

MISSION REPORT

PASCAL CANFIN • ALAIN GRANDJEAN • GÉRARD MESTRALLET
submitted to **Ségolène Royal, President of COP21**

July 2016

PROPOSALS FOR ALIGNING CARBON PRICES WITH THE PARIS AGREEMENT.

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Rapporteurs :

Anaïs Maillet (DGEC), Baptiste Perrissin Fabert (CGDD),
Michel Massoni (CGEDD), Fabrice Dambrine (CGE),
François Valérian (CGE)

with the support of Benoît Faraco (European Climate
Foundation), Anne Chassagnette (ENGIE),
Hervé Casterman (ENGIE), Sophie Aubert (ENGIE).



CONFÉRENCE DES NATIONS UNIES
SUR LES CHANGEMENTS CLIMATIQUES
COP21·CMP11

Presentation of the mission

Ségolène Royal, President of COP21 has entrusted Pascal Canfin (former Minister, Managing Director of WWF France), Alain Grandjean (co-founder and partner of Carbone 4), and Gérard Mestrallet (Chair of ENGIE) with the mission to bring proposals for enhancing carbon pricing across the world.

More specifically, the co-chairs were asked to:

- (i) Analyse and develop concrete proposals on the way to implement the French proposal of introducing a soft price collar on the European carbon market,
- (ii) Make proposals on a national measure to accelerate the phasing out of coal in France, through the introduction of a carbon price floor on the electricity market aiming at encouraging the use of gas rather than coal
- (iii) Bring ideas to enlarge the perimeter of carbon pricing across the world.

The mission **interviewed more than 80 experts of carbon pricing** (from governments, research organizations, and a broad range of stakeholders including representative of business and civil society) in France, in Brussels and in Berlin.

The following executive summary of the report recalls that **carbon pricing is a key instrument to meet the decarbonization goal adopted in the Paris Agreement** and proposes concrete and pragmatic solutions to introduce a carbon soft price collar in the EU-ETS. The reform of the European carbon market is a real credibility test for the European Union which has to enhance its climate policies, and thus contribute to a broader positive dynamics to enlarge the perimeter of carbon pricing across the world. **This report also contains detailed proposals to implement a carbon price floor in France**, and enhance efficiency of carbon price instrument worldwide.

Executive summary

There is now a wide consensus among economists, international organizations, NGOs, and even businesses which joined the cause with the momentum created by COP21 on the key role played by carbon pricing and climate finance instruments to trigger a low-carbon transition in an efficient way. These instruments make polluters pay for the cost of greenhouse gas emissions for society, and symmetrically, reward those who avoid such costs through emission reductions. Thereby, they accelerate the transition while providing significant co-benefits.

1. Sending an efficient and predictable price signal on the European carbon market

A necessary reform of the European carbon market

The European carbon market, which covers about 45% of European Union emissions, is a regulated system allocating emissions rights and using a price signal to optimize the cost of emissions reductions. **Until now, even though the emissions covered by this system have remained below the cap set by the European Union, the role of the carbon market to meet the emissions reductions objective has been rather limited.** Indeed, emissions reductions in Europe were mostly due to both the economic crisis, and to other successful policies (such as standards for energy efficiency and targets for renewable energy) which contributed to significant emissions reductions in some sectors. Confronted with these unexpected emissions reductions, and the inflow of international carbon credit coming from Kyoto protocol mechanisms, the European carbon market has not been able to deliver an efficient carbon price. The resulting surplus of quotas together with the absence of expected structural reforms of the market have kept carbon prices at very low levels and undermined the credibility of the trajectory of future European emissions.

This situation has led to an inconsistency between the Paris agreement, the long and mid-term European climate objectives¹, and the functioning of the European carbon market. Such inconsistency has several damaging impacts on the price signal. Regarding quantities, (i) the planned reduction of emissions cap in the future is not sufficient to meet the objective of 80% to 95% decrease in emissions by 2050 compared with 1990 levels, and (ii) the possibility of using after 2020 unused allowances allocated before 2020 will disturb the price signal on the market by maintaining a surplus. Current price levels at around 5€/tCO₂ and expected trends of prices are far too low to provide any incentive for transitioning toward low-carbon investments.

So far, successive reforms of the European carbon markets have only brought one-off solutions to those difficulties. Complementary action is required as prices are too low and too volatile to both guide today's operational decisions, and foster the low-carbon investments we need to meet the objectives decided in the Paris Agreement. An efficient and predictable price is essential to influence businesses' decisions that will partly drive the future trajectory of European emissions.

