

## Introducing the carbon tax in France and making it work!

Following the consultations held last July, former French Prime Minister Michel Rocard submitted a report to the government recommending a carbon tax be imposed on all CO<sub>2</sub> emissions from energy sources not covered by the European Union Emissions Trading Scheme (EU ETS). The tax, as proposed, would cover emissions in the construction, transportation, and agriculture sectors, as well as small industrial companies. The government is now getting down to working out the practical details of how the tax will operate. How has it done so far?

By including the carbon tax in the initial *2010 Finance Law*, France is adopting one of the first recommendations made by the Rocard Review: act quickly. And this was not an obvious decision to take in these difficult times – one good mark!

We now know the tax rate envisaged by the government: 14 € per tonne of CO<sub>2</sub>. This is slightly less than the price seen on the European market in recent weeks but, more importantly, less than half the recommended 32 € per tonne of CO<sub>2</sub> of the Rocard Review. One bad mark?

The question of the level of the carbon tax was not thoroughly investigated in the Rocard Review. It was built on the results of the Quinet Review on the carbon “shadow price”, i.e. the theoretical price of carbon compatible with the long-term strategy known as “Factor Four” which aims to reduce France’s emissions by 75% by 2050. The result was 32 € in 2010 and 100 € in 2030. But is it desirable to introduce two carbon prices into the economy, one for large industrial emitters, set by the EU ETS, and one for “other” carbon emitters, determined by the carbon tax? This may threaten economic efficiency compared to a single carbon price situation. In practice, this could cause problems in sectors where large industrial plants subject to EU ETS co-exist with small installations which will soon be liable to the carbon tax. It therefore makes sense to start with a tax which is set at a level that takes the market price into consideration. We must also ensure that the two systems send the clear message of a price increase over time. Many remains to be clarified: rather than giving it a bad mark, at this stage let’s just say: “could do better”.

The third test will be decisive: this concerns the decisions regarding the tax base. If no exemptions are made, the tax base considered in the Rocard Review will include nearly all energy-related emissions not covered by the EU ETS (see *Graph of the Month*). To be both effective and acceptable, the money raised by the carbon tax must be returned to the financial contributors, but never in the guise of exemptions that remove the incentive to reduce emissions. The decisions announced thus far are still vague, at least with respect to households, and suggest that we can expect a rather complicated system. Can the Government resist all the pressures brought by the entities most affected (or claiming to be affected) by the tax to obtain exemptions? We will find out at the end of the year in the details of the *Finance Law* after it appears in the official government register.

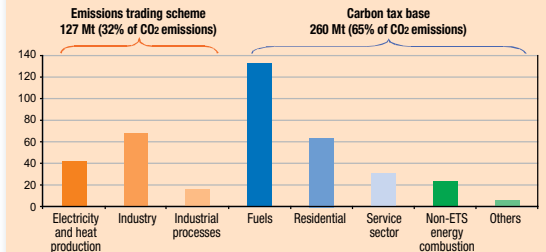
Some may regret that this expansion of an emissions price-signal was not brought about by an enlargement of the EU ETS: clearly Europe was not ready. Others will consider the opening price as being too low. They will be wrong if the Government successfully passes the tax base test – it is better to levy a tax on a wide base at a moderate rate that is acceptable to the taxpayers than charge a high rate and increase the number of exemptions.

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Readers will be able to find more detailed coverage in *Le débat sur la taxe carbone, les économistes au chevet du climat*, in the next edition of *Futuribles* (No.635).

### Graph of the month:

Carbon tax and emissions trading scheme bases (2007)



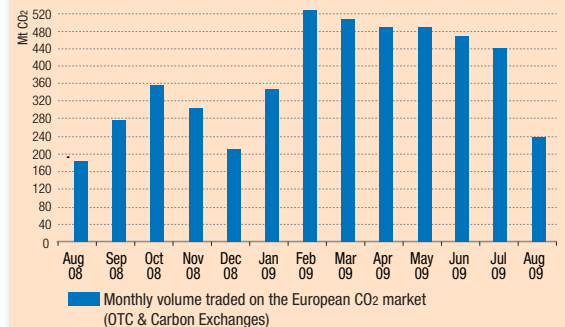
The potential carbon tax base is derived from all CO<sub>2</sub> emissions arising from the use of fossil fuels by entities that are not subject to EU ETS. Emissions of methane and nitrous oxide, mainly from agriculture sources, are not included. If there are no tax exemptions, the carbon tax and the EU ETS would together cover 97% of CO<sub>2</sub> emissions from energy sources in France.

