



CARBON PRICING

A lever for energy transition

CARBON PRICING: *why?*

The international community has set itself the target of limiting the global temperature rise to 2°C. In today's world, the challenge is to invent new ways of manufacturing goods, producing food, travelling and keeping ourselves warm, without emitting more greenhouse gases (GHG) into the atmosphere than what we are technically able to remove from it. Climate action can be considered as an insurance for our societies against unacceptable costs generated by the risk of increasingly frequent climate-triggered natural disasters, irreversible damage to ecosystems and mass population migrations.

In addition to avoid climate damage there are many benefits of climate action, including greater energy autonomy, reduced atmospheric pollution, which is

harmful for human health, and the economic benefits of new green growth sectors. However, the efforts needed to make the transition to economies that emit fewer greenhouse gases must not be underestimated. This transition requires the mass redirection of investments into clean transport, renewable energy sources, building insulation and the development of agroecology, in a highly restricted financial and budgetary context. The economic and financial tools used for explicit or implicit carbon pricing give clear messages about the benefits of emitting less carbon, or alternatively the cost of greenhouse gas emissions for society. Consequently, they make it possible to accelerate the energy transition.

Carbon Pricing Leadership Coalition

74 countries and over 1,000 businesses formed a coalition for carbon pricing during the United Nations Climate Summit in September 2014, held at the invitation of the UN Secretary-General. The goal of the coalition is to promote productive dialogue between public and private decision-makers concerning opportunities to extend carbon pricing policies. It has been officially launched on November 30, 2015, on the opening day of COP21. Members of the coalition include France, Germany, Mexico, Canada, Chile and Ethiopia.

France's national low-carbon strategy

The national low-carbon strategy organises the reduction of greenhouse gas emissions sector by sector. The strategy shares five-year targets with economic players and offers opportunities to better coordinate efforts by drawing on a range of tools where carbon pricing will have a key role to play.



Carbon PRICING TOOLS

Public policy-makers and businesses that have understood the climate risk for their activities, have

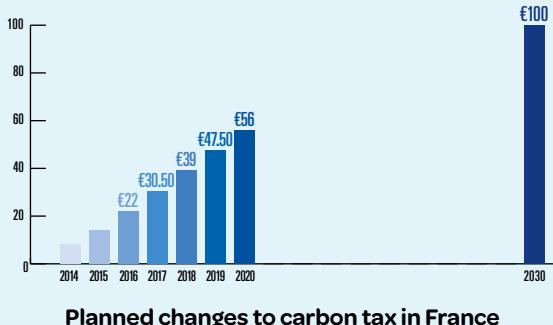
developed a range of public and private carbon pricing tools.

Public tools

■ DIRECT PRICE FOR CO₂

To minimise the cost of the low-carbon transition, the easiest solution in theory is to make polluters directly pay for the price of carbon:

→ **via a tax system** where revenue can be reused to reduce taxes elsewhere. Carbon tax in France (or the carbon component of internal fossil fuel consumption taxes) would therefore not lead to an overall increase in tax. In 2015, the tax rate was €14.50 per tonne, and is €22 in 2016. The Energy Transition for Green Growth Act plans for this tax to increase to €56 in 2020 and, finally, €100 in 2030;



→ **or via emissions trading**, whereby facilities emitting more than their allocated CO₂ emissions quota are required to purchase permits on the market, resulting in a financial penalty to make up for their surplus emissions. On the other hand, facilities that reduce their emissions can sell their unused quotas on the market and generate income. In Europe, emissions trading has been introduced for the energy and industrial sectors, which generate the most CO₂ emissions. One tonne of CO₂ is currently traded at around €6. This price signal is not sufficient to trigger low-carbon investments. To overcome this weakness, France proposes to introduce into the EU-ETS a soft price collar, that would channel the evolution of the market price between a minimum and a maximum to provide a more stable price signal and incentivize low-carbon investments. Several carbon markets in the world, in particular in Northern America, which have right from the start set up a reserve price on auctions and releasing allowances when prices are too high. A price corridor in the EU ETS could take stock of those international experiences.

