

EU ETS auctions revenues: few guidelines to improve use for the low-carbon transition financing

Funding will be one of the EU's key challenges in the transition to a low-carbon economic model in the coming decades. In October 2014, the EU Council has endorsed a GHG emissions reduction target of -40% by 2030 compared to 1990. The EU ETS is a potentially important source of financing to achieve this objective. Heads of States at the last EU Council approved two financing mechanisms capitalized using the revenues from the sale of EU ETS allowances (EUAs). These include: a "Modernization fund" of 300 million EUAs for energy efficiency in ten low-income EU States; and an "Innovation fund" of 400 million EUAs -which will extend the NER 300 program- to support the renewable energy and low-carbon innovation in industrial sectors.

Furthermore, EU ETS auction revenues will also be a source of financing for individual Member States who, according to our estimates, will auction close to 15 billion EUAs from 2013 to 2030 (EU ETS phase 3 and 4). Assuming a gradually increasing carbon price, revenues could total between €230 billion to €320 billion¹ from 2015 to 2030. This is roughly equivalent to the energy investment gap (€313 billion between 2014-2035) to shift from the EU New Policies Scenario to an EU 2° scenario².

Analysis of the reported usage of Member States' revenues in 2013 and 2014, based on public information and a survey conducted among Member States, indicates two key issues to deal with to ensuring that this funding is used to effectively support the low-carbon transition. Firstly, the use of auction revenues for climate action is dependent on the sovereign choices of Member States and no specific coordination with the EU Commission is required to justify their national strategies. In its phase 3, Article 10 of the EU ETS directive encourages Member States to use at least 50% of their auction revenue towards climate action. Analysis of current practices reveals that:

- A significant percentage of ETS revenues are used for climate action. However, some major economies - i.e. the UK, Netherlands and Denmark - do not directly earmark ETS revenues for climate action.
- The observed lack of direct earmarking combined with the currently inconsistent EU-level reporting and national communications could limit the transparency on how funds are used.
- When earmarking does occur, funds are principally dedicated to domestic mitigation: primarily for small- and medium-scale projects using mature technologies in the areas of energy efficiency (45%) and renewable energy (42%). A small proportion is spent on climate action in developing countries; and an even smaller share on adaptation efforts.

Secondly, variation in the carbon price in the EU ETS can limit the capacity of Member States to plan as well as to cover multiannual investment commitments. Thus, carbon price visibility - and relative stability - is important for financing decisions.

As their amount should increase by 2030, steps could be taken to ensure that auction revenues continue to effectively finance actions aligned with the low-carbon, climate resilient transition:

- *Improving transparency through a coherent communication:* first, from the EC to Member States to improve visibility on carbon price forecasts and auction allowances volumes; and second, from the Member States to the EC to improve the quality of information on use of revenues. Improved transparency could enhance the broader alignment of future use with the EU 2030 climate and energy goals.
- *Guaranteeing multiannual financing commitments:* A public 'variability insurance' could be provided to States to reduce impacts of carbon price variability on their proceeds. Thus, multi-year programs could be used to support national mitigation strategies.
- *Increasing the leverage effect of public fund on private finance.* For instance, the NER 300 program has funded nearly 38 projects of innovative low-carbon technologies with €2.2 billion from allowance revenues and €2.86 billion from private sources.

Moving forward, European discussions on how to use auction revenues should thus address these three issues to strengthen, efficiently and effectively, their role in funding the EU's low-carbon transition and international commitments. The timing to open this debate is apt as the EU Commission should publish its revised EU ETS Directive proposal before the summer break.

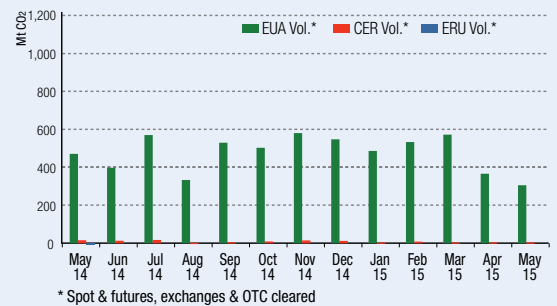
Manasvini Vaidyula and Émilie Alberola
CDC Climat Research

1. CDC Climat Research "The EU ETS by 2030", report forthcoming in September 2015.
2. World Energy Investment Outlook, 2014 IEA