In particular, the economics of the power sector, based on marginal costs for power generation, is directly influenced by the carbon price and the price of fossil fuels. Current low prices of lignite and coal, combined with a poor carbon price signal are not sufficient to deter investments from carbon intensive assets damaging the climate. In this context, some countries consider that the European carbon market is not able today to deliver the appropriate signal to transition towards a low-carbon economy and decide to implement unilateral measures. The UK for instance has implemented since 2013 a carbon price floor on electricity production to accelerate the phasing out of coal-fired power plants and the energy transition of the country. France has recently decided to follow the UK example, announcing the implementation in 2017 of carbon price floor in the power sector in order

¹ At least 40% decrease in greenhouse gases emissions by 2030 compared with 1990, and between 80% and 95% by 2050.

to favour gas against coal generated power. In Germany, there is an ongoing debate on how to best plan the phasing out of coal generated power. **In order to avoid a fragmentation of climate policies, it is of critical importance to implement, without delay, measures aiming at both regulating quantities and providing a relevant price signal at the European level.**

A soft price collar for the European carbon market

Setting up a soft price collar with a minimum and a maximum price would strengthen the regulation of the market through quantities. Indeed, such a soft price collar would act as a « pull back force » on prices making sure that the price trajectory is consistent with European climate objectives and would incentivize low-carbon investments as soon as possible.

A soft price collar would make it possible to:

- **send, notably through the floor price, a sufficiently strong signal to trigger low-carbon investments**, starting with the energy sector where technological substitutes are already available ;
- **guide economic agents' expectations and smooth over time the costs of transition**, rather than accepting greater costs in the future due to sudden acceleration of mitigation efforts;
- **adjust the supply of quotas to exogenous shocks** in a more reactive manner than what is currently possible with a regulation only determined by the quantity. These shocks can result from a sharp contraction of economic activity or unintended consequences of the interaction of different climate policies. The soft price collar would ensure that prices do not get too far from a trajectory that is consistent with the European objectives, even when the demand of quotas is suddenly impacted upward or downward by a shock.

Such soft price collar could build upon the existing auction mechanism, taking stock of the experience of Northern American carbon markets. Indeed those markets have established, right from the start, an auction reserve price which prevents allowances from being released into the market when the auctioning price does not reach a minimum level. Conversely, when the ceiling price is reached, allowances are released at the price ceiling to provide a safety valve in case of high prices.

