The reform of energy taxation: an extension of carbon pricing in France

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POLICY BRIEF

Introduced by the 2014 Finance Act, the reform of the energy products taxation came into force on 1 January 2014. Little publicized, the measure nevertheless endowed the country with a CO_2 taxation system, through the introduction of a carbon component in the existing energy excise tax. Complementing the price signal of the EU Emissions Trading Scheme, this new instrument will allow to extend carbon pricing on emissions from the diffuse sectors and thus to strengthen the French policy for CO_2 emissions reduction.

- The reform of energy taxation introduces a carbon component in the calculation of the domestic consumption taxes (DCT). Set at 7€/tCO_2 in 2014, this new tool will have little impact on prices during this transition year, this tax increase being offset by a symmetrical reduction of the classical DCT for most of the energy sources.
- The system gears up the following years, with two successive increases of 7.50€/tCO_2. The carbon component will reach 22€/tCO_2 in 2016, and will cover all types of fossil fuels. This differentiated increase of energy products taxes will represent between 3% and 10% of the current prices of the energy sources.
- By 2016, the ramp-up of the DCT carbon component is expected to generate €4 billion in revenues. Three quarters of those revenues will contribute to funding the reduction in corporate income taxes (called CICE, Crédit d'impôt pour la compétitivité et l'emploi, in French), through the financing of a large tax credit for competitiveness.
- The system of carbon taxation should lead to lower CO_2 emissions, between 1 and 5 MtCO_2 in 2015 and from 2 to 9 MtCO_2 in 2016, in particular due to reductions in diesel, natural gas and domestic fuel oil consumptions.

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I- The carbon tax in France: a troubled history

A first attempt, at the European level

The first attempt to introduce carbon taxation in Europe was made at the beginning of the 90s. It was a European Commission communication which proposed to introduce a harmonized tax on CO_2 emissions from energy sources in European industry. This proposal was largely controversial. Countries such as Spain and Greece were opposed to it, emphasizing their lesser level of industrialization, while Great Britain fought against it arguing that fiscal decisions should be dealt with by national sovereignty. As unanimity is needed for fiscal matters in Europe, the project was aborted but it led some Nordic countries to unilaterally start on the road to domestic carbon taxation.

Two projects rejected by the Constitutional Council

First attempt at the national level, the Jospin government draft bill (2000) which aimed at extending the "general tax on polluting activities" (GTPA) to CO_2 emissions was blocked by the Constitutional Council because it was considered to be in contradiction with the principle of tax equity. The proposal was back on the agenda in France about a decade later, studied again for the opening of the "Grenelle Environment Forum" of 2009. After recommendations from the "Rocard report", a bill proposing to establish a carbon tax of 17 euros per ton of CO_2 was introduced by the government. The extent of the bill was minimized by many amendments but it was eventually adopted by the Parliament. However, it was censored again by the Constitutional Council because of its excessive exemptions. As a consequence, after the consideration of a new possible version of the project, the proposal was postponed *sine die.*

Introduction in the 2014 Finance Law

After the Committee for Environmental taxation was created[3], the need to extend carbon taxation to diffuse sectors was back at the heart of the discussions. To follow one of the Committee recommendations, the government introduced, in the draft 2014 Finance Act, a rise in the domestic consumption tax in proportion to the amount of CO_2 contained in the products concerned. With low media coverage, the proposal was adopted in December 2014. More than twenty years after its first attempt, France finally gets a carbon taxation system.

[3] Created in 2012, the Committee for Environmental tax is composed of different actors of political, economic, associative and university circles. It is chaired by the economist Christian de Perthuis and aims at assessing the "green" taxation system already existing and to make some proposals to the government.

II- Terms of the introduction of the carbon component in energy taxation

A) A gradual introduction of the carbon component

French energy taxation mainly lays in the domestic consumption tax (DCT)[4]. Being an important source of tax revenues for the State, it is also a major policy lever for the French energy policy orientation. In contrast with previous projects, the carbon taxation system adopted in December did not lead to a new *ad hoc* tax but to the modification of the existing energy excise duty. Indeed, Article 32 of the 2014 Finance Law adds a carbon component to the base of the classical DCT. With 7 Euros per ton of CO_2, it does not have the same impact on the different sources of energy. It leads to two different cases. If the fuel has a DCT rate expressed in Euros by CO_2 ton that does not reach the 7€/tCO_2, its DCT rate is increased in order to do so (see in table 1). This applies to natural gas, coal and heavy fuels. For the other energy products, the introduction of the carbon component does not have any impact during this year of transition, since it is totally compensated by a symmetrical reduction of the classical component of the DCT.

