
- Carbon tax between 2008 and 2013
- Carbon tax before 2007
- Emissions Trading Scheme since 2013
- Emissions Trading Scheme between 2008 and 2013
- Emissions Trading Scheme before 2007

## 2 Revenue uses

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

## Key takeaways

- 65% of carbon revenues are generated by carbon taxes, amounting to USD 21 billion. ETS have generated USD 11 billion.
- More than 67% of carbon revenues come from member countries of the European Union.
- At the global scale, 46% of revenues are earmarked for projects dedicated to the low-carbon transition; 44% are allocated in the general budget; 6% finance tax exemptions; and 4% are directly transferred to businesses and households.

Note: Figures represented here are for calendar year 2017 or fiscal year 2016/2017. If no data was available, calendar year 2016 was taken into account.