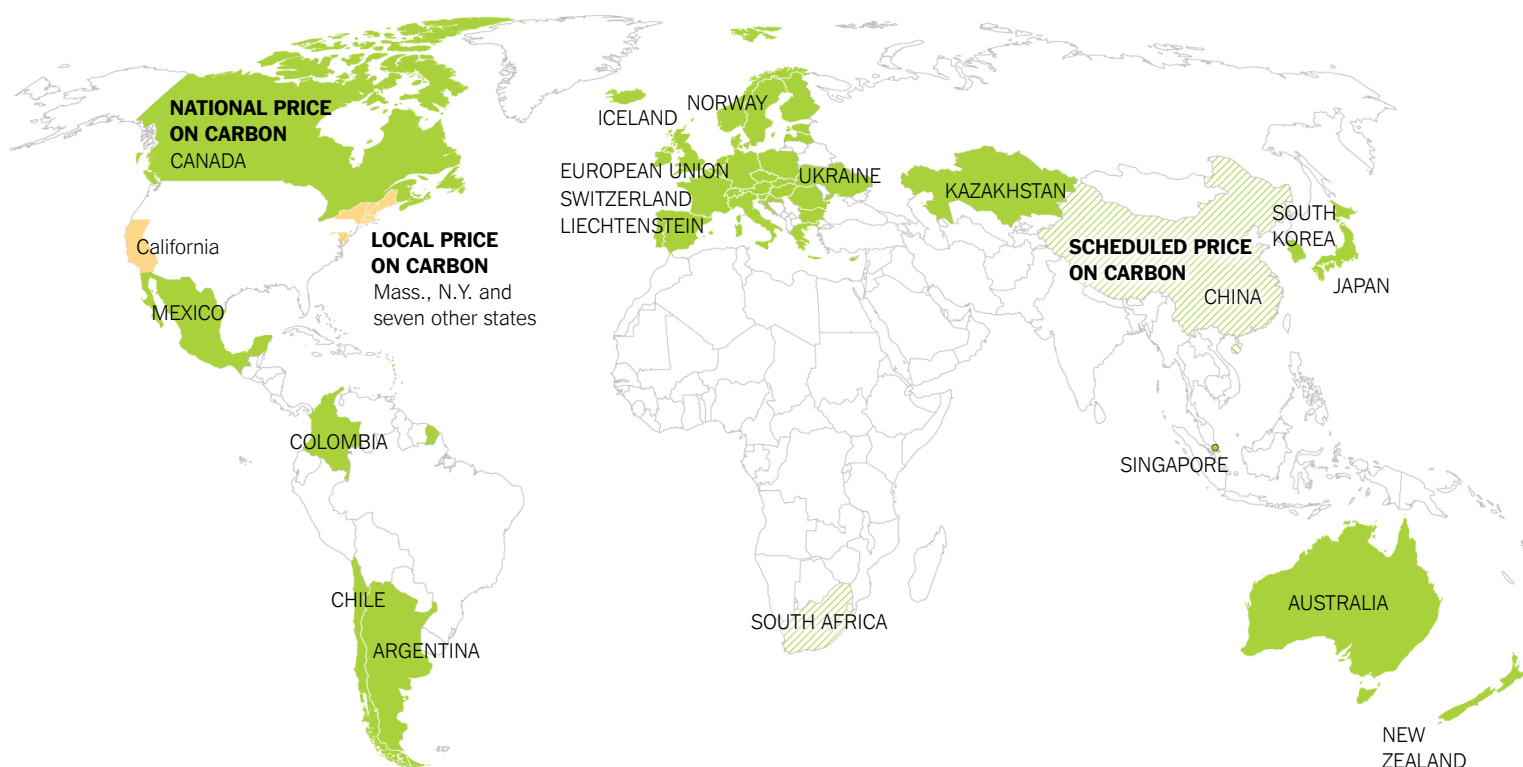


These Countries Have Prices on Carbon. Are They Working?

By BRAD PLUMER and NADJA POPOVICH APRIL 2, 2019



Note: A local price on carbon is only highlighted where no national or European Union rules are in place. Some countries with a national price on carbon also have local-level programs that operate under separate rules. | Source: [World Bank](#)

The idea of putting a price on carbon dioxide emissions to help tackle climate change has been slowly spreading around the globe over the past two decades.

This week, Canada's federal government took the latest step when it extended its carbon-pricing program nationwide by [imposing a tax on fossil fuels in four provinces](#) that had declined to write their own climate plans.

More than 40 governments worldwide [have now adopted some sort of price on carbon](#), either through direct taxes on fossil

fuels or through cap-and-trade programs. In Britain, coal use plummeted after the introduction of a carbon tax in 2013. In the Northeastern United States, nine states have set a cap on emissions from the power sector and require companies to buy tradable pollution permits.

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Economists [have long suggested](#) that raising the cost of burning coal, oil and gas can be a cost-effective way to curb emissions. But, in practice, most countries have found it politically difficult to set prices that are high enough to spur truly deep reductions. Many carbon pricing programs today are fairly modest. In France and Australia, efforts to increase carbon taxes were shelved after a backlash from voters angry about rising energy prices.

Partly for that reason, carbon pricing has, so far, played only a supporting role in efforts to mitigate global warming. Here are some efforts to date:

CANADA

Current prices per
metric ton of CO₂

\$15-\$30

Share of emissions
covered per province

47%-90%

Canada currently has one of the most ambitious carbon pricing programs in the world. Under Prime Minister Justin Trudeau, the Liberal government has enacted [a nationwide tax on oil, coal and gas](#) that starts at \$15 per ton of carbon dioxide this year and will rise to \$38 per ton by 2022. Most of the revenue will be refunded to Canadians on their tax bills; the government estimates that these refunds will offset higher energy costs for about 70 percent of people.