Key points

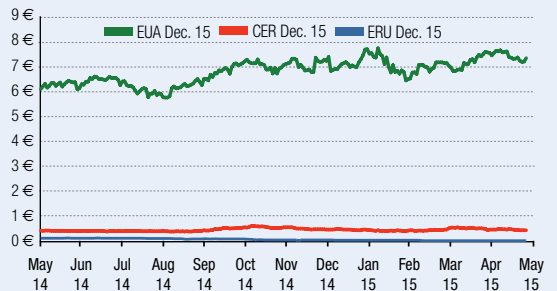
- **EU ETS – MSR negotiations:** On May 26th, the Environment Committee of the EU Parliament approved the consolidated text for the implementation of the MSR as from 2019, and a placement of backloaded as well as unused allowances straight into the reserve. A vote in plenary session is scheduled on 7th July.
- **EU ETS reform:** A vote in EU Parliament is scheduled on 7th July to endorse the MSR. The European Commission should propose measures to tackle carbon leakages issues in the six months following the adoption of the MSR.
- **EU ETS emissions:** Emissions under the EU ETS decreased by 4,5 % in 2014, and reached 1,812 MtCO_{2e}.

Trading volumes: EUA -16.52%, CER -10.08%



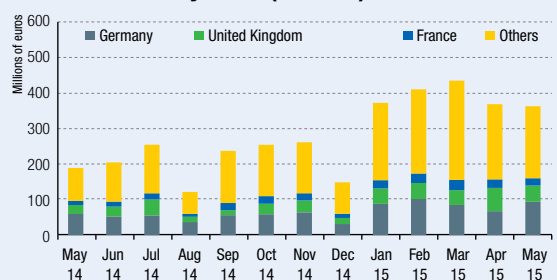
Source: CDC Climat Research calculation, based on data from EEX, ICE Futures Europe, NYMEX, Nasdaq OMX, and LCH Clearnet

Dec 15 contract price: EUA +4.80%



Source: CDC Climat Research, ICE Futures Europe

Monthly proceeds from Phase 3 auctions: 362.8 M€ in May 2015 (-1.52%)



Source: CDC Climat Research based on data from ICE Futures Europe, EEX

Energy

Primary energy prices and electricity prices

		May 2015	
Coal	API # 2 CIF ARA (First month in USD/t)	59.3 ▲	
Natural gas	NBP (spot in €/MWh)	20.8 ▼	
	TTF (spot in €/MWh)	20.5 ▼	
Crude oil	Brent (First month in USD/b)	65.6 ▲	
Electricity	Germany (€/MWh)	Spot	27.5 ▼
		Calendar	31.6 ▼
	United Kingdom (€/MWh)	Spot	57.3 ▼
		Next summer	59.4 ▼
		Next winter	64.0 ▼

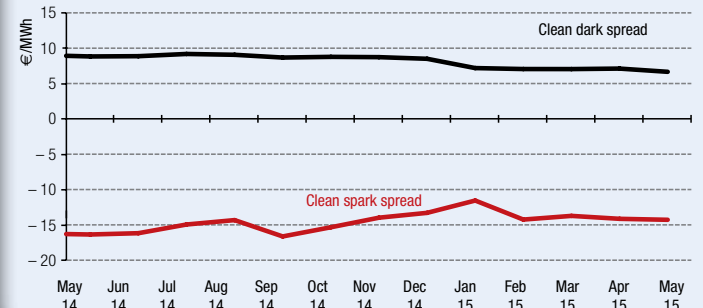
Sources: CDC Climat Research, Thomson Reuters

Clean dark, clean spark spreads and switching price

	Clean spark (€/MWh)		Clean dark (€/MWh)		Switching Price (€/tCO ₂)	
	spot	futures	spot	futures	spot	futures
Germany*	-16.4	-14.3	2.2	6.7	38.9	43.1
United Kingdom*	12.1	13.9	31.4	33.9	39.6	40.8

* Germany, 2016 calendar contract

German baseload – monthly average of Cal. 2015 clean dark and clean spark spreads



