

November 2013  
N°85 A newsletter of CDC Climat Research

## Agriculture and forestry: window-dressing in the EU ETS

The EU ETS' stock image shows a huge industrial plant that emits a large amount of greenhouse gas, and gives the impression of an allowance market that does not concern so-called "diffuse" sectors like agriculture and forestry. Like any stock image, it is broadly accurate and partially false.

Firstly, it is partially false for agriculture. Considered as an industry, which includes input producers upstream and the food processing industry downstream, agriculture represents around 870 installations that are subject to allowances, i.e. 8% of the total. However, the size of these installations – plants that produce fertilisers, plant health products, starch and sugar refineries, etc. – is relatively small: on average, they emit 35,000 tCO<sub>2</sub>eq per year, ranging from less than 2,000 tCO<sub>2</sub>eq for knacker's yards to 140,000 tCO<sub>2</sub>eq for plants that produce nitrogen-based fertilisers.

Like all sectors, excluding power generation, the farming and food processing industries ended the period between 2008 and 2012 with a significant allowance surplus, which amounted to 21% of their allocation. However, the reason for this surplus is different from other industries, as these industries' output level has remained stable since 2007, although output in the other industrial sectors has contracted by an average of 25%. The 7% fall in emissions recorded in the farming and food-processing industries over the period between 2005 and 2007 actually corresponds to a genuine improvement in the carbon intensity of their products, primarily due to the introduction of new fertiliser manufacturing processes. As is the case of the other sectors, part of the surplus is also due to a generous allocation that will not be repeated over the period between 2013 and 2020. A full report on these industries has been drawn up by Foucherot and Bellassen (2013).<sup>1</sup>

Secondly, it is partially false for the forestry and wood products sector. Firstly because over 900 paper manufacturing plants are covered by the EU ETS, but more importantly because the emission factor for biomass and therefore wood has been set at zero within the EU ETS. This means that the EU ETS provides a strong incentive to burn wood instead of coal. This incentive is made even stronger by the fact that substituting wood for coal does not require the burner to be adapted, at least up to the point where the amount of biomass is equal to the amount of coal.

The contribution of the forestry and wood products industry to mitigating climate change is therefore indirectly but tightly controlled by the EU ETS, and more generally by the Climate & Energy Package. Biomass already accounts for 10% of the power generated in Europe. It is central to the Member States' strategy to comply with the European directive that sets renewable energy targets, which involves a doubling of biomass consumption – 70% of which comes from forests – to generate power. In fact, Baron *et al.* (2013)<sup>2</sup> have produced an overview of European policies that directly or indirectly affect the sector's contribution to mitigating climate change. The overview concludes that these policies are consistent in encouraging the use of biomass from forests for power generation purposes.

Contrary to popular belief, the agriculture and forestry sectors are hence already involved in the EU ETS, and more broadly in the Climate & Energy Package. This is due partly to the fact that the upstream and downstream areas of these industries are already covered by these policies, and partly to the fact that the Climate & Energy Package creates strong demand for biomass, which is produced by both sectors. Does this mean that they ought to play a more explicit role in the 2030 Climate & Energy Package? At the very least, this observation raises the question of the consistency between energy policy and agriculture and forestry policies, where the Common Agricultural Policy is at the forefront.

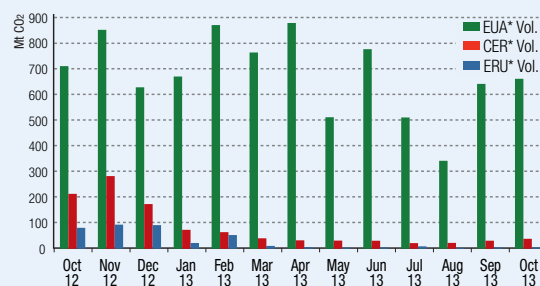
Valentin Bellassen - CDC Climat Research

1. CDC Climat Research, *Climate Study* No. 39 "Over 800 installations in the forming and food-processing sectors are concerned by the EU ETS."
2. CDC Climat Research, *Climate Study* No. 40 "Forestry and climate change mitigation in European policies: priority to fuel-wood."