Table 1: Energy products whose DCT rate change in 2014[5,6]

	Units	DCT rates	
		2013	2014
Coal	€ / MWh PCI	1.19	2.29
Natural gas - heating fuel (professional)	€ / MWh PCI	1.19	1.41
Natural gas - heating fuel (households)	€ / MWh PCI	0	1.41
Natural gas - motor fuel	€ / m^3	0	1.49
Heavy fuel oil	€ / 100kg	1.85	2.19
Off road diesel fuel	€ / hl	7.2	8.86

***Source**: Article 32 of « Code des douanes »*

The reform of energy taxation is laying the foundation for a carbon pricing system, but has quite a low impact, at least for the first year, on the energy prices. The initial rate chosen for 2014

[4]The DCT gathers the consumption taxes of different energy products: domestic consumption tax on petroleum products (TIPP), Domestic Tax on Natural Gas Consumption (TICGN), Domestic Tax on Coal (TICC) and Domestic Tax on Electricity (TICFE). The latest is not concerned by the introduction of the carbon component.

[5] The rate for off road diesel fuel increases between 2013 and 2014 although it had already reached the implicit 7€/tCO2 rate in 2013

[6] From 1 April 2014.

seems rather low compared to what is applied by our European neighbors[7]. However, the 2014 Finance Act provides a rise of this rate for the next two years.

B) A system intended to progress

Two successive increases of 7.5 euros will make the rate reaching 14.5€/tCO_2 in 2015 and 22 €/tCO_2 in 2016, exceeding the 20€/tCO_2 recommended by the European Commission to reform the common taxation of energy, which applies to all fuels. The price signal for CO_2 producers will even be higher than the nominal value of the carbon component, as the VAT is calculated on the price of energy, including taxes (table 2).

Table 2: Evolution of the rate of carbon taxation for 2014-2016

	2014	2015	2016
Carbon component € /tCO_2	7	14.5	22
Carbon component , VAT included, € /tCO_2	8.4	17.3	26.3

***Source**: «l'exposé des motifs de l'article 32 de la Loi de finances 2014 »*

The carbon tax will result in modest but significant increases of taxes on energy projects (table 3).

Table 3: Annual increase of the DCT by source of energy between 2014 and 2016

		Carbon component			Carbon component + additionnal VAT		
		2014	2015	2016	2014	2015	2016
Petrol	*Cents € / L*	0.00	1.72	1.71	0.00	2.06	2.05
Diesel	*Cents € / L*	0.00	1.98	1.99	0.00	2.37	2.38
Off road diesel fuel	*Cents € / L*	1.66	1.98	1.99	1.99	2.37	2.38
Domestic fuel oil	*Cents € / L*	0.00	1.98	1.99	0.00	2.37	2.38
Heavy fuel oil	*Cents € / kg*	0.34	2.34	2.35	0.41	2.80	2.81
LPG	*Cents € / kg*	0.00	2.24	2.24	0.00	2.68	2.68
Natural gas - heating fuel (professional)	*€/MWh PCI*	0.22	1.52	1.52	0.26	1.82	1.82
Natural gas - heating fuel (household)	*€/MWh PCI*	1.41	1.52	1.52	1.69	1.82	1.82
Natural gas (motor fuel)	*Centis € / m^3*	1.49	1.60	1.60	1.78	1.91	1.91
Coal	*€/MWh PCI*	1.10	2.46	2.46	1.32	2.94	2.94