Calculation of the market price of CO₂



■ CO₂ AVOIDED SUBSIDIES

In practice, the most commonly used tools are those that reward the emissions avoided via subsidies for low-carbon investments. In particular, these subsidies take the form of renewable energy feed-in-tariffs and tax credits in favour of energy efficiency.

■ REGULATIONS

For sectors without explicit prices, such as agriculture, transport or waste management, standards can reflect the implicit price of carbon at which the measure to reduce emissions was introduced at the initiative of economic players. For example, in transport, the price would need to be over €100 per tonne, which would be difficultly accepted, in order to offer an incentive to change behaviour or for car manufacturers to drastically reduce engine fuel consumption. Regulation is therefore useful for accelerating the process and encouraging technological breakthroughs.



■ SHADOW PRICE OF CARBON

In order to guide infrastructure investment decisions, the French government has included the "shadow price of carbon" in the socio-economic assessment of projects. This price is currently estimated at around €30 and €100 in 2030. It represents in France the estimated price of carbon that would need to be used to meet the national target of reducing greenhouse gas emissions by 75% by 2050.



Private tools

Business Climate Week was introduced at France's initiative for top-level dialogue between businesses and governments for climate negotiations, with a session organised in May 2015 in Paris. This demonstrated that carbon pricing was no longer a taboo for businesses and that many of them (25 networks representing 6.5 million businesses) are prepared to commit to carbon pricing.

■ INTERNAL CARBON PRICING

Some businesses have already incorporated carbon pricing in their business models, without waiting for it to be introduced by the public authorities. The price may be defined based on carbon market prices, by matching the shadow price of carbon, or alternatively, according to business-specific criteria. Carbon emissions are counted as costs, giving an advantage to projects with relatively fewer emissions. This ensures that the climate risk is included in decisions and helps anticipate regulatory changes that could affect the future profitability of unprepared businesses.

In France, the Energy Transition for Green Growth Act requires institutional investors to disclose to their beneficiaries their portfolio's exposure to climate-related risks and on the contribution to climate targets (Article 173).

■ VOLUNTARY CARBON OFFSET MARKETS

Some businesses adopt a more voluntary approach by setting themselves a sort of internal tax on carbon activities. Revenue from this internal tax is then reinvested in internal energy efficiency projects or carbon offsetting projects on voluntary carbon markets.



■ DIVESTMENT IN THE FOSSIL FUELS SECTOR

The financial sector has also largely become aware of the risks that climate change poses for its stability, as demonstrated by the increasing movement of major banks towards disinvestment in the coal sector and the fossil fuels sector in general, whose long-term profitability is threatened.

On 10 September 2015, the French President announced the end of export credits from France for coal-fired power stations unless they are equipped with carbon capture and storage technology.