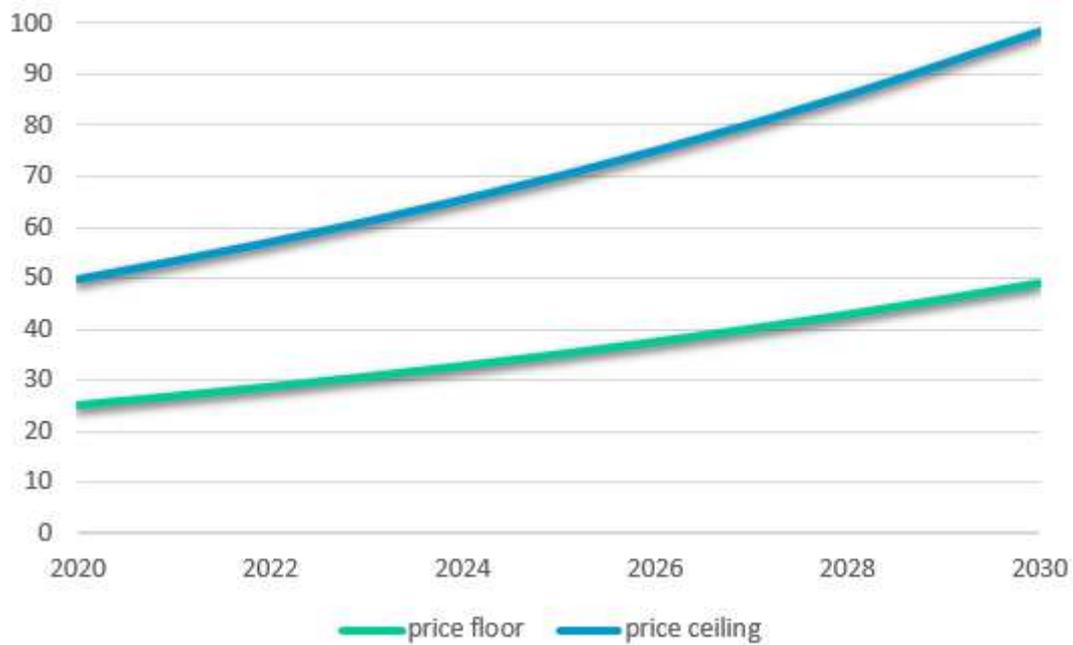


Figure 1: Trajectory of the soft price collar proposed by the commission

The trajectory of the soft price collar would be set at a level that would accelerate the transition to a low-carbon economy, in particular in the energy sector, which accounts for nearly 60% of the European carbon market emissions in 2015. Prices below the price floor of that corridor would prevent the economy from deploying a lot of low-carbon measures in the industry. The price floor could be set between 20€ to 30€ in 2020, with an annual increase of 5 to 10% in order to overshoot 50€ in 2030, and the price ceiling set at 50€ in 2020 with the same annual increase as the price floor. The slope of this trajectory is key to anticipate the trend and provide visibility to investors.

If the price floor is superior to current levels of carbon prices, it will drive up the wholesale price of power in Europe. Still, it is important to notice that wholesale power prices in Europe are historically low. This represents a good window of opportunity to make a carbon pricing reform more acceptable, in particular for the industry.

A soft price collar will increase substantially auction revenues for governments in the mid-term. These extra revenues should be used to cope with the social and economic consequences of the implementation of a price floor, and should support the development of low-carbon sectors and best practice to reduce businesses' and households' energy bills, in particular for those in situation of fuel poverty.

A relevant carbon price signal strengthens the competitiveness of businesses that are providing low-carbon solutions and sows the seeds of future dynamism and prosperity within the European Union. However, in the short term, carbon pricing can negatively impact some carbon intensive sectors. The implementation of this soft price collar should thus be accompanied by improved and strengthened provisions to mitigate the potential risk of loss of competitiveness for these sectors. In the absence of equivalent carbon pricing policy in the rest of the world, European climate policies could create competition distortion between EU companies and their foreign competitors. To protect companies that are effectively exposed to a risk of loss of competitiveness, transitory measures should be taken such as the inclusion of importation in the European carbon market, or free allocation of quotas. Such measures should be based on the following principles: (i) making sure that the most efficient European plants, effectively exposed to this risk, are compensated till 100% of the

carbon costs in order to set a level playing field with their foreign competitors; (ii) not undermining the goal of the European carbon market; (iii) being transparent, understandable and transitory.

Finally, the Commission supports the idea of introducing an independent Advisory Committee that would provide regular notifications both on the regular revisions of the Paris Agreement and on the evolutions of the market conditions in order to better steer the European carbon market regulation. The objective of this Committee would be to appraise, on a regular basis, the price trajectory and its articulation with the quantity regulation, warning decision makers to avoid the risk of material divergence from the objective.

A broader discussion on the consistency of European instruments with climate objectives

The discussion on a soft price collar is complementary to a reflection on a better regulation of the quantities. It is also part of a broader discussion on the coherence of climate policy instruments with the European emission reductions objectives. Other proposals targeting the quantities have been made. Some suggest for instance to reduce the cap of emissions, or to find solutions to cut down the current surplus of quotas.

The objectives set by the European Council to reduce emissions by 43% in 2030 in the European carbon market compared with emissions level in 2005 will require sharp decrease of the cap after 2030 to be consistent with the -90% objective for 2050. The proposal by the European Commission to increase the annual reduction factor of emissions cap from 1.74% to 2.2% from 2020 is not sufficient to meet the EU commitments taken in Paris. A possible solution would be to adjust the trajectories of emissions reductions in the European carbon market to the 2050 objective, by increasing the annual reduction factor up to 2.4% or 2.6% per year from 2020. Another option would be to change the reference years from which annual reductions are computed.

It is therefore urgent to act now to improve the functioning of the market in order to accelerate – in the short term - the transfers of quotas into the reserve, and - in the longer term - to send a credible signal that the market will be short at some point and well-aligned with the EU 2050 objective. The soft price collar proposal addresses pragmatically this urgency to act.

More broadly, the credibility of French and European commitments at COP21 implies to raise the pace of emissions reductions, in particular in a context of low prices of energy (due to the decrease of fossil fuels prices). In addition to the necessary reform of the European carbon market, **the increase of the carbon component of energy taxation and the reopening of European discussions on that topic are essential conditions to accelerate changes of behaviours.**

2. A national measure to accelerate the phasing out of coal in France

President Hollande announced during the fourth environmental conference in April 2016, that a carbon price floor will be implemented in the French power sector in order to favour gas-fired power generation against coal-fired power generation.