Sources: CDC Climat Research, Thomson Reuters

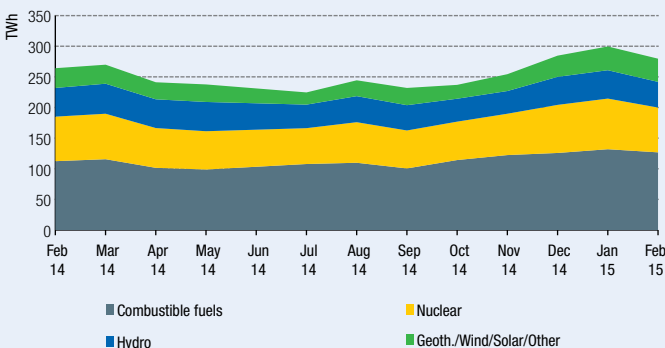
The Brent price continued to rise in early May and then stabilized at around 65 \$/bl. This upward trend is nevertheless taking place in a bearish context, marked by a likely rise of Iranian exports that could reach 1 million barrel per day by the end of the year, a still high OPEC production and a holding US oil output around 9,4 million barrel per day. Coal prices remained relatively low to 59.3 \$/t. Fairly low temperatures and low Norwegian flows had an upward pressure on gas prices: the NBP and TTF spot prices stood at 20.8 €/MWh and 20.5 €/MWh. Power prices in the NWE area reached historically low levels of 27.5 €/MWh on average in the German spot market and the contract for delivery in December 2016 was traded at 31.6 €/MWh. A strong wind and the work up of the “flow based coupling” enabling higher cross-border exchange volumes contributed to the sharp drop in short term maturities. The German clean dark spread decreased to 2.2 €/MWh on the spot markets and to 6.7 €/MWh on the futures market, while the clean spark spread fell on the spot markets and futures markets. The theoretical CO₂ “switch” price was calculated to 38.92 €/tCO₂ in the German spot power market and 39.58 €/tCO₂ in the British spot power market.

Production

Electricity generation (TWh)

EU 20 (in TWh)	Feb. 15	Cumulative from Jan. 15	Year-on-Year (% change)
Production	272.2	571.8	7.1%
of which - Combustible fuels	126.8	258.6	13.5%
- Nuclear	73.2	155.8	6.0%
- Hydro	41.9	88.2	-8.0%
- Geoth./Wind/Solar/Other	37.9	76.6	21.1%

* Gas, coal, oil.

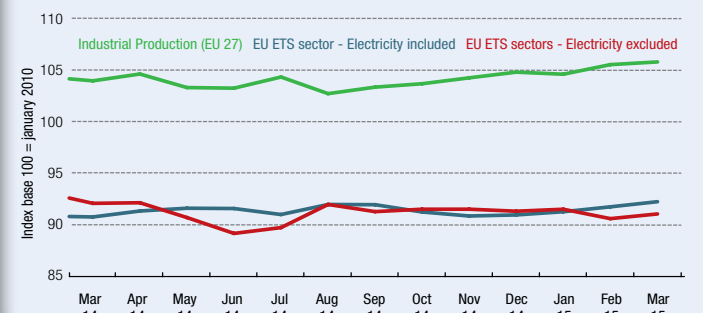


Sources: CDC Climat Research, from IEA data

Production indices (Index base year 2010)

EU 27	Mar. 15	Last month (pts)	Year-on-Year (pts)
Indust. Prod (excl. construction)	105.8	0.3	1.8
EU ETS sectors production* (incl. electricity)	92.2	0.5	1.5
EU ETS sectors production* (excl. electricity)	91.1	0.5	-1.0
Electricity, gas and heating	92.9	0.5	2.8
Cement	74.9	2.4	-4.2
Metallurgy	106.5	4.3	-9.0
Oil refinery	96.3	-1.4	4.0