Source: Rocard Review

### Monthly volumes:

Trading volumes, at 236 Mt, fell for the sixth consecutive month in August.

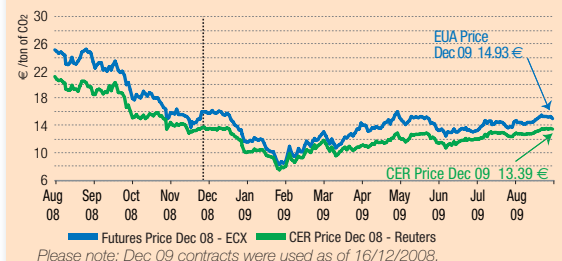
Source: PointCarbon



### Carbon prices:

Continued to rise amid signs of economic recovery.

Source: ECX, Reuters



Please note: Dec 09 contracts were used as of 16/12/2008.

### EUA – CER price spreads:

Fluctuated within a tight range.

Source: ECX, Reuters



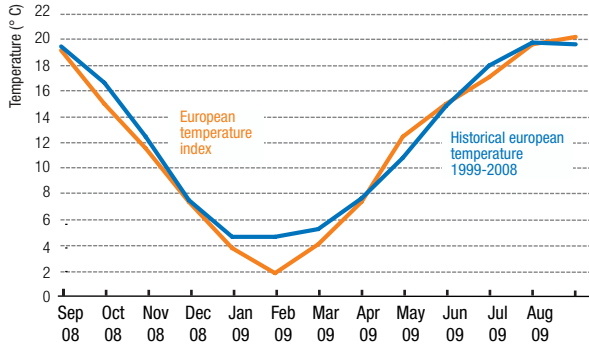
Please note: Dec 09 contracts were used as of 16/12/2008.

## Temperatures (°C)

- Average of BlueNext Weather indices\* – France, Germany, UK and Spain – weighted by the allowances allocated to each country.

	July	August
Monthly average (°C) - 2009	19.6	20.3
Monthly average (°C) - 1999-2008	19.8	19.6
Monthly minimum (°C) - 2009	16.4	16.5
Monthly maximum (°C) - 2009	23.2	24.1

Source: Mission Climat – Caisse des Dépôts based on data provided by Météo-France and BlueNext



The European temperature index rose slightly above its ten-year average in August (20.3°C vs. 19.6°C). With the exception of the United Kingdom which had three consecutive months of below average temperatures, Spain, France and Germany all experienced warmer-than-average July and August. Precipitation levels varied across Europe in August. It was wet in Oslo, with 130 mm of precipitation (34 mm above its ten-year average) while Lyon, Vienna, Turin and Madrid all experienced a drier August (52 mm, 15 mm, 9 mm and 4 mm below their ten-year averages respectively). Reservoir levels in Spain and the Nordic countries have remained below their ten-year-averages since September 2008, with a minor exception in Spain in February 2009.

\* The BlueNext Weather indices are defined on the basis of average temperatures, weighted by the population of the representative regions making up each country.

## Precipitation (mm)

- Average of precipitation indices for Lyon, Oslo, Turin, Vienna and Madrid, weighted by the hydroelectric share in each country's electric power mix.

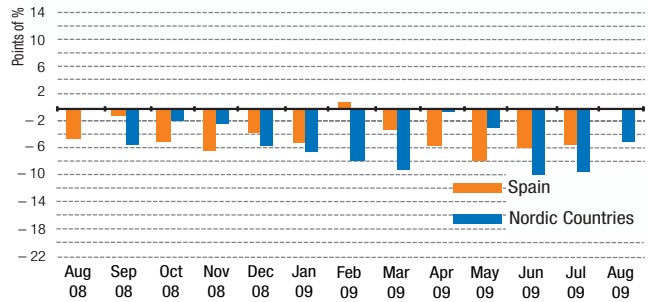
	July	August
Monthly precipitation - 2009	92.6	71.9
Monthly precipitation - 1999-2008	66.4	74.4
Cumulative over 12 months	637.4	578.5
Cumulative over 12 months - 1999-2008	565.5	491.2

Source: Mission Climat – Caisse des Dépôts based on data provided by Météo-France

## Reservoir Content for Electricity Production

- Spread between the monthly rate of reservoir levels (%) and the ten-year average rate (%).

