

The ETS: a residual market for carbon abatement in need of a structural reform

The EU ETS has moved from centerstage to the backseat of European decarbonization policy. Reform is needed in order to provide clarity on the long term emission reduction objectives (for phase 4 beyond 2020), but most importantly, to introduce some form of allowance supply management and thereby reduce the risk of future policy intervention.

Following the deterioration of the European macroeconomic outlook in the summer 2011, carbon prices have declined to levels below 10 €/tCO₂. This initiated a political debate on whether the ETS should be reformed to bring carbon prices back into a higher range that would be more supportive of the European decarbonization agenda.

Let us first put things straight. The ETS market is working well and the current low carbon price simply reveals that the weak economic outlook and recent energy market developments have reduced the cost of complying with the predefined emission caps. If policy makers want to see a higher carbon price, they should commit to a more stringent cap for phase 4. But some argue that this would not be sufficient, given the lack of credibility of long term policy engagements and the short time horizon of many market participants. Hence the idea of an immediate tightening of the market through a set aside of allowances in phase 3 as part of the ongoing discussions on a new Energy Efficiency Directive.

These arguments which are used to justify immediate ad hoc policy intervention are dangerous as they mix different issues. If policy makers intervene on an ad hoc basis to tighten the ETS market when prices are judged too low, aren't they likely to intervene again in the future if prices are judged too high? Such interventions would further undermine the credibility of the ETS and of the policy commitments that underpin this market.

What the ETS market needs is a reform that will reduce the likelihood of future policy intervention, not increase it. The key issue is that whilst the supply of allowances (the emission cap) is fixed in advance, the demand in the ETS market is modified by any subsequent change in environmental or energy policies. These policies are determined by national governments without a coordinated approach, and this implies that the ETS market actually compounds policy and regulatory risk associated with these other targeted policies.

In concrete terms, the issue is that the ETS has become a "residual market" for carbon abatement in the power sector. Policies in support of renewables or nuclear have been the prime drivers of power sector investments over the past decade in Europe. Similarly, emissions standards for local pollutants under the Large Combustion Plant Directive will drive more than 30 GW of coal and oil plants to retire by 2015, and will thereby drive indirectly large carbon emission reductions.

How can we then reduce the likelihood of policy interventions to adjust the ETS cap in the future? In a recent research paper, we argue that reform is needed to introduce some form of supply management to adjust the emission cap in a predictable and automatic way to changes in the other policies driving carbon abatement outside of the ETS.

As a first step, member states could for instance be required to estimate the amount of additional or avoided carbon emissions in an impact assessment of any new environmental policy that overlaps with the ETS (e.g. mandatory nuclear plant closures, or change in support for renewables). The ETS cap could then be adjusted accordingly so that the supply-demand balance and therefore price level would not be modified by these broader policy changes. A more ambitious reform could investigate the possibility to delegate to an independent authority the supply management, which could further reduce the possibility of policy interventions in the ETS, but would raise complex questions in terms of implementation and governance.

The European economy needs a properly working carbon market to reach its ambitious decarbonization objectives. A structural reform rather than an ad hoc fix is needed for a long term credible carbon price to emerge.

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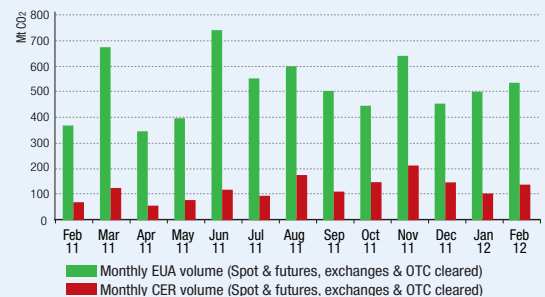
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Key points

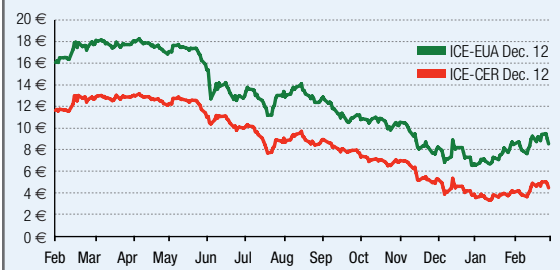
- 1) The carbon price: recovered to €9 per tonne in mid-February, as the result of a cold snap in Europe and of the possible withdrawal of allowances proposed in the Turmes report on the draft Energy Efficiency Directive, which was adopted by the ITRE Committee.
- 2) Inclusion of airlines in the EU Emission Trading Scheme: increasing tension with China, the United States, Russia and India. First EUAA futures transactions on ICE Futures Europe (21 lots).
- 3) Phase III auctions: the tender for the United Kingdom platform has been closed, while the tender for the final German auction platform will be launched in the near future. EEX has won the right to provide the transitory auctioning platform for Germany.