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

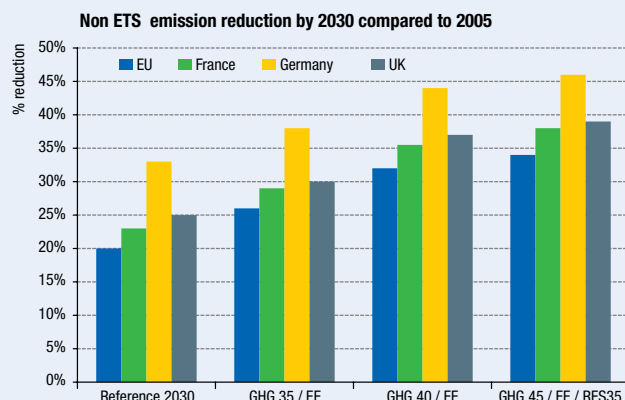
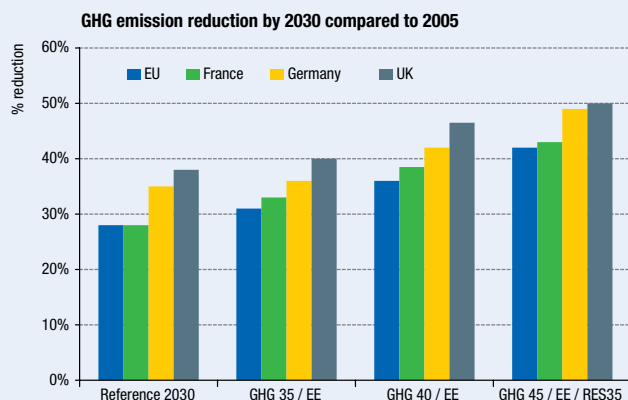


Sources: CDC Climat Research from Eurostat data

Industrial production in the EU-27 countries rose by 0.3% in March 2015 compared to the previous month and by 1.8% compared to March 2014. The 0.3% monthly increase of industrial production is due to increases in production of 2.1% for non-durable consumer goods, while energy and durable consumer goods production decreased by 0.9% and 0.3%. The largest decreases in industrial production were registered in the Netherlands (-3.6%), Lithuania (-3.4%) and Estonia (-1.0%), and the highest increases in Latvia (+10.9%), Denmark (+4.6%), and Ireland (+3.0%). Our production index of EU ETS sectors (including electricity) rose slightly to 92.2 pts, and the index excluding electricity increased to 91.1 pts. Power generation in the 20 EU countries amounted to 272.2 TWh in February 2015, decreasing 9.1% compared to January 2015 and up 2.7% compared to February 2014. Compared to the year 2014, the cumulative production rose 7.1%, the cumulative hydraulic generation declined (-8.0%), while the cumulative generation of renewable energy grew by +20.3% and the cumulative fossil fuel generation by +17.3%.

Coordination of CO₂, EE and RES policies

The EU 2030 emission reduction target: impact on Member States



Note: Reference refers to the scenario with no additional climate and energy policies on the trajectory of the 2020 objectives; GHG 35, 40 et 45 refer to the scenario with a 35%, 40% and 45%, GHG target, RES 35 refers to the scenario with a 35% EU level renewable energy target in the final consumption.

Source: European Commission, Impact Assessment, A policy framework for climate and energy in the period from 2020 up to 2030, 2014.

On April 20th, the EU Commission released a document entitled *Developing a reliable and transparent energy union governance system* fostering a resilient energy union with a forward-looking climate change policy. The proposed governance would include two steps. First, the European Commission will issue tailor-made country profiles outlining for each Member States, the opportunities and challenges. The five Energy Union's dimensions will be examined: security of supply; internal energy market; energy efficiency; decarbonization of economies and research. Leaked documents have been published for Belgium, Germany Latvia and Sweden. Then Member States will submit national plans for "competitive, secure and sustainable energy" to deliver on the objectives of the Energy Union. M.S would have to prepare an integrated national plan, replacing the several existing plans required under current legislation. The EU Commission commissioned a report on the mid-term evaluation of the Renewable Energy Directive (RED). The study took into consideration the effectiveness, the efficiency, the relevance and the added value of national implemented measures. Main conclusions are that RED contributed to the deployment of Renewable energy sources in Europe. However, the effectiveness and efficiency of RED's provisions may vary significantly throughout the EU. In addition, The effectiveness and efficiency of almost all the RED provisions can be enhanced by putting a stable post-2020 policy in place.