## Key points

- **Backloading and reforms of the EU ETS:** while the EU Parliament has set a provisional date of Dec 10 for a vote on the EU Commission's backloading plans, wider reforms plans are likely to take at least two years to be agreed.
- **2030 climate and energy package:** the EU Parliament's draft report on the 2030 climate and energy package doesn't include any references to simple or multiple targets.
- **Fall in EUA prices and a rise in volumes:** the EUA spot price averaged €4.9 in October, falling from its €5.2 average in September. Total traded volumes of carbon credits (EUA, CER and ERU) increased marginally by 4% in October to 704.8 million.

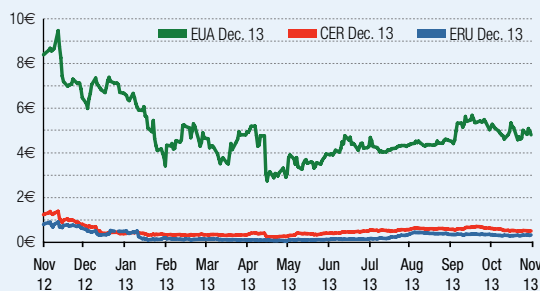
### Trading volumes: EUA +3.0%, CER +24.0% ERU -6.0%



\* Spot & futures, exchanges & OTC cleared

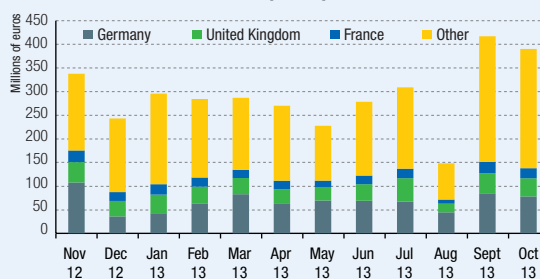
Source: CDC Climat Research calculation, based on data from BlueNext, EEX, ICE Futures Europe, NYMEX, Nasdaq OMX, and LCH Clearnet

### Price of the Dec. 13 contract: EUA -6%



Source: CDC Climat Research, ICE Futures Europe

### Income from Phase 3 auctions: 390.25 M€ in Octobre (-6%)



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

# Energy

## Primary energy prices and electricity prices

			Oct. 2013	
Coal	API # 2 CIF ARA (First month in USD/t)		83.1	▲
Natural gas	NBP (spot in €/MWh)		26.2	▼
	TTF (spot in €/MWh)		25.9	▼
Crude oil	Brent (First month in USD/b)		109.4	▼
Electricity	Germany (€/MWh)	Spot	38.3	▼
		Calendar	37.9	▼
	United Kingdom (€/MWh)	Spot	56.8	▼
		Next summer	58.2	▼
		Next winter	64.8	▼

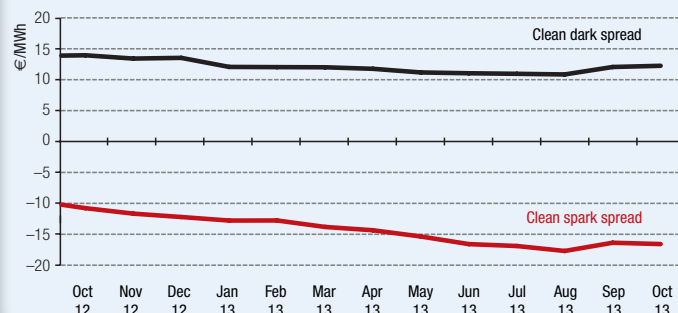
Sources: CDC Climat Research, Thomson Reuters

## Clean dark, clean spark spreads and switching price

	Clean spark (€/MWh)		Clean dark (€/MWh)		Switching Price (€/tCO <sub>2</sub> )	
	spot	futures	spot	futures	spot	futures
Germany*	-15.3	-16.6	12.8	12.2	31.2	31.9
United Kingdom*	11.0	4.1	30.5	32.2	31.3	30.5

\* Germany, 2014 calendar contract, United Kingdom, summer 2014 contract.