Trading volumes: EUA +7%, CER +33%, and ERU +85%



Source: CDC Climat Research calculation, based on data from BlueNext, EEX, ICE Futures Europe, Green X, Nasdaq OMX, and LCH Clearnet

EUA and CER Dec.12 contract: + 6.5% and + 15.1% respectively



Source: ICE Futures Europe

EUA-CER Dec.12 spread narrowed by 1.7%



Source: ICE Futures Europe

Energy

Primary energy prices and electricity prices

		Feb. 2012	
Coal	API # 2 CIF ARA (First month in USD/t)	99.7 ▼	
Natural gas	NBP (spot in €/MWh)	26.7 ▲	
	TTF (spot in €/MWh)	26.3 ▲	
Crude oil	Brent (First month in USD/b)	119.0 ▲	
Electricity	Germany (€/MWh)	Spot	57.9 ▲
		Calendar	52.7 ▲
	United Kingdom (€/MWh)	Spot	58.0 ▲
		Next summer	52.9 ▲
		Next winter	62.8 ▲

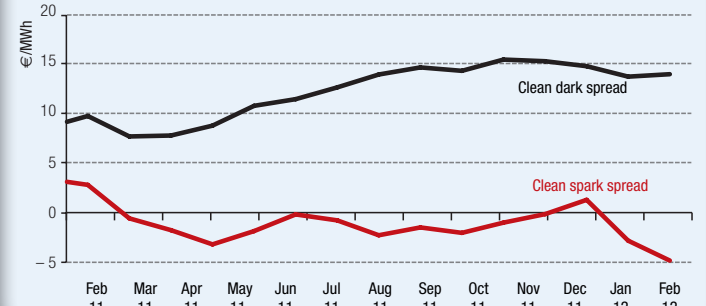
Sources: CDC Climat Research, Thomson Reuters

Clean dark, clean spark spreads and switching price

	Clean spark (€/MWh)		Clean dark (€/MWh)		Switching Price (€/tCO ₂)	
	spot	forward	spot	forward	spot	forward
Germany*	2.1	-4.7	24.0	14.0	28.9	27.1
United Kingdom*	6.1	1.8	23.2	15.9	29.1	22.5

* Germany, 2013 calendar contract, United Kingdom, summer 2012 contract.

German baseload – monthly average of Cal. 2013 clean dark and clean spark spreads



Sources: CDC Climat Research, Thomson Reuters

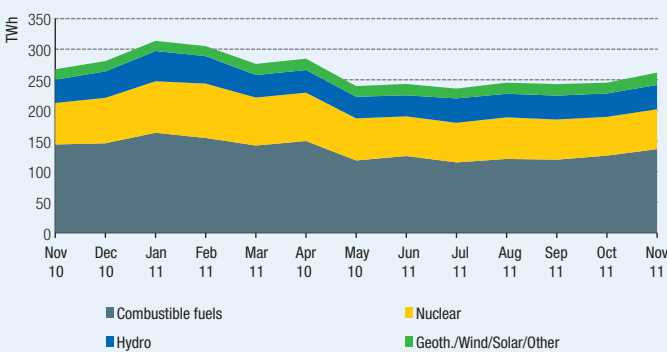
The Brent Crude price rose by 6.7% in February on the back of the Iranian crisis, reaching its highest level since May 2011. When converted into euros, Brent Crude hit a record level of €93.6 per barrel on February 24th, exceeding its July 4th 2008 high. The weakness of demand in the euro zone resulted in a fall in the price of CIF ARA coal (-7.2% for front month, and -2.6% for 2013 deliveries). The cold snap at the beginning of February contributed to a rise in baseload day-ahead electricity prices (+23.7% in Germany and +14.9% in the UK), while contracts for 2013 delivery rose by 2% in Germany and by 4.8% in the United Kingdom. Day-ahead gas prices increased on average (+19.7% for NBP and +20.1% for TTF gas), as did prices for 2013 (+7.3% for NBP and +7.3% for TTF gas). The rise in the price of electricity for 2013 delivery, combined with the fall in the price of coal led to a 1.8% increase in coal-fired power stations' margins in Germany and to a 15.6% increase in the United Kingdom. Meanwhile, the increase in the price of gas reduced the margins of gas-fired power stations in Germany and the United Kingdom by 73% and 45% respectively (excluding transport costs).