Institutional environment

Phase 3 supply balance table

	2013	2014	2015*	2016*	2017*	2018*	2019*	2020*
Auctions (MtCO₂)	804	532	675	779	985	992	1,302	1,633
Free allocation (MtCO₂)	843	767	813	789	765	741	717	693
Total	1,647	1,299	1,488	1,568	1,750	1,733	2,019	2,326

* Estimations

Free allocation status table

EU Member State	2013	2014	2015*
France	82	81	73
Germany	169	163	159
United Kingdom	66	64	56
Others	526	459	246
TOTAL	843	767	535

* Until 31st March

CER and ERU supply

	May 15	Last month change
Number of CDM projects	12,300	+5.0
<i>of which - registered</i>	7,641	+11.0
<i>with - CER issued</i>	2,788	+18.0
Cumulative volume of CER issued (Mt)	1,595	+43.7
Number of JI projects	788	0.0
<i>of which - registered</i>	604	0.0
Cumulative volume of ERU issued (Mt)	864	0.0
<i>via - Track 1</i>	838	0.0
<i>via - Track 2</i>	25	0.0

On May 13th, the Committee of Permanent Representatives in the European Union (COREPER) officially endorsed the informal agreement reached on May 5th, between EU Parliament and EU Council representatives concerning the MSR. The main measures are: 1) The MSR will start on 1st January 2019. 2) Backloaded and unallocated allowances will be placed in the MSR. 4) An innovation fund of 50 million allowances will be considered to promote low-carbon industrial innovation projects. 5) Concerning carbon leakage, the European Commission should propose measures in the six months following the adoption of the MSR. On May 26th, the Environment Committee of the EU Parliament approved the consolidated text reached on May 5th. On May 4th, the EU Commission released the aggregate number of international credits that were exchanged with EUAs by 30th April 2015, amounting to 388.44 million, of which 198,91 million CER and 192,53 million ERU. On May 12th, the EU Commission released the latest update of free allocations by Member States. Italy has the most free allowances amount to allocate still for this year; followed by the UK, Sweden, Spain, France, and Finland. No further updates are expected this year by the European Commission. On May 18th, the EU Commission released the 2014 data on EU ETS emissions. Verified GHG emissions from stationary installations amounted to 1,812 MtCO_{2e} in 2014. These emissions were about 4.5% below the 2013 level.

Sources: CDC Climat Research, European Commission, ICE Futures Europe, EEX

Sources: CDC Climat, UNEP-DTU

Carbon markets dashboard

Primary market - EUA auctions in Phase 3

		May-14	Jun-14	Jul-14	Aug-14	Sep-14	Oct-14	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15	Apr-15	May-15
Common Auction Platform + United Kingdom & Germany	Price (€/t)	5.03	5.54	5.91	6.23	5.96	5.99	6.78	6.74	6.89	7.20	6.72	7.01	7.39
	Volume (Mt)	37.72	37.02	43.28	19.52	39.79	42.05	38.56	22.04	54.06	57.00	64.67	52.55	49.09
Auction Revenues (M€)	Germany	59.46	52.45	55.37	36.75	56.07	58.71	63.97	31.17	88.04	101.65	84.94	67.35	93.96
	United Kingdom	25.35	27.82	44.97	14.93	14.13	29.65	33.78	17.15	43.38	44.97	41.54	65.55	45.63
	France	11.65	14.01	17.35	7.90	20.14	21.35	20.03	11.51	23.14	26.76	28.96	23.96	20.46
	Others	92.56	110.32	136.70	62.03	146.78	144.45	143.52	88.78	217.71	236.84	279.33	211.53	202.74
	Total	189.02	204.60	254.39	121.61	237.13	254.15	261.30	148.61	372.27	410.23	434.77	368.40	362.79

Sources: EEX, ICE Futures Europe

Primary market - CER and ERU issued (MtCO₂)

		May-14	Jun-14	Jul-14	Aug-14	Sep-14	Oct-14	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15	Apr-15	May-15
Cumulative volume of CER issued UNEP-DTU (Mt)		1,457	1,466	1,472	1,480	1,491	1,504	1,512	1,512	1,525.7	1,540.8	1,544.7	1,551.3	1,595
Cumulative volume of ERU issued (Mt)	Track 1 (Mt)	824.1	824	824.1	824.4	824.4	824.4	824.5	824.5	838.1	838.1	838.1	838.1	838.1
	Track 2 (Mt)	25.4	25.4	25.4	25.4	25.4	25.4	25.4	25.4	25.4	25.4	25.4	25.4	25.4