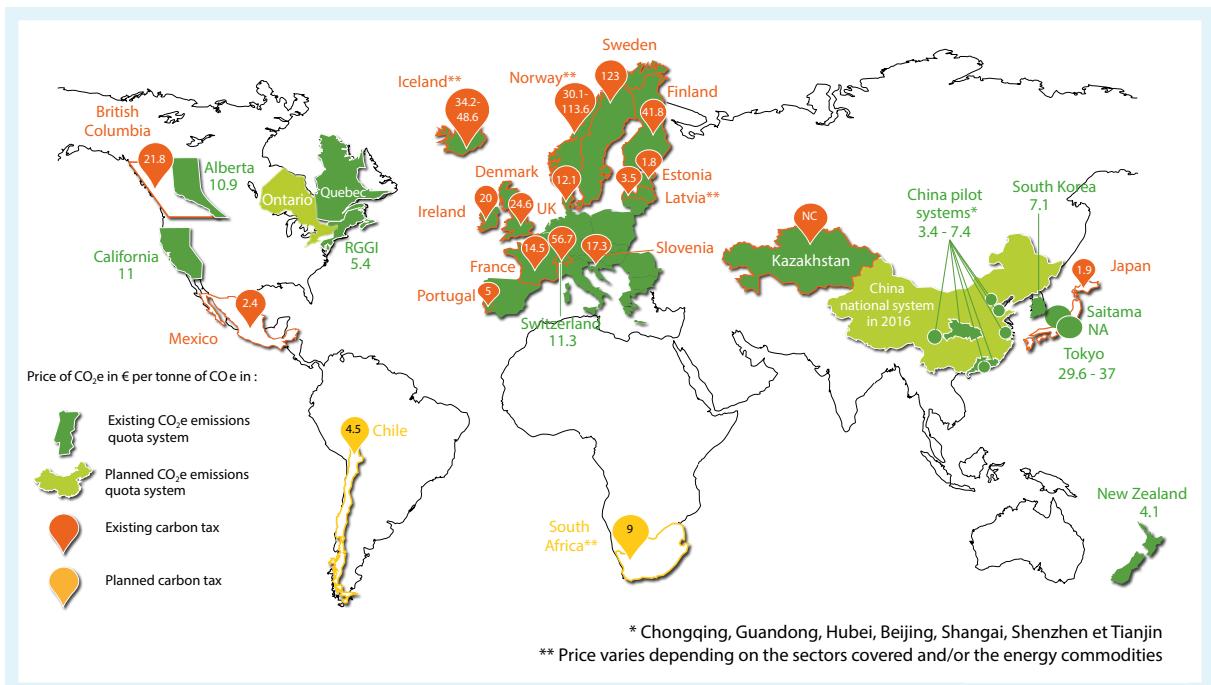


CARBON PRICING *across the world*

There is now a plethora of tools for explicit or implicit carbon pricing on a national, regional and sector level. None of these tools are available at a global scale as carbon taxes are first and foremost national or sub-national measures.

The European Union emissions trading system is the first regional carbon market. Sub-national pilot trading systems have been created in China. The link between the Californian and Quebec cap-and-trade systems is the first example of successful collaboration between sub-national markets.

In 2014, the World Bank counted 40 countries, covering 12% of global emissions, which have introduced a carbon tax or emissions trading system, or which are in the planning phase. The range of carbon prices observed worldwide varies from a few euros in Mexico to over €100 in Sweden.



Map of emissions trading systems and other existing or considered carbon pricing mechanisms across the world
(source: I4CE 2015)

THE ROLE OF CARBON PRICING *in the Paris Agreement*

The diversity of prices and tools used across the world distorts competition and prevents countries from meeting their targets at the lowest cost. However, a single carbon price would be unfair as it would not have the same impact on poor countries and rich countries. \$50 for CO₂ could be considered unacceptable in India where it would double the cost of cement in a country undergoing rapid urbanisation, whereas the social impact of the same price would be much lower in France.

To this end, the decisions of the Paris Agreement recognize the "social, economic, and environmental value of mitigation activities (§108), as well as the incentives provided by carbon pricing instruments to reduce GHG emissions (§136). Those decisions encourage willing countries to implement carbon pricing instruments in order to meet climate objective in a transparent and efficient manner.

Find out more

→ I4CE (INSTITUTE FOR CLIMATE ECONOMICS)

Putting a price on carbon - Accelerating the dialogue: a challenge for governments and a request from businesses (2015).

www.i4ce.org > Publications tab

→ WORLD BANK

State and trends of carbon pricing (2015)

www.wds.worldbank.org

(publication accessible via the search bar)

→ CEPII/FRANCE STRATÉGIE

www.strategie.gouv.fr > Thématiques > Développement durable et technologies > Le financement de la transition bas carbone

→ Centre d'analyse stratégique

La valeur tutélaire du carbone, Alain Quinet (2009).

www.ladocumentationfrancaise.fr > Rapports publics > Territoire, environnement > Environnement (publication accessible via the search bar; select the "territoire, environnement" theme)

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