Production

Electricity production (TWh)

EU 20 (in TWh)	Nov. 11	Since Jan. 11	Past year (% change)
Production	271.3	2,850.3	-1.8%
of which - Combustible fuels	145.4	1,453.4	-3.3%
- Nuclear	67.8	774.8	-0.5%
- Hydro	40.2	424.0	-8.4%
- Geoth./Wind/Solar/Other	17.8	198.0	25.8%

* Gas, coal, oil.

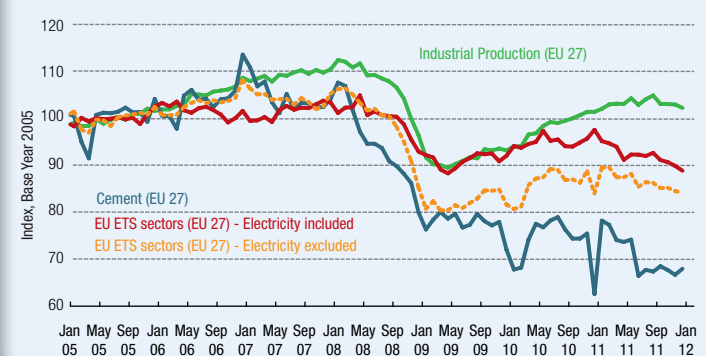


Source: CDC Climat Research, from IEA data

Production indices (Index base year 2005)

EU 27	Déc. 11	Last month (pts)	Year-on-Year (pts)
Indust. Prod (excl. construction)	102.2	-0.7	-0.8
EU ETS sectors production*	88.9	-1.0	-3.6
Electricity, gas and heating	91.3	-1.4	-4.4
Cement	68.0	1.3	-2.2
Metallurgy	90.2	-2.1	-4.4
Oil refinery	91.0	0.0	0

* Index weighted by EU ETS sectors's weight in average total allocation over 2008-2012



Source: CDC Climat Research from Eurostat data

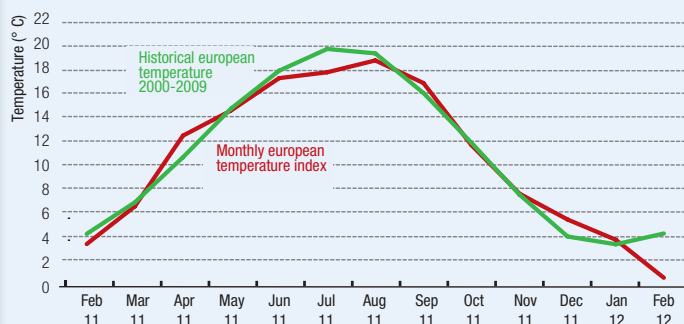
The European Commission announced that GDP in the EU 27 was flat, compared with a contraction of 0.3% in the euro zone countries. Overall, half the countries in the euro zone are expected to be in recession this year. The euro zone PMI (Purchasing Managers' Index) contracted again, falling by around one point compared with the previous month. Meanwhile, the increase in the Brent Crude price is expected to weigh on market operators' buying power. Our EU ETS output index (including electricity generation) was down 3.6 points year-on-year in December 2011. The sector that posted the strongest monthly fall was the ceramic manufacturing industry (-3.7 pts). Aggregate gross European electricity generation amounted to 2,850.3 TWh between January and November 2011, or a 1.8% fall compared with 2010. This fall was accompanied by an increased reliance on renewable energies (+25.8%), and a decline in energy from hydropower (-8.4%), fossil fuel (-3.3%), and nuclear sources (-0.5%).