### German baseload – monthly average of Cal. 2014 clean dark and clean spark spreads



Sources: CDC Climat Research, Thomson Reuters

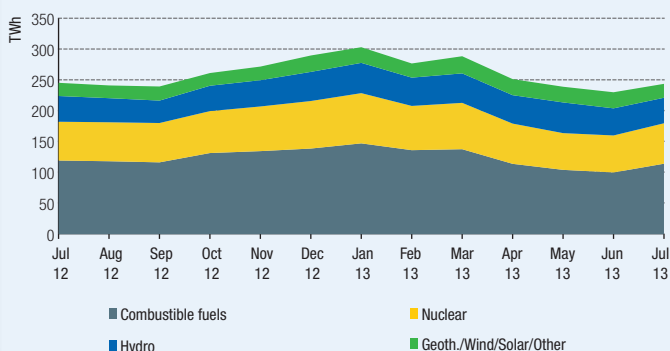
The price of Brent crude averaged below USD 110 per barrel in October due to reduced geopolitical tensions in the middle east and news from Libya that it will start exporting oil from all ports. Milder weather conditions and a lack of strike action at a major refinery in the UK drove average gas prices downwards: NBP spot prices fell by 1.7% while TTF spot prices fell by 2.3%. Lower temperatures and a peak in wind power generation in late October also helped decrease electricity prices: German spot prices fell by 17.6% to €38.3 per MWh and forward prices (calculated by the cal. 2014 contract) decreased by 2.3% to €37.9 per MWh, while in the UK, spot prices fell by 4.1% to €56.8 per MWh and Winter 2014 prices decreased by 1.5% to €64.8 per MWh. October also saw a European coal price rally, with average prices increasing by 7.78% to \$83.1 per tonne. Clean dark and spark prices in Germany fell sharply on the spot market but remained the same levels on the forward market. In the UK, clean dark and spark spreads decreased on the spot market but increased slightly on the forward market.

# Production

## Electricity generation (TWh)

EU 20 (in TWh)	July 13	Jan.-Jul. 13	Year-on-Year (% change)
Production	244.7	1,839.9	-1.1%
of which - Combustible fuels	114.7	857.2	-6.4%
- Nuclear	65.8	480.6	-0.5%
- Hydro	41.5	325.2	8.0%
- Geoth./Wind/Solar/Other	22.6	177.0	9.5%

\* Gas, coal, oil.

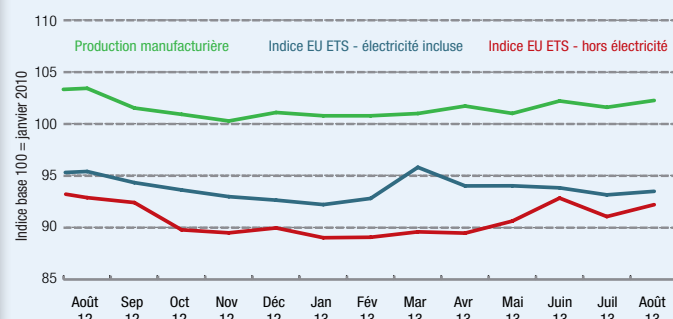


Sources: CDC Climat Research, from IEA data

## Production indices (Index base year 2010)

EU 27	Aug. 13	Last month (pts)	Year-on-Year (pts)
Indust. Prod. (excl. construction)	102.3	0.7	-1.2
EU ETS sectors production* (incl. electricity)	93.5	0.3	-1.9
EU ETS sectors production* (excl. electricity)	92.2	1.1	-0.7
Electricity, gas and heating	94.2	-0.1	-2.6
Cement	81.8	2.1	1.0
Metallurgy	99.3	2.0	0.3
Oil refinery	94.4	-0.9	-3.9