Sources: UNEP-DTU, CDC Climat Research

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

			May-14	Jun-14	Jul-14	Aug-14	Sep-14	Oct-14	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15	Apr-15	May-15
ICE Futures Europe	Daily spot	Price EUA phase 3	5.11	5.52	5.96	6.26	6.01	6.09	6.91	6.97	6.97	7.27	6.80	7.10	7.44
		Volume EUA phase 3	19,271	20,937	11,897	5,173	17,953	5,530	7,793	10,180	9,324	25,327	23,640	23,244	13,768
		Price CER	0.12	0.14	0.16	0.17	0.15	0.13	0.08	0.04	0.46	0.42	0.41	0.49	0.45
		Volume CER	745	167	1,530	1	242	255	319	8,622	860	4,436	3,202	833	161
	Dec.15	Price EUA	5.50	5.80	6.16	6.44	6.16	6.21	7.03	7.15	7.06	7.35	6.85	7.14	7.48
		Volume EUA	467,135	56,911	114,684	64,504	94,922	119,746	140,392	180,590	356,677	377,226	394,219	268,144	200,863
		Price CER	0.23	0.29	0.40	0.40	0.39	0.38	0.52	0.54	0.46	0.42	0.41	0.49	0.45
		Volume CER	15,510	3,454	3,951	1,636	1,535	3,644	3,724	2,654	1,863	2,796	1,408	3,440	3,048
	Dec.16	Price EUA	5.50	6.02	6.35	6.62	6.30	6.34	7.17	7.35	7.17	7.47	6.93	7.22	7.56
		Volume EUA	466,631	33,286	61,189	28,171	47,533	40,921	40,926	39,009	55,893	46,588	50,070	39,148	35,365
		Price CER	0.33	0.29	0.40	0.41	0.39	0.38	0.52	0.54	0.52	0.42	0.40	0.49	0.44
		Volume CER	800	0	0	10	50	850	500	550	500	0	0	200	298
	Dec.17	Price EUA	5.50	6.02	6.35	6.62	6.30	6.34	7.17	7.35	7.34	7.63	7.06	7.34	7.67
		Volume EUA	466,631	33,286	61,189	28,171	47,533	40,921	40,926	39,009	15,087	19,340	28,076	8,049	27,783
		Price CER	0.33	0.29	0.40	0.41	0.39	0.38	0.52	0.54	0.46	0.42	0.40	0.49	0.44
		Volume CER	800	0	0	10	50	850	500	550	0	0	0	0	0

Sources: ICE Futures Europe

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

	2008	2009	2010	2011	2012	2013
Combustion	-253.1	-113.5	-125.8	-76.9	-42.4	-137.8
Oil refining	-1.4	7.6	14.3	16.0	20.2	-36.7
Coking plants	1.5	6.8	2.9	3.1	5.7	-1.5
Metal ores	4.3	11.0	8.8	8.9	9.7	-0.2
Steel production	51.6	89.3	71.4	72.8	73.9	38.5
Cement	20.9	61.4	61.0	62.8	70.3	26.7
Glass	2.5	6.1	5.5	5.4	5.0	-1.2
Ceramic products	5.3	10.0	10.2	9.6	9.2	2.0
Paper	6.9	11.3	10.0	11.1	11.6	4.1
Other activities	0.2	4.3	1.3	-0.7	1.4	-1.0
Total (Mt)	-161.3	94.2	59.8	112.1	164.5	-107.1

Source: CTL

	2008	2009	2010	2011	2012	2013
Germany	-84.0	-36.6	-54.4	-49.5	-28.6	-106.3
United Kingdom	-50.8	-15.0	-16.8	2.5	-2.5	-52.0
Italy	-8.5	24.1	8.5	5.3	12.2	21.5
Poland	-3.1	10.8	5.9	4.2	15.6	-76.4
Spain	-9.6	13.7	29.5	18.4	17.0	31.7
France	5.5	17.5	23.4	33.9	25.2	24.8
Czech Republic	5.2	12.2	10.6	12.2	17.1	-18.3
The Netherlands	-6.8	2.8	0.1	8.9	10.5	-3.0
Romania	7.7	24.9	27.7	23.6	25.8	15.1
Others	-17.0	39.8	25.3	52.7	72.3	55.7
Total (Mt)	-161.3	94.2	59.8	112.1	164.5	-107.1

Source: CTL