N.B.: The level of Spanish reservoirs for electricity production was not available for August 2009.



## Production Indices

EU27 (base year 2000)	June 2009	Monthly variation (%)	Variation/12 months (%)
Indust. prod. (excl. construction)	89.8	-0.3%	-15.8%
EU ETS sectors production*	87.0	-0.5%	-12.6%
Power, gas and heat	91.2	0.0%	-7.5%
Cement	73.9	-5.0%	-19.7%
Iron and steel	71.6	0.4%	-33.8%
Refineries	93.5	-1.8%	-8.9%
Paper and pulp	91.1	0.0%	-11.6%
Glass	82.1	0.9%	-15.5%
Ceramics	73.8	3.0%	-28.9%
Metal ore	95.4	13.0%	-9.3%

\* Index weighted by EU ETS sectors' weight in average total allocation over 2005-2007.

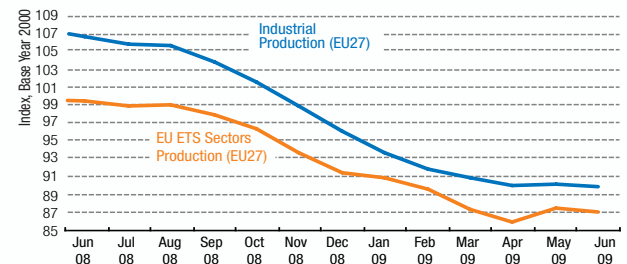
Source: Eurostat

## Opinion of Business Leaders

EU 27	June 2009	July 2009	August 2009
Industrial Confidence Indicator	-33	-30	-26

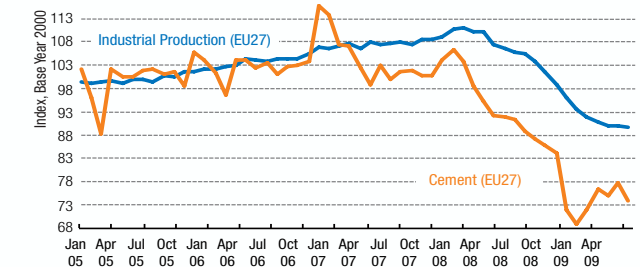
Source: European Commission

## Total Production and Production by EU ETS Sectors



Note: Production indexes reflect recent adjustments made by Eurostat

## Sectoral Focus: Cement (since January 2005)

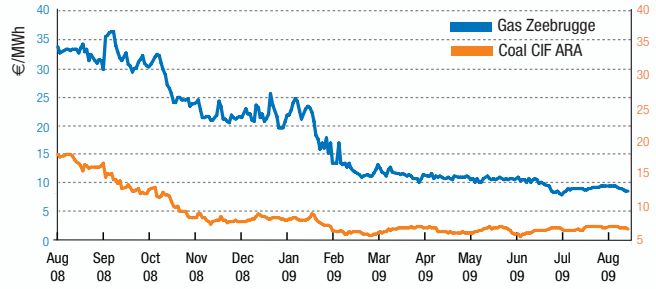


Energy Prices

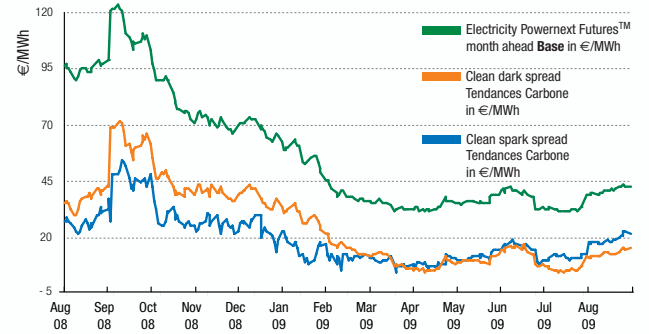
	July 2009	August 2009	
Average closing price			
Brent, in \$/barrel	65.75 \$/B	73.06 \$/B	
Natural gas Zeebrugge month ahead	2.71 €/MMBTU	2.69 €/MMBTU	
Amsterdam coal CIF ARA month ahead	48.03 €/t	51.21 €/t	
Powernext Futures™ month ahead	Base	31.68 €/MWh	40.14 €/MWh
	Peak	43.18 €/MWh	52.08 €/MWh
BlueNext spot price	13.75 €/t	14.61 €/t	
Clean spark spread	10.13 €/MWh	17.72 €/MWh	
Clean dark spread	5.18 €/MWh	11.92 €/MWh	
CO2 switch price coal/gas	4.12 €/t	1.98 €/t	