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

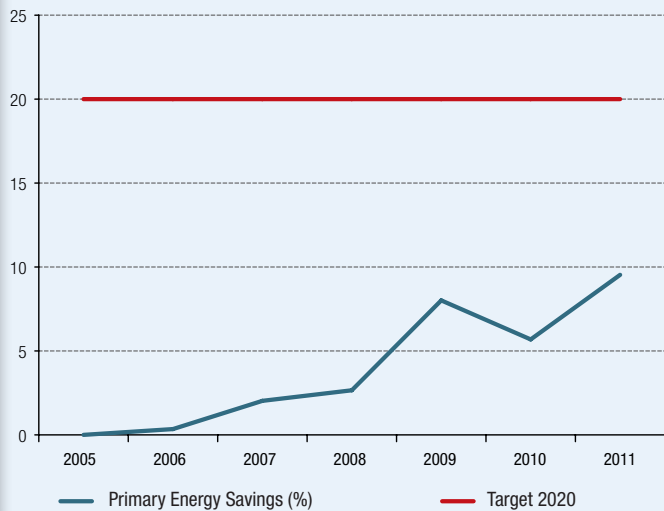


Sources: CDC Climat Research from Eurostat data

After the relatively positive macroeconomic outlook in September, questions were raised of the region's economic recovery by a fall in the composite eurozone PMI, as it registered an unexpected fall from a 27 month high of 52.2 in September to 51.5 in October. On the other hand, the EU-27 business climate index rose to -0.01, close to its historic long-term average. Our EU ETS sector index expanded by 0.3 pts in August helped by increases of around 2 pts in the cement and basic metals sectors. While industrial production increased month-on-month by 0.7 pts., it is 1.2 pts. below August 2012 levels. The cumulative electricity generation for EU-27 between January-July 2013 was 1839.9TWh, which represents a 1.1% decrease over the same period last year. This decrease in cumulative electricity generation was accompanied by an increase in renewable energy (+9.5%) and hydroelectric energy (+8.0%) and a decline in the use of fossil fuels (-6.4%) and nuclear energy (-0.5%).

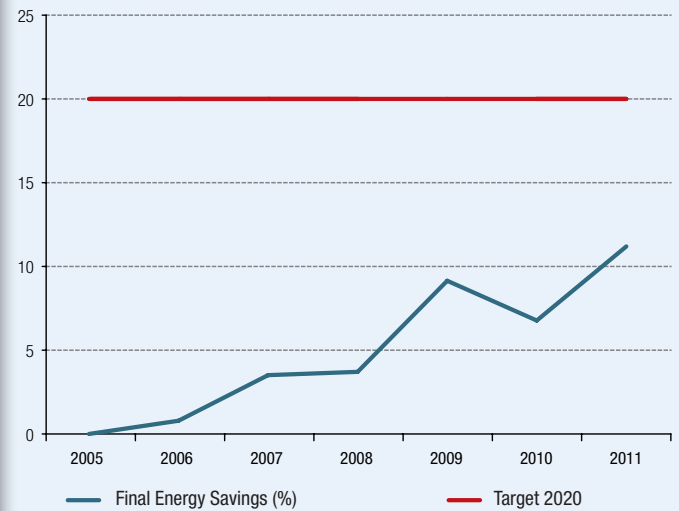
# Coordination with the 20-20-20 policies

## Primary Energy Savings in EU-27



Source: CDC Climat Research, based on Eurostat data

## Final Energy Savings in EU-27



Source: CDC Climat Research, based on Eurostat data

The EU Parliament's draft report on the 2030 climate and energy package has been circulated around the EU Parliament since October 9<sup>th</sup>. The content of this report doesn't include any references to simple or multiple and targets in the 2030 package. Following this, thirteen EU environment ministers urged the EU to adopt ambitious energy and climate goals for 2030 and reform the EU ETS on October 28<sup>th</sup>. The EU Environment Agency (EEA) released its assessment report on progress in meeting GHG emission reduction, renewable energy (RES) and energy efficiency (EE) targets on October 9<sup>th</sup>. The EU is on track to reach its GHG emissions target, its RES target but the EE target remains a real challenge. Six EU member states are not expected to meet their 2020 emissions reduction targets without introducing additional policies or buying offsets. On October 17<sup>th</sup>, the EU Commission issued a formal request to Romania and the Czech Republic to ensure full compliance with their obligations under EU legislation on energy efficiency in buildings (Directive 2010/31/EU).

## Institutional environment

### Phase 2 balance

	2008	2009	2010	2011	2012	Total
Free allowances (A)	1,958	1,974	1,998	2,016	2,049	9,996
Auctioned allowances (E)	44	78	92	93	99	407
Verified emissions (VE)	2,120	1,880	1,939	1,904	1,867	9,709
<b>Compliance position (A + E - VE)</b>	<b>-117</b>	<b>172</b>	<b>152</b>	<b>205</b>	<b>282</b>	<b>694</b>
<b>Allowance /credits surrendered</b>						
EUA (R)	2,010	1,839	1,793	1,637	1,383	8,662
URCE	84	77	117	178	214	670
URE	0	3	20	76	279	378
<b>EUA excess (+) or shortfall (-) (A + E - R)</b>	<b>-7</b>	<b>213</b>	<b>297</b>	<b>472</b>	<b>766</b>	<b>1,742</b>