Temperature impact

European temperature index (°C)

- Average of the MetNext Weather indices for 18 European countries, weighted according to the emission allowances allocated to each country.

	Jan. 12	Feb. 12
Monthly average (°C)	3.7	0.5
Monthly average (°C) 2000-2009	3.3	4.2
Monthly minimum (°C)	-6.0	-10.8
Monthly maximum (°C)	4.0	3.7

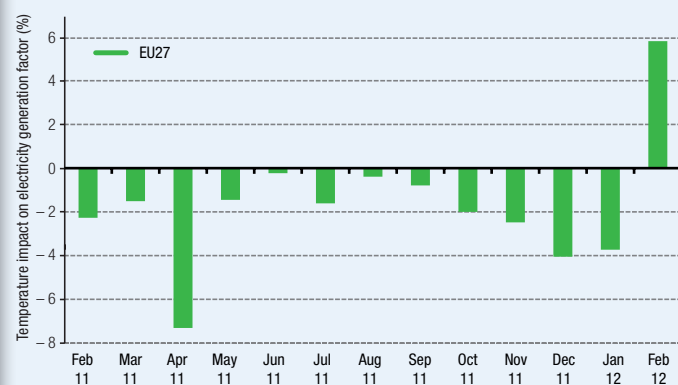


Source: Metnext Weather

Temperature impact on electricity generation factor (%)

- The impact factor, which is calculated on the basis of a statistical electricity generation model, expresses the temperature impact in relation to average weather patterns for the 10 years between 2000 and 2009.

	Jan. 12	Feb. 12
EU 27	-3.7	5.8



Source: Metnext Weather

Europe experienced a severe cold snap at the beginning of February, with the difference between the EU ETS index for monthly and ten-year temperatures reaching 3.7°C. Overall, temperatures were below the ten-year trend in most European countries, especially in Poland (-5.6°C), Hungary (-5.2°C), Spain (-4.9°C), France (-4.4°C), and Slovakia (-4.3°C). Only Ireland enjoyed temperatures that were above the ten-year trend (+1.2°C). According to the MetNext weather and economy model, the impact of the temperatures recorded in February was to increase gross European electricity generation by 6% compared with normal temperature conditions (with increases of 14.1% in France, 12.6% in the Netherlands, and 6.4% in Germany). In February, the low rainfall level in Oslo (-36 mm) lowered water reservoir levels in the Nordic Region, where the gap between the fill levels recorded and the ten-year trend reached 4.4%, i.e. a 2.2 pt fall compared with the previous month.

Institutional environment

EUA supply

	2008	2009	2010
Allowances allocated (kt)	1,950,156	1,967,787	1,984,218
Combustion installation	1,254,227	1,265,113	1,278,989
Cement clinker	209,805	212,571	214,147
Iron and steel	184,454	184,786	184,213
Mineral oil refineries	153,205	153,850	156,964
Pulp, paper and board	37,803	38,740	39,332
Glass	24,864	25,238	25,246
Other activities	22,531	22,508	22,845
Coke ovens	21,928	21,982	21,978
Metal ore	18,215	18,640	18,660
Ceramic products	23,122	24,360	21,845
Allowances auctioned (Mt)	44.00	72.00	85.63

Sources: CTL, UK Debt Management Office, EEX

CER and ERU supply

	Feb. 12	Last month change
Number of CDM projects	9,486	+255
<i>of which - registered</i>	3,871	+59
<i>with - CER issued</i>	1,439	+48
Cumulative volume of CER issued (Mt)	877	+25
CER available until May 2013 - CDC Climat Research estimate (Mt)	1,276*	0
Number of JI projects	554	+3
<i>of which - registered</i>	314	0
Cumulative volume of ERU issued (Mt)	119.2	+0.4
<i>via - Track 1</i>	106.5	+0.3
<i>via - Track 2</i>	12.7	0

* CDC Climat Research's model : <http://www.cdclimat.com/The-risks-of-CDM-projects-how-did-only-30-of-expected-credits-come-through,900.html?lang=fr>