Source: Reuters, BlueNext, PowerNext, Mission Climat - Caisse des Dépôts

Primary energy prices

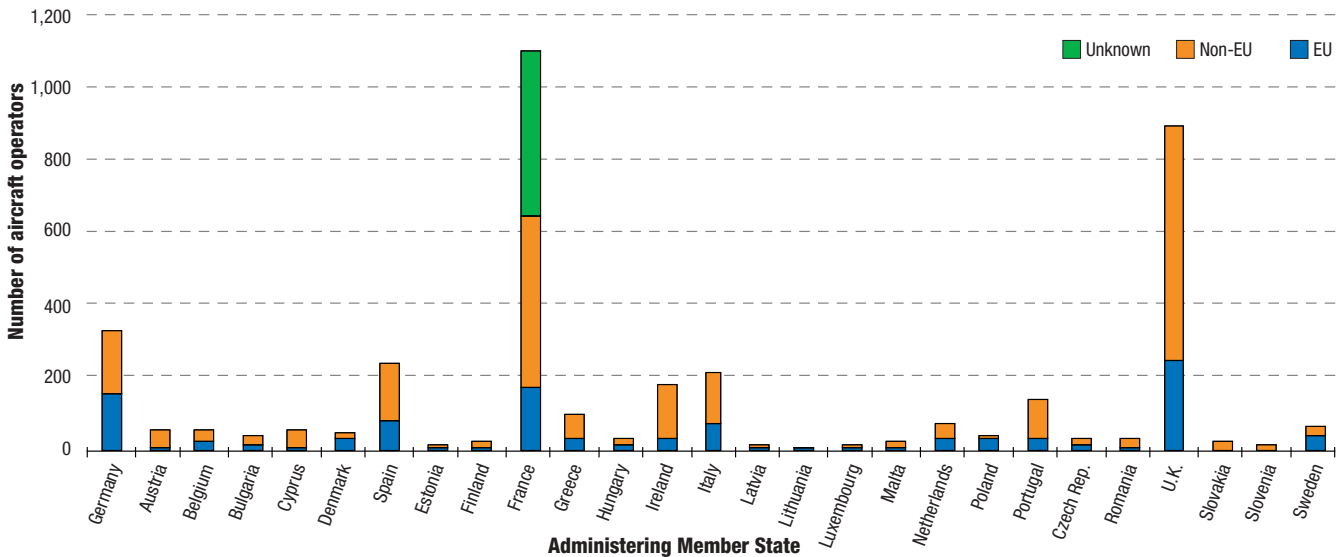


Price of electricity and price difference between electricity and primary energy prices



Positive macroeconomic news and OECD's recent forecast of an earlier recovery for the eurozone and the US propelled equity and energy prices upward. Oil prices rose 11% and coal 8% in August. Even gas prices might have stabilised, falling a mere 0.1% after a 14% decline in July. With the drop in gas prices and the rise in coal prices, the CO2 switch price has been on the decline. It fell from 11.60 €/t in May 2009 to 1.98 €/t in August 2009. This would normally provide an incentive for power producers to switch from coal to gas which is less carbon intensive. However, as electricity and coal prices show no correlation with the relative fuel prices, it would suggest that the slack capacity left for coal to gas switching has been more or less exhausted. If so, a further decline in gas prices or rise in coal prices would have limited impact on the near term carbon prices.

Assignment of aircraft operators to administering EU Member States



Note: Some aircraft operators, either do not exist any more or are too small, will not be included in the EU ETS.

