THE EUA DEC18 HIT 14 EURO

The benchmark carbon contract gained more than 30% in March. In the first three trading days the price still fell shortly below the 10 euro mark, but it increased continuously during the month until it hit a seven year high at 14.17 euro. Despite the correction in the last days of the month, March showed the biggest price increase in years. The monthly candle is the biggest white candle in years. Both traded volume and open interest in the EUA Dec18 increased.

Last month, we identified the following factors as supportive for the carbon market:

- The compliance deadline is in less than one month. All the companies must know by now their exact 2017 emissions (as they had to report them until 31 March) and cover the shortage. Many of those installations that did not cover their 2017 emissions last year were frightened by the price rally and delayed their purchases continuously. They are however running out of time. If they fail to purchase and surrender the allowances until the end of April, they risk a fine of 100 euro per each not surrendered allowance (and in addition, they have to purchase the EUAs and surrender them).

- Industrial installations are afraid of lower free allocation in the future. The rules of free allocation will be significantly stricter in Phase 4 when they are recalculated based on new (and declining) benchmarks, reviewed production levels and shortened carbon leakage list. They do therefore not borrow allowances from next year’s allocation, but purchase them in the market.

- In addition, industrial installations that had a surplus in the last years accumulated during the financial crisis are running out of their extra allowances and have to turn to the market to buy allowances. They do not appear on the sellers’ side at all (see the previous bullet point). It is difficult to find sellers these days and buyers are just running behind the offers.

- Utilities were more active in hedging their production. Although December and January were very mild, February and March this year had below seasonal average temperatures in Europe with gas storages at low levels (therefore gas was more expensive) that incentivised the burning of hard coal and lignite. Utilities are hedging this extra power demand covered with coal burning.

- Speculative buyers.
  
  $\Rightarrow$ One reason for speculation is that all the reforms that will tighten the supply from next year (and in Phase 4) have been approved. The market stability reserve will have the double feed rate than the original proposal of the Commission AND approximately 2 billion allowances will be cancelled in 2023. There measures affect the auction supply, but free allocation for industrial installations will be also reduced.

  $\Rightarrow$ Other reason for speculation is that EUA became financial instrument in January 2018 (due to MiFID II), and are appealing for hedge funds to diversify their portfolio. If they check the chart, they realise that the carbon price moves in an increasing trend since last May. As these are financially strong companies, even by investing just a fraction of their money they can lift the carbon price significantly.

- Mid March, the European Commission announced that it would publish 2017 verified emissions 3 April. The broad market consensus was that emissions had broken the trend and increased last year because of the strong industry and construction sectors.
EMISSIONS INCREASE FOR THE FIRST TIME SINCE 2013

Emissions of open installations in the EU ETS increased by 1.1% in 2017 to 1.821 billion tonnes of CO2. Emissions without aviation reached 1.756 billion tonnes (+1.0% y/y), in line with the market consensus.

Methodology: When comparing 2017 and 2016 verified emissions, we assumed flat emissions for those open installations that did not report any emissions for 2017.

Spain and Portugal posted the biggest increase in their emissions (10.5% and 18.1%, respectively) as low hydro reserves forced utilities to burn more fossil fuels. Central eastern European countries also increased their emissions in tandem with their consolidating economy.

Tops and flops by country

<table>
<thead>
<tr>
<th></th>
<th>2017 emissions</th>
<th>2016 emissions</th>
<th>Y/Y %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Portugal</td>
<td>31,857,922</td>
<td>26,983,825</td>
<td>18.1%</td>
</tr>
<tr>
<td>Spain</td>
<td>141,507,792</td>
<td>128,079,833</td>
<td>10.5%</td>
</tr>
<tr>
<td>Hungary</td>
<td>23,170,446</td>
<td>21,255,739</td>
<td>9.0%</td>
</tr>
<tr>
<td>France</td>
<td>111,097,931</td>
<td>105,562,983</td>
<td>5.2%</td>
</tr>
<tr>
<td>Poland</td>
<td>203,536,048</td>
<td>198,801,586</td>
<td>2.4%</td>
</tr>
</tbody>
</table>

2017 was the first year since 2013, when emissions of installations covered by the European emissions trading system increased. The price posted a marginal gain (+0.2% d/d) on the day of the publication of the data.