Sources: CDC Climat Research based on EUTL, ICE Futures Europe, EEX

### CER and ERU supply

	Oct. 13	Last month change
<b>Number of CDM projects</b>	<b>11,063</b>	<b>+26</b>
<i>of which - registered</i>	7,366	+77
<i>with - CER issued</i>	2,484	+18
<b>Cumulative volume of CER issued (Mt)</b>	<b>1,400</b>	<b>+12</b>
CERs available until 2015, EU ETS eligible - CDC Climat Research estimate (Mt)*	2,080	0
<b>Number of JI projects</b>	<b>787</b>	<b>+1</b>
<i>of which - registered</i>	602	+1
<b>Cumulative volume of ERU issued (Mt)</b>	<b>829.1</b>	<b>+3</b>
<i>via - Track 1</i>	802.4	+1
<i>via - Track 2</i>	26.7	+2

\* Modèle de CDC Climat Recherche : <http://www.cdcclimat.com/The-risks-of-CDM-projects-how-did-only-30-of-expected-credits-come-through,900.html?lang=fr>

Sources: CDC Climat Research, UNEP Risoe

EU president Lithuania asked EU member states at a November 8<sup>th</sup> meeting for a mandate to begin so-called triologue talks with the parliament over the backloading proposal. If agreed there, the final text would then go to the parliament's environment committee, before being sent to the full parliament for a final vote which is tentatively scheduled for December 10<sup>th</sup>. The three remaining options being considered currently by the Commission for further structural reforms are: permanently cancelling a number of permits that were due to be auctioned, increasing the annual linear reduction factor and setting up a mechanism to regulate the supply of allowances. However, these proposals will not be decided on unless the backloading plan is agreed on first. Regarding aviation and the EU ETS, the EU Commission proposed amending the EU ETS in order to covered the part of flights that takes place in EU regional airspace on October 15<sup>th</sup>. The adjustment in the legislation will apply from 1<sup>st</sup> January 2014 and until a planned global Market Based Mechanism becomes applicable to international aviation emissions by 2020 to the ICAO.

# Carbon markets dashboard

## Primary market - EUA auctions in Phase 3

		Oct-12	Nov-12	Dec-12	Jan-13	Feb-13	Mar-13	Apr-13	May-13	Jun-13	Jul-13	Aug-13	Sep-13	Oct-13
Common Auction Platform + United Kingdom & Germany	Price (€/t)	7.54	7.01	6.31	5.05	4.37	4.06	3.85	3.40	4.23	4.16	4.40	5.19	4.83
	Volume (Mt)	3.00	48.19	38.51	59.63	65.03	70.61	70.19	66.45	65.89	76.65	33.65	80.33	80.62
Auction Revenues (M€)	Germany	22.62	107.67	35.89	42.61	62.46	82.86	62.31	69.46	68.98	67.09	44.50	84.82	78.19
	United Kingdom	-	43.03	32.71	39.40	36.38	34.23	31.05	28.69	35.06	49.65	18.30	42.33	38.40
	France	-	24.73	18.73	21.97	19.37	17.50	18.14	13.58	18.29	20.16	8.76	24.28	21.28
	Others	-	162.35	155.78	191.70	166.09	152.26	158.58	116.04	156.10	172.06	76.64	265.65	252.38
	Total	22.62	337.79	243.11	295.68	284.30	286.86	270.07	227.66	278.43	308.96	148.20	417.08	390.25

Sources: EEX, ICE Futures Europe

## Primary market - CER and ERU issued (MtCO<sub>2</sub>)

		Oct-12	Nov-12	Dec-12	Jan-13	Feb-13	Mar-13	Apr-13	May-13	Jun-13	Jul-13	Aug-13	Sep-13	Oct-13
Cumulative volume of CER issued UNEP-Risoe (Mt)		1,036	1,094	1,155	1,198	1,208	1,271	1,308	1,335	1,353	1,362	1,369	1,388	1,389
Cumulative volume of ERU issued (Mt)	Track 1 (Mt)	232.7	233.2	385.7	564.6	600.0	651.3	651.3	714.5	757	757	785	802	802
	Track 2 (Mt)	19.4	20.0	363.8	22.6	22.7	22.9	22.9	23.9	24	25	25	25	26