A number of key industries that face intense trade competition, like steel and chemicals, are exempt from Canada's tax. Instead, they will participate in [a separate program](#) in which

the dirtiest companies within each sector will either have to pay the government for their excess emissions or buy carbon credits awarded to the cleanest companies.

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Individual provinces can opt out of the federal program by designing their own local climate policies. British Columbia, for instance, has its own higher carbon tax in place, which rose to \$30 per ton this year, and Quebec has enacted a local cap-and-trade system. But four provinces, including Ontario, refused to create their own plans, and the federal tax [went into effect in those places on April 1](#).

The tax is a core part of Mr. Trudeau's plan to reduce Canada's emissions 30 percent below 2005 levels by 2030. However, Canada is expected to hold national elections in October and the opposition Conservatives [have vowed to repeal the tax](#) if they take power.

BRITAIN

Current price per
metric ton of CO₂

\$25

Share of emissions
covered

23%

In Britain, the birthplace of the Industrial Revolution, greenhouse gas emissions [have fallen to their lowest level since 1890](#). One key factor: A carbon tax that has prompted electric utilities to switch away from coal.

Technically, Britain is covered by the European Union's broader [cap-and-trade system](#), which sets an overall ceiling on emissions from key industries and allows companies to buy and sell carbon permits. But, because of a glut of permits on the market, carbon prices in Europe remained low for years and the program has had a relatively muted effect on emissions.

So, in 2013, Parliament enacted a carbon price floor under the system for certain sectors, including electricity, a policy that

essentially functions as a carbon tax of around \$25 per ton. That tax has [encouraged electric utilities](#) to rapidly switch from coal to somewhat cleaner natural gas. This is perhaps the clearest example in the world of a carbon tax leading to a significant cut in emissions.

UNITED STATES

9 Northeastern states

Current price per
metric ton of CO₂

\$5

Share of emissions
covered

18%

California

Current price per
metric ton of CO₂

\$15

Share of emissions
covered

85%

With Congress largely gridlocked on climate policy, the main carbon pricing efforts in the United States have unfolded at the state level.

In the Northeast, nine states currently participate in the [Regional Greenhouse Gas Initiative](#), a cap-and-trade system that auctions to power plants a steadily dwindling supply of carbon pollution permits. Carbon prices under this system have been fairly modest to date, and it is unclear how much the prices themselves have driven emissions reductions in the region. But states have used the money raised by the auctions to invest in efficiency and clean energy programs.

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California, meanwhile, has enacted its own cap-and-trade program that goes beyond power plants and also covers

manufacturers, refineries, and other polluters. Here, too, carbon prices under the system have remained modest to date, in part because the initial cap was set fairly high, and most of California's emissions cuts to date [have come as a result of other climate policies](#). Those include the state's efficiency standards for buildings, and aggressive renewable power targets. State officials are now struggling to tighten the cap so that it drives bigger cuts in future years.

There are some signs that carbon pricing [could expand further in the states](#). Virginia and New Jersey are making moves to join the Regional Greenhouse Gas Initiative, and several Northeastern states are planning a similar program for cars and trucks that would put a price on transportation fuels and invest in mass transit, electric buses or other low-carbon solutions.

CHINA

Expected price per
metric ton of CO₂

TBD

Expected share of
emissions covered

25%-30%

Since 2011, China has been experimenting with cap-and-trade programs in several pilot cities, including Shanghai and Shenzhen. The country plans [to gradually roll out a nationwide cap-and-trade program](#) starting in 2020, with several years of testing before expanding to major sectors like electricity, steel and concrete.

If China manages to follow through, it will have created the largest carbon-pricing program in the world. But the government has not yet finalized key details, like how high it will set the overall emissions cap. Chinese officials [have been talking with representatives](#) from California and the European Union, trying to learn from their often-rocky experiences in designing cap-and-trade programs.

AUSTRALIA

Current price per

Share of emissions

\$10

Minimal

In 2012, Australia's Labor Government rolled out a cap-and-trade program that essentially set a price on carbon of \$23 per ton. Emissions fell nationwide under the program, but the policy faced a fierce political backlash from industry groups and voters. When the more conservative Liberal Party swept into power in 2013, it quickly repealed the program.

Australia currently has a far more lenient carbon pricing program in place, called the Safeguard Mechanism, in which large industrial polluters that exceed a pollution baseline can buy carbon credits to compensate. In 2017, only a handful of companies, including several coal mines, [spent about \\$6 million](#) buying credits. Australia is currently on track to [miss its overall goals](#) for cutting emissions.

Carbon pricing could still make a comeback. Australia is expected to hold federal elections in May, and the Labor Party [has proposed bringing back](#) a scaled-down version of cap-and-trade for the nation's largest polluters. Still, carbon pricing remains a contentious issue in the country, which has been hit hard by global warming but is also the world's biggest exporter of coal.

All prices are in U.S. dollars. Source of current carbon price and emissions coverage: [University of Calgary](#), [Government of British Columbia](#) (Canada); [Australia's Clean Energy Regulator](#) (Australia); [International Carbon Action Partnership](#) (California); [Regional Greenhouse Gas Initiative](#) (9 U.S. states); [World Bank](#)

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