Source: Mission Climat, from The European Commission data

The European Commission's general consultations regarding the terms and conditions for the third phase allowance auctions ended on August 3<sup>rd</sup> 2009. In total, there were 136 responses. The Commission will consider them when preparing the regulations that will take effect after 2012. The first version will be presented to the Member States at the end of the year, and adopted before the end of June 2010.

Due to fraudulent practices involving VAT, several countries have removed (France, UK) or plan to remove (Spain) the VAT on CO2 trading. The Netherlands shifted the obligation to pay from the seller to the buyer, also known as "reverse-charge mechanism". The Commission seems to be in favour of applying this measure on an experimental basis. In the long term, the Commission proposed the establishment of "Eurofisc", a mechanism to strengthen cooperation among European tax authorities. On 5<sup>th</sup> August 2009, the Commission published a list of over 3,800 airlines operating within the EU whose carbon emissions will be capped starting in 2012. Their historical emissions should be made public by this autumn.

# Dashboard

## European Union Emissions Trading Scheme

		Aug-08	Sep-08	Oct-08	Nov-08	Dec-08	Jan-09	Feb-09	Mar-09	Apr-09	May-09	Jun-09	Jul-09	Aug-09
Spot Market (BlueNext)	Phase II Average closing price in €	23.29	23.73	20.91	17.02	14.96	12.68	9.46	11.23	12.92	14.51	13.25	13.75	14.61
	Total monthly volume in kt	17,062	28,435	27,605	67,905	87,597	124,078	225,873	82,113	116,182	187,769	85,982	90,411	27,557
Futures Market (ECX)	Dec. 2008/Dec. 2009 Average closing price in €	23.52	23.95	21.07	17.07	14.86	13.19	9.71	11.57	13.31	14.86	13.49	13.91	14.72
	Dec. 2012 Average closing price in €	28.02	28.17	24.39	19.99	17.79	14.82	11.17	13.98	15.57	17.22	15.66	16.23	16.89
	Total monthly volume in kt	136,898	182,974	324,942	208,239	120,891	200,275	306,566	400,652	374,589	312,783	339,388	317,834	203,685
Total European market volume in kt (PointCarbon)		181,812	276,524	355,007	303,597	209,082	345,770	526,222	506,996	489,474	489,180	469,291	441,631	236,398

Source: BlueNext, ECX, Point Carbon

## International Kyoto Credit Market

		Aug-08	Sep-08	Oct-08	Nov-08	Dec-08	Jan-09	Feb-09	Mar-09	Apr-09	May-09	Jun-09	Jul-09	Aug-09
Spot Market (BlueNext)	Average Closing Price in €	20.15	19.64	17.92	15.02	13.46	11.67	9.11	10.59	11.02	12.23	11.61	12.45	12.99
	Total monthly volume in kt	216	880	842	1,146	2,511	4,084	2,764	1,936	5,264	3,357	1,881	3,164	1,870
Futures Markets	Average Closing Price in €	19.75	19.69	17.89	14.84	13.46	11.43	8.86	10.45	10.97	12.24	11.61	12.43	12.99
	Total monthly volume in kt	45,239	52,223	44,978	87,324	36,511	37,921	69,135	44,384	58,649	41,038	43,633	81,959	45,097

Source: Reuters, LEBA, NordPool, Nymex and ECX

## Weather

Temperatures (°C)		Aug-08	Sep-08	Oct-08	Nov-08	Dec-08	Jan-09	Feb-09	Mar-09	Apr-09	May-09	Jun-09	Jul-09	Aug-09
Germany - difference monthly and decennial average		-0.2	-1.3	-0.3	0.5	-0.2	-3.3	-1.7	-0.1	3.2	0.5	-1.3	0.5	0.9
Spain - difference monthly and decennial average		0.3	-0.6	-1.2	-1.6	-1.1	-0.9	-0.8	-0.4	-0.9	1.0	0.7	0.7	1.1
France - difference monthly and decennial average		-0.9	-1.6	-1.3	0.2	-1.2	-2.6	-1.4	-0.6	1.2	0.7	-0.6	0.3	1.0
UK - difference monthly and decennial average		-1.1	-1.6	-1.6	-0.4	-1.3	-2.2	-1.5	0.0	0.7	-0.2	-0.4	-0.9	-0.5