Sources: CDC Climat Research, UNEP, Riseo

The inclusion of airline companies in the EU ETS is a source of increasing tension, especially with China, the United States, Russia and India. The Chinese authorities announced that they were forbidding their companies from taking part in the EU ETS without their prior authorisation. The United States and Russia could adopt a similar position. The Industry, Research, and Energy Commission adopted the report by Claude Turmes (Greens/EFA, LU) on the draft Energy Efficiency Directive on first reading by 51 votes in favour, 6 against, and three abstentions. The text calls on the Commission to present a report on the impact of incentives for investing in low-carbon technologies and on the risk of carbon leakage, by the time the Directive comes into force at the latest. The Deputies are also asking the Commission to consider whether to take measures "which may include withholding of the necessary amount of allowances" by amending the auction rules before the launch of the third phase of the EU ETS.

Carbon markets dashboard

Primary market - EUA auctions (MtCO₂)

Countries		Feb-11	Mar-11	Apr-11	May-11	Jun-11	Jul-11	Aug 11	Sep-11	Oct-11	Nov-11	Dec-11	Jan-12	Feb-12	
United Kingdom	Price (€/t)	14.36	15.59			16.34	13.17		12.31	10.38	9.72	-	-	8.11	
	Volume (Mt)	4.40	4.40			3.50	3.50		3.50	3.50	3.50	-	-	3.50	
Germany	Price (€/t)	Spot	14.66	15.92	16.45	16.62	15.12	12.49	11.94	11.62	10.21	9.69	-	6.90	8.44
		Futures	14.87	16.54	16.92	16.69	15.55	12.63	12.41	11.67	10.35	(n.d.)	-	6.98	8.59
	Volume (Mt)	Spot	1.20	1.50	1.20	1.50	1.50	1.20	1.50	1.20	1.20	3.27	-	1.50	1.20
		Futures	2.28	2.85	2.28	2.28	2.85	2.28	2.45	2.28	2.28	(n.d.)	-	2.58	3.23
Others	Price (€/t)					12.70*	12.13		11.34	10.37	8.55	7.13	7.36	-	
	Volume (Mt)					1.10	2.95		1.75	4.00	3.93	0.85	1.85	-	

Sources: EEX, UK Debt Management Office, Athens Stock Exchange*

Primary market - CER and ERU issued (MtCO₂)

		Feb-11	Mar-11	Apr-11	May-11	Jun-11	Jul-11	Aug 11	Sep-11	Oct-11	Nov-11	Dec-11	Jan-12	Feb-12
Cumulative volume of CER issued UNEP-Risoe (Mt)		553	576	605	624	647	670	708	745	759	783	816	852	877
CER available until May 2013 - CDC Climat Research estimate (Mt)		1,115	1,125	1,130	1,150	1,150	1,175	1,225	1,250	1,300	1,325	1,268*	1,276*	1,276*
Cumulative volume of ERU issued (Mt)	Track 1 (Mt)	24.9	26.8	27.9	28.3	32.2	36.9	43.3	50.3	76.9	95.5	96.8	106.2	106.5
	Track 2 (Mt)	4.7	8.3	8.5	8.6	9.1	9.6	10.0	10.0	10.2	10.2	11.6	12.7	12.7

Sources: UNEP-Risoe, CDC Climat Research

Secondary market - Prices (€/t) and volumes: EUA, CER, ERU (ktCO₂)