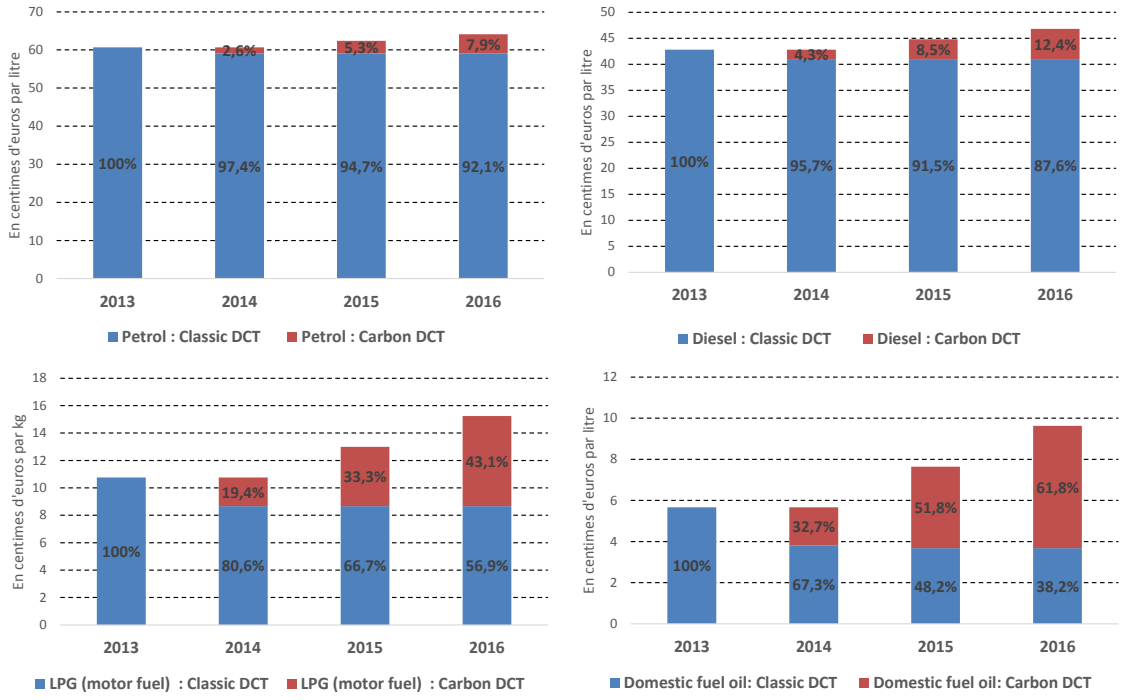
***Source**: Article 265 of «Code des douanes ».*

[7]As an illustration, the initial rates applied at the time the tax was first introduced was 23€/tCO_2 in Sweden (€118 /tCO_2 in 2012), 13€/tCO_2 in Denmark (24€/tCO_2 in 2012), €43 €/tCO_2 in Norway (43€/tCO_2 in 2012) and 8€/tCO_2 in Switzerland (24€/tCO_2 in 2012).

As the classical part of the DCT remains stable, these increases of the DCT by a carbon component will lead to a gradual increase in the weight of this duty in the total energy taxation. Thus, one can expect that it will gradually guide actors towards sources of energy that emit less.

As energy products were not taxed in the same way before the introduction of this new regulation, the carbon component will not, correspondingly, represent a same part of the taxation on fuels. Thus, from 2014, the carbon component represents 100% of the DCT applied to natural gas, heavy fuel and coal. For the other energies, this part will be growing in the next years. It should represent 7.9% of the DCT for petrol, 12.4% for diesel, 43.1% for LPG and 61.8% for domestic fuel by 2016 (Figure 1).

Figure 1: Evolution of the weight of carbon component in total DCT



***Source**: Article 265 of « Code des douanes »*

France is therefore moving forward on the path of a general and progressive carbon pricing. However, some players in the economy can escape, partly or entirely, the tax system.

C) The maintenance of certain exemptions

For competitive reasons of the sectors most subject to international competition, overlapping of emission control tools or fragility in certain economic sectors, some activities have received some partial or total exemptions from the carbon component tax addition.

Ardently debated in the bill from 2009, energy intensive installations covered by the EU ETS will not see their DCT rate increase over the period 2014-2016. While it might seem logical to

exempt these companies, which should not be subjected to double carbon price, this exemption still poses the problem of a 'non-uniqueness of the carbon price' in some sectors, and between companies of a same sector, which wouldn't be subjected to the same level of carbon taxation.

If no new exemptions have been decided so far, some partial or total exemptions from the DCT are maintained, particularly on: road haulers, public transport operators, taxi operators, farmers, fluvial transporters of goods, air transport operators for tourism, fishermen, navigators and shippers. Similarly, some tax applications benefit from preferential treatment. This is the case for energy products used for other purposes than fuels and for those used in electricity generation, with the exception of certain cogeneration facilities.