Source: BlueNext

Precipitation (mm)		Aug-08	Sep-08	Oct-08	Nov-08	Dec-08	Jan-09	Feb-09	Mar-09	Apr-09	May-09	Jun-09	Jul-09	Aug-09
Vienna - difference monthly and decennial precipitation		-11.4	-5.0	-14.2	6.3	3.8	2.1	7.3	30.6	-34.8	-3.7	118.5	35.5	-15.3
Madrid - difference monthly and decennial precipitation		-11.9	68.8	62.4	-42.2	5.6	-0.8	8.9	-23.2	-21.9	-12.4	-3.3	-4.5	-3.5
Lyon - difference monthly and decennial precipitation		-2.3	87.8	-14.6	-43.4	-17.5	-8.2	76.7	-27.5	-42.9	-39.3	11.1	-21.7	-51.7
Oslo - difference monthly and decennial precipitation		19.5	-27.8	28.0	-29.6	-12.1	14.3	11.5	6.1	-16.7	-22.1	-42.6	76.9	34.4
Torino - difference monthly and decennial precipitation		20.9	211.5	-43.3	80.2	158.3	5.2	20.9	94.5	149.7	-39.2	25.9	-13.6	-9.0
Hydraulic Reservoirs – Spread between the monthly rate of reservoir capacity and the decennial average rate.														
Spain		0.0	-1.3	-5.0	-6.2	-3.6	-6.4	-0.6	-1.8	-3.4	-5.1	-5.1	-5.3	NA
Nordic countries		0.3	-5.4	-1.8	-2.3	-5.6	-6.5	-7.8	-9.2	-0.5	-2.9	-9.7	-9.3	-5.0

Source: Météo-France, NordPool, www.mamr.es

## Economic activity

		Aug-08	Sep-08	Oct-08	Nov-08	Dec-08	Jan-09	Feb-09	Mar-09	Apr-09	May-09	Jun-09	Jul-09	Aug-09
Total industry production index (excluding construction and seasonally adjusted), base = 2000														
Europe 27		105.64	103.9	101.63	98.91	96.08	93.69	91.79	90.75	90.00	90.02	89.75	-	-

Source: Eurostat

## Energy prices

		Aug-08	Sep-08	Oct-08	Nov-08	Dec-08	Jan-09	Feb-09	Mar-09	Apr-09	May-09	Jun-09	Jul-09	Aug-09
Brent crude oil, 1 <sup>st</sup> maturity, in \$/baril		114.96	100.84	73.68	54.75	43.51	45.71	43.87	47.39	51.39	58.59	69.29	65.75	73.06
Natural gas Zeebrugge, 1 <sup>st</sup> maturity date, in €/MMBTU		7.58	9.45	9.39	7.67	6.36	6.36	5.46	3.55	3.33	3.18	3.15	2.71	2.69
Coal CIF ARA, 1 <sup>st</sup> maturity date, in €/tonne		126.26	122.99	97.00	74.10	59.10	61.16	61.53	44.97	50.31	45.63	47.64	48.03	51.21
Powernext Futures™ month ahead, in €/MWh	Base	78.04	94.41	109.40	79.06	70.04	62.75	47.00	35.51	31.70	34.98	39.07	31.68	40.14
	Peak	102.84	123.09	150.17	102.66	91.00	81.16	58.59	43.68	41.70	47.25	52.24	43.18	52.08
Difference in prices of electricity and of natural gas, corrected for the price of CO <sub>2</sub> : Clean Spark spread in €/MWh		21.53	26.72	42.87	26.16	25.19	19.31	10.76	9.74	6.44	9.80	14.47	10.13	17.72
Difference in prices of electricity and of coal, corrected for the price of CO <sub>2</sub> : Clean Dark spread in €/MWh		19.21	36.53	60.98	41.76	39.15	33.55	21.80	12.11	5.22	8.50	12.92	5.18	11.92
CO <sub>2</sub> switch price coal/gas in €/tonne		16.26	42.18	58.46	50.21	43.23	42.66	33.82	16.55	10.58	11.60	9.92	4.12	1.98

Source: Reuters, Powernext, Mission Climat – Caisse des Dépôts

A methodological note can be downloaded: [www.caisseledesdepots.fr/missionclimat](http://www.caisseledesdepots.fr/missionclimat)



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