Sources: UNEP-Risoe, CDC Climat Research

## Secondary market - Prices (€/t) and volumes: EUA, CER, ERU (ktCO<sub>2</sub>)

			Oct-12	Nov-12	Dec-12	Jan-13	Feb-13	Mar-13	Apr-13	May-13	Jun-13	Jul-13	Aug-13	Sep-13	Oct-13
ICE Futures Europe	Daily spot	Price EUA phase 3	-	-	6.79	5.19	4.59	4.09	3.88	3.51	4.25	4.22	4.42	5.22	4.91
		Volume EUA phase 3	-	-	59	322	1,579	6,023	78,306	10,801	28,962	24,076	5,564	14,672	10,483
		Price CER	1.49	0.89	0.40	0.17	0.15	0.17	0.09	0.39	0.44	0.53	0.62	0.65	0.56
		Volume CER	-	-	-	327	1,099	1,541	1,901	0	112	0	57	170	0
	Dec.13	Price EUA	-	-	6.79	5.19	4.59	4.09	3.88	3.51	4.25	4.22	4.42	5.22	4.91
		Volume EUA	-	-	59	322	1,579	6,023	78,306	10,801	28,962	24,076	5,564	14,672	10,483
		Price CER	1.49	0.89	0.40	0.17	0.15	0.17	0.09	0.39	0.44	0.53	0.62	0.65	0.56
		Volume CER	-	-	-	327	1,099	1,541	1,901	0	112	0	57	170	0
		Price ERU	1.46	0.76	0.44	0.25	0.14	0.13	0.09	0.11	0.14	0.22	0.41	0.36	0.31
		Volume ERU	12,815	18,506	24,314	9,407	7,344	1,425	4,804	2,940	5,062	8,984	2,234	5,095	4,773
	Dec.14	Price EUA	8.69	8.20	7.22	5.61	4.94	4.37	4.11	3.72	4.46	4.39	4.58	5.38	5.07
		Volume EUA	59,562	69,731	42,296	70,721	78,927	79,675	112,934	59,334	95,104	48,690	74,289	93,620	135,862
		Price CER	1.78	1.15	0.59	0.43	0.38	0.37	0.35	0.39	0.48	0.56	0.62	0.62	0.52
		Volume CER	11,757	7,128	3,505	5,883	4,361	2,089	3,885	1,949	8,891	7,134	6,505	12,753	7,949
	Dec.15	Price EUA	9.08	8.61	7.57	5.87	5.15	4.55	4.28	3.88	4.67	4.55	4.75	5.59	5.28
		Volume EUA	21,338	24,491	28,890	41,647	57,190	49,718	61,556	34,689	91,861	41,204	20,176	46,207	57,629
		Price CER	1.89	1.23	0.68	0.51	0.43	0.41	0.38	0.46	0.55	0.64	0.70	0.71	0.60
		Volume CER	5,030	4,094	2,738	2,281	2,767	710	1,706	4,087	6,792	2,617	620	3,184	5,586

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		2008	2009	2010	2011	2012
Combustion	-253.1	-113.5	-125.8	-76.9	-40.6	Germany	-84.0	-36.6	-54.4	-49.5	-27.8
Oil refining	-1.4	7.6	14.3	16.0	24.2	United Kingdom	-50.8	-15.0	-16.8	2.5	-2.2
Coking plants	1.5	6.8	2.9	3.1	5.7	Italy	-8.5	24.1	8.5	5.3	12.8
Metal ores	4.3	11.0	8.8	8.9	9.8	Poland	-3.1	10.8	5.9	4.2	16.1
Steel production	51.6	89.3	71.4	72.8	74.0	Spain	-9.6	13.7	29.5	18.4	17.4
Cement	20.9	61.4	61.0	62.8	74.1	France	5.5	17.5	23.4	33.9	35.8
Glass	2.5	6.1	5.5	5.4	6.4	Czech Republic	5.2	12.2	10.6	12.2	17.1
Ceramic products	5.3	10.0	10.2	9.6	10.4	The Netherlands	-6.8	2.8	0.1	8.9	10.6
Paper	6.9	11.3	10.0	11.1	12.9	Romania	7.7	24.9	27.7	23.6	26.9
Other activities	0.2	4.3	1.3	-0.7	6.2	Others	-17.0	39.8	25.3	52.7	76.6
Total (Mt)	-161.3	94.2	59.8	112.1	183.2	Total (Mt)	-161.3	94.2	59.8	112.1	183.2

Source: CCTL

Source: CCTL