The implementation of this announce could take different forms:

- **a uniform top-up tax that the French power plants will pay in addition to the price of quotas on the European carbon market, so that total carbon price for the power sector makes 30€/tCO₂;**
- **the increase of an existing tax on coal**, such as the consumer excise duty, or the implementation of a differentiated tax according to thermal performance of power plants;
- **a technical standard** based on carbon emissions of power plants

Economic studies² identify the following impacts:

| | Impacts on greenhouse gases | Impacts on power prices | Impacts on power supply security |
|---------------------------------|-----------------------------|-------------------------|----------------------------------|
| Tax targeting both coal and gas | ↘ | ↗↗ | ↘↘ |
| Tax targeting coal only | ↘↘ | ↗ | ↘ |
| Technical standard | ↘↘ | ↗ | ↘ |

The impact of a uniform top-up tax would be:

- Emissions reductions in the EU between 3 and 6 millions of tons of CO₂, or equivalently from 0.15% to 0.3% of total emissions covered by the European carbon market. These reductions can be decomposed into a drop of 12 millions of tons in France compensated by an increase in emissions in the rest of the EU, in the absence of a coordinated measure at the EU level such as a soft price collar;
- Decrease in operating hours of French coal-fired power plants leading to their quasi closure, and decrease also of operating hours of gas-fired power plants, below 500 hours per year, leading to significant operating losses, that could result in closing or mothballing them;
- Possible increase in the supply security risk on the French power system;
- Increase in the wholesale power price in France ranging from 5 to 10% of mean wholesale prices in 2015.

It is therefore important to design the French measure so that it maximizes its environmental impact, does not destabilize power supply security, and as desired by the President, “favours, for the specific power sector, the use of gas against coal”. In light of these elements, the commission suggests two solutions: (i) defining a technical standard, based on CO₂ emissions of power plants, or (ii) increasing an existing tax on coal, such as consumer excise duty, or implementing a differentiated tax according to thermal performance of power plants for instance in order to incentivize energy efficiency of thermal power generation.

Now, the technicalities of those options have to be scrutinized to allow fast implementation of the measure in accordance with the conditions and objectives set by President Hollande. The commission stresses out the urgency to conduct legal studies in order to make sure that the retained option complies with the French Constitution and the European law.

Lastly, in order to preserve the environmental integrity of the national measure, the commission flags the importance of examining how to remove from the European carbon market the amount of quotas corresponding to the extra emissions reductions due to the closure of power plants.

3. Promoting carbon pricing across the world

² Those studies have been conducted by Direct énergie, EDF, Engie, Chaire Economie du Climat, Thomson Reuters, Compass Lexecon, and UFE.

At the international level, ambitious objectives aiming at stabilizing the climate were adopted in Paris on December 2015 : article 2 of the Paris Agreement sets the collective objective of keeping the increase in mean global temperature well below 2°C (1.5°C if possible) compared to pre-industrial level. Each party has to elaborate and implement a national contribution to this objective, the ambition of which can only ratchet up with time. For the first time in climate negotiation history, countries, supported by non-governmental actors, have unanimously recognized that climate policies are the levers of a more resilient regime of development.

Carbon pricing, whatever the practical forms it takes (emission trading system or carbon tax for instance) is one of the key tools to trigger the low-carbon transition we need to meet climate objectives and reap their co-benefits in terms of health, energy security, and green growth.

To date, carbon pricing only covers a small – but growing – share of global greenhouse gases emissions. Now many actors wish to enlarge the perimeter of carbon pricing. For instance, the Carbon Pricing Leadership Coalition (CPLC) aims at doubling the share of emissions covered by carbon prices by 2020, and doubling it again from 2020 to 2030 in order to reach a coverage of 50% at this date. The bigger the share the more dramatic impact carbon prices would have on greenhouse gas emissions reductions, and the smaller would be the risk of loss of competitiveness. It is also critical to address the question of the redistribution of incomes generated by carbon prices. The redistribution should support the funding of the energy transition, and the preservation of the competitiveness of businesses in regions of the world that are the most advanced in terms of emissions reductions.

For the first time, financial actors have come on board and started to address the climate challenge from a risk management perspective: climate change brings new risks that may endanger the stability of the financial sector if there are not appropriately taken into account. This is why the Financial Stability Board is now trying to appraise those risks and a growing movement of divestment from fossil fuel is taking place among institutional investors as long-term returns of these assets is threatened.