However, some exemptions were canceled in line with the introduction of the Finance Act. Thus, exemptions from the DCT on gas to households, including collective forms, are suppressed. Similarly, a gradual reduction in the DCT has been planned for biofuels, before its complete abolition in 2016. Eventually, though exemptions remain, the basis of the carbon component is wider than that of the 2009 carbon tax proposal.

III- The economic and environmental impacts of the energy taxation reform

A) A gradual and differentiated increase of energy prices

The introduction of this tax reform will lead to a gradual rise in prices of various fuels and oil (as long as energy prices do not decrease in the international markets). In accordance with the principles of carbon taxation, these increases will be differentiated as they will be proportional to the carbon content of different energy products. These changes in the relative prices of energy should encourage different agents to shift to production and consumption behaviors more sober in carbon consumption.

Table 4: tax increases related to % of the average price of fuels in 2013

	2014	2015	2016
Petrol	0.0%	1.3%	2.7%
Diesel	0.0%	1.8%	3.5%
Natural gas - heating fuel (professional)	0.4%	3.0%	5.5%
Natural gas - heating fuel (household)	1.9%	4.5%	7.1%
Heavy fuel oil	0.7%	5.8%	10.9%
Domestic fuel oil	0.0%	2.7%	5.4%
Off-road diesel fuel	2.2%	4.8%	7.4%

***Source**: Datas from Eurostat*

B) The use of revenues on ongoing arbitration

If the tax return of the reform is likely to be very moderate for the year 2014, given that the conventional DCT will reduce for some energy products during this year of transition, they should be significant in the years 2015 and 2016. According to calculations from the French Ministry of Finance, tax revenues from the carbon component should be 340 million Euros in the first year, of 2.5 billion Euros the next year and reach 4 billion Euros by 2016.

Of these revenues, 3 billion Euros will be redistributed to companies through the financing of the *CICE*. Potential compensations for households (targeted or not) or green investments financing are still in arbitration.

C) A moderate impact on emissions

If the impact of the carbon taxation system cannot yet be accurately measured, it is still possible to produce preliminary estimates using the price elasticity of the fuel demand observed in the past[8]. Applying them to the introduction of the carbon component in the base of the DCT, we obtain the following results in table 5.

Table 5: Estimated emission reductions of CO_2 associated with the carbon component of the DCT in hundreds of thousands of tons

Emissions	2014 Réduction		2015 Réduction		2016 Réduction	
Elasticity	Short term	Long term	Short term	Long term	Short term	Long term
Petrol	0	0	76	228	151	454
Diesel	0	0	468	1403	938	2813
Natural gas (professional)	39	118	310	930	581	1743
Natural gas (household)	237	712	555	1665	873	2618
Heavy fuel oil	4	13	34	101	63	190
Domestic fuel oil	0	0	160	481	321	964
Off-road diesel fuel	71	213	156	467	241	722
Total CO2	**352**	**1055**	**1758**	**5274**	**3168**	**9504**

***Source**: « rapport sur l'industrie pétrolière et gazière de 2013 » (MEDDE)*

Not surprisingly, emission reductions are negligible in 2014 but become significant from the following year. They should be between 1 and 5 $MtCO_2$ in 2015 and 3 to 9 $MtCO_2$ in 2016[9]. Because of the structure of the French energy consumption, more than a quarter of emission reductions would be attributed to a decline in diesel consumption, while 45% would result from a reduction in the consumption of natural gas and 10% from a decrease of domestic fuel consumption.

[8] We took here a 0.25 value for short term elasticity and 0.75 for long term elasticity.

[9] These estimations are higher than those calculated by the government services in « le rapport d'évaluation préalable des articles du projet de loi de finance 2014 » which predict a $3MtCO_2$ emission reductions in 2017.

The environmental effectiveness of the measure will depend on the future trajectory of the rate of carbon pricing, and on its readability over time. It should be noted that although enshrined in the 2014 Finance Act, the tax levels for 2015 and 2016 could still be subject to change. It therefore appears that the relevance and effectiveness of this new tool will be linked to the ability of the political power to maintain an ambitious pace in terms of environmental policy in a difficult economic context.