		Feb-11	Mar-11	Apr-11	May-11	Jun-11	Jul-11	Aug 11	Sep-11	Oct-11	Nov-11	Dec-11	Jan-12	Feb-12	
Spot market (BlueNext)	Price EUA	14.6	15.7	16.3	16.5	15.2	12.6	12.2	11.7	10.3	9.0	7.4	6.9	8.5	
	Volume EUA	884	7,298	5,464	2,538	4,111	4,498	6,109	4,551	3,003	2,499	2,718	1,908	3,821	
	Price CER	11.6	12.5	13.1	12.8	11.7	10.0	8.7	8.4	7.4	6.6	4.8	3.9	4.5	
	Volume CER	5,117	3,127	2,950	1,483	3,952	1,055	2,921	2,439	2,528	1,256	1,618	1,546	2,640	
	Spread EUA-CER	3.0	3.2	3.2	3.7	3.5	2.6	3.5	3.3	2.9	2.8	2.6	3.0	4.0	
	Price ERU	11.5	12.5	13.0	12.7	11.6	9.9	8.5	8.2	7.2	6.4	4.8	3.7	4.4	
	Volume ERU	141	235	330	0	1	150	0	0	23	10	727	34	60	
Futures Markets (ICE)	Dec. 12	Price EUA	15.5	17.2	17.8	17.6	16.0	13.3	12.9	12.3	10.8	10.0	7.8	7.2	8.7
		Volume EUA	69,670	123,705	70,472	75,281	148,830	108,235	113,470	100,058	115,322	175,003	193,068	345,497	361,138
		Price CER	11.3	12.3	12.9	12.7	11.8	10.3	8.8	8.5	7.4	6.6	4.7	3.8	4.4
		Volume CER	25,014	48,272	15,872	24,143	43,733	30,800	63,087	36,361	55,588	64,442	60,857	64,537	93,161
		Spread EUA-CER	4.2	4.8	4.9	4.9	4.2	3.1	4.0	3.8	3.4	3.4	3.1	3.4	4.3
		Price ERU	11.208	12.23	12.77	12.57	11.74	10.16	8.66	8.3	7.2	6.5	4.6	3.6	4.2
	Dec. 13	Price EUA	16.5	18.4	19.1	18.9	17.2	14.3	13.7	13.2	11.6	10.6	8.4	7.8	9.4
		Volume EUA	26,090	35,657	34,401	34,612	85,200	48,253	59,362	41,790	42,578	63,891	56,595	68,819	87,267
		Price CER	12.2	13.6	14.2	13.9	12.7	11.0	9.8	9.3	8.3	7.4	5.3	4.6	5.2
		Volume CER	1,580	2,297	1,324	5,790	11,906	3,720	25,427	11,936	17,109	64,442	11,176	12,329	17,595
		Spread EUA-CER	4.3	4.7	4.9	5.0	3.9	3.3	3.9	3.8	3.3	3.2	3.1	3.2	4.2
		Price ERU	17.3	19.3	20.3	20.0	18.2	15.2	14.5	13.9	12.3	10.9	8.9	8.3	10.2
	Dec. 14	Volume EUA	3,146	3,968	2,088	6,067	11,778	11,983	19,288	11,405	7,742	23,539	14,738	24,633	17,532
		Price CER	12.5	13.9	14.5	14.2	12.9	11.1	10.1	9.6	8.6	7.4	5.6	4.8	5.4
		Volume CER	725	375	200	1,940	979	5,536	4,110	2,598	2,868	5,075	2,807	1,834	1,587
		Spread EUA-CER	4.8	5.4	5.7	5.9	5.4	4.1	4.4	4.3	3.7	3.4	3.3	3.5	4.8

Sources: BlueNext, ICE Future Europe

Emission-to-cap by EU ETS sector and country: difference between distributed allocations of allowances and verified emissions

	2008	2009	2010		2008	2009	2010	
Combustion	-253,550,053	-113,953,229	-127,220,592	Source: CITL	Germany	-84,222,673	-37,074,525	-53,462,742
Cement clinker	20,182,819	59,906,658	62,985,897		United Kingdom	-52,601,823	-17,273,131	-16,955,792
Iron and steel	51,597,174	90,456,616	70,376,100		Italia	-9,116,362	24,502,770	10,910,263
Mineral oil refineries	-1,831,556	7,400,996	13,486,862		Poland	-3,139,504	10,799,547	5,481,031
Pulp, paper and board	6,559,985	10,878,883	9,424,977		Spain	-9,919,501	13,516,237	28,641,386
Glass	2,328,312	5,898,098	5,311,627		France	5,880,211	18,592,403	16,050,484
Other activities	1,542,298	6,750,301	2,904,448		Czech Republic	5,116,459	13,282,127	12,192,415
Coke ovens	4,264,021	10,949,370	8,912,954		The Netherlands	-6,278,816	2,755,940	480,287
Metal ore	4,931,225	9,583,215	9,678,352		Romania	7,689,008	24,829,146	27,310,537
Ceramic products	273,567	4,300,969	125,808		Others	-17,109,207	38,241,363	25,338,564
Total (t)	-163,702,208	92,171,877	55,986,433		Total (t)	-163,702,208	92,171,877	55,986,433