The Paris Agreement does not directly deal with carbon pricing issues. Still, there is in the text of the Agreement and the Decisions coming along, some elements providing the seeds for enlarging the perimeter of carbon pricing.

Article 2 of the Agreement sets the general objective of making financial flows compatible with climate-resilient development. **Article 6** of the Agreement, setting up a new market mechanism following the flexibility mechanisms of the Kyoto protocol, echoes **paragraph 108** of the Decision that recognizes the social, economic, and environmental value of mitigation activities, as well as **paragraph 136**, although it does not apply to countries, that recognizes the important role of carbon pricing as an incentive for emissions reductions activities. All together, we argue that those key juridical elements can be seen as underlying principles for building innovative and efficient economic and financial instruments.

The diversity of carbon pricing initiatives across the world shows that the main barriers to carbon prices implementation lie on their distributive impacts among industries, households, and countries with different levels of development.

Based on this statement, we suggest the following three tracks of measure to enhance social acceptability of carbon pricing : (1) promoting fast enlarging of the perimeter of carbon pricing, at

least among a coalition of countries such as the Carbon Pricing Leadership Coalition, and encouraging the publication on a regular basis of the different levels of carbon prices applied by the industry across the world together with global trends of emissions worldwide; **(2) designing carbon pricing instruments as levers to finance low-carbon development in developing countries, which are attached to the principle of common but differentiated responsibility ; (3) installing a high-level Commission (appointed by the UN) to elaborate an indicative trajectory of a corridor of social values of carbon aligned with the 2°C objective and the objectives of North-South transfers.** Such a corridor would not provide prescriptive values but landmarks for countries willing to implement carbon pricing mechanisms or make the diversity of existing instruments more consistent. Eventually, this corridor would have a « pull effect » on explicit carbon prices that are bound to get close to the social value of carbon in order to meet the 2°C challenge. This Commission could also make proposals on how to deal with the inevitable issue of differences in social values of carbon among different regions of the world and necessary safeguards to the downward risk on prices caused by potential linking of carbon markets across the world.

The 10 proposals of the Mission

Proposal 1 From 2020 on, adjusting the trajectories of emissions reductions of the European carbon markets to the 2050 climate objective, by increasing the factor of reduction of the emissions cap from 2.2%, as suggested by the European Council to the range between 2.4% to 2.6% per year, and setting aside faster the surplus of quotas

Proposal 2 Introducing a soft price collar in the European carbon market based on the Californian and Quebec mechanism, with a reserve price on auctions that would allow to leave allowances on the EU registry when auctioning price does not reach the minimum level.

Proposal 3 Setting up the price floor according to the following trajectory: between 20€ and 30€ in 2020, with an annual increase of 5 to 10% in order to reach at least 50€ in 2030, and thus accelerate the transition toward the least carbon-intensive options, in particular in the power sector. Setting up the price ceiling at 50€ in 2020 with the same trend of annual increase as the price floor.

Proposal 4 Encouraging governments to use auction revenues to support low-carbon innovations, mitigate the social and economic consequences of the price floor, and support developing countries fighting climate changes.

Proposal 5 Establishing a regular review and revision process (every five years) of price floor and price ceiling based on a dialogue between European institutions and an independent Advisory Committee, taking stock of best available information in particular on the pace of enhancement of EU ambition as established in the Paris Agreement.

Proposal 6 In any case, constituting an ambitious coalition with other member States and European leaders to promote carbon pricing in Europe, in particular the idea of introducing a soft price collar into the European carbon market complementing the quantity-based regulation.

Proposal 7 Switching from coal-fired power generation to gas-fired power generation by means of a technical standard based on carbon emissions of power plants, or the increase of existing tax on coal, or a differentiated tax according to thermal performance of power plants.

Proposal 8 Promoting a rapid enlarging of the perimeter of carbon pricing in order to meet as soon as possible the objective of covering 25% of global emissions with carbon prices.

Proposal 9 Installing a high-level commission (appointed by the UN) in charge of defining an indicative trajectory of a corridor of social carbon values, aligned with the 2°C objective and the objectives of North-South transfers.

Proposal 10 Taking the opportunity of the EU dialogue on the climate ambition that will take place in 2018 to re-launch the discussions on the introduction of a carbon component into the European energy tax system as part of the energy taxation directive review.