Tops and flops by sector

<table>
<thead>
<tr>
<th></th>
<th>2017 emissions</th>
<th>2016 emissions</th>
<th>Y/Y %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Production of non-ferrous metals</td>
<td>7,319,678</td>
<td>6,702,106</td>
<td>9.2%</td>
</tr>
<tr>
<td>Aircraft operator activities</td>
<td>64,858,539</td>
<td>61,453,009</td>
<td>5.5%</td>
</tr>
<tr>
<td>Production of ammonia</td>
<td>22,219,560</td>
<td>21,166,810</td>
<td>5.0%</td>
</tr>
<tr>
<td>Manufacture of ceramics</td>
<td>13,708,348</td>
<td>13,065,368</td>
<td>4.9%</td>
</tr>
<tr>
<td>Production of paper or cardboard</td>
<td>19,159,400</td>
<td>18,299,859</td>
<td>4.7%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>2017 emissions</th>
<th>2016 emissions</th>
<th>Y/Y %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Production of glyoxylic acid</td>
<td>9,940</td>
<td>11,112</td>
<td>-10.5%</td>
</tr>
<tr>
<td>Production of pig iron or steel</td>
<td>5,561,637</td>
<td>5,867,374</td>
<td>-5.2%</td>
</tr>
<tr>
<td>Mineral oil refineries</td>
<td>10,909,835</td>
<td>11,389,367</td>
<td>-4.2%</td>
</tr>
<tr>
<td>Combustion (&gt; 20 MW)</td>
<td>126,852,780</td>
<td>131,478,315</td>
<td>-3.5%</td>
</tr>
<tr>
<td>Manufacture of glass</td>
<td>16,617,120</td>
<td>16,711,980</td>
<td>-0.6%</td>
</tr>
</tbody>
</table>
April is the last month for installations to purchase allowances to comply for their 2017 emissions. Many of them were delaying their purchases because of the rally the carbon market witnessed in the first months of the year. Late buyers will support the carbon price this month. The deadline for surrendering allowances is 30 April.

On 2 May 2018 at 12:00 CEST, the European Commission will grant unlimited access on the EUTL website to the quantity of allowances surrendered per installation for 2017 as well as the installation-level compliance code, based on the data available on 30 April, setting out whether an operator surrendered the required amount of allowances. The compliance information data will also be published at the same time in an Excel spreadsheet on the Union Registry page of this website.

 normalized chart of German 2019 power, European 2019 coal, Brent and EUA Dec18

EUA Dec18 Price development (EUR)

Support levels: 12.62 (Fibonacci level), 12.08 (20DMA)

Resistance levels: 13.59 (local high), 14.05 (upper Bollinger band), 14.17 (2018 high)

The EUA Dec18 continued its increasing trend in the first half of March and accelerated the rally in after the 15 March. The sudden jump made the price overbought and lifted the RSI above 70. After hitting a new seven year high at 14.17 euro, the price started a correction, but remained above the Fibonacci level at 12.62 euro.

Should the price of the benchmark carbon contract fall further, it could retest the 20DMA at 12.08 euro and the Fibonacci level at 11.66 euro.

In a positive scenario, if compliance buyers, utilities and speculators support the price, the EUA Dec18 could retest the 2018 high at 14.17 euro.

Most probably, however, the price will take a break as it was increasing continuously since May 2017 and consolidate between 12.60 and 14.20 euro, maintaining its high volatility.
Seasonality chart of the December EUA contracts (Dec18 and Avg. 2013-2017)

Vertis price forecasts (last update 5 April 2018)

- **Base case**  
  April 2018 – December 2018: EUR 11.00-15.15

- **Worst case**  
  April 2018 – December 2018: EUR 9.05-14.17

- **Best case**  
  April 2018 – December 2018: EUR 11.75-16.25

Market data

<table>
<thead>
<tr>
<th></th>
<th>EUA spot</th>
<th>EUA Dec18</th>
</tr>
</thead>
<tbody>
<tr>
<td>Open in March 2018 (€)</td>
<td>10.03</td>
<td>10.05</td>
</tr>
<tr>
<td>High in March 2018 (€)</td>
<td>14.13</td>
<td>14.17</td>
</tr>
<tr>
<td>Low in March 2018 (€)</td>
<td>9.91</td>
<td>9.92</td>
</tr>
<tr>
<td>Close in March 2018 (€)</td>
<td>13.26</td>
<td>13.28</td>
</tr>
<tr>
<td>Change February/March 2018 (%)</td>
<td>31.5%</td>
<td>31.5%</td>
</tr>
<tr>
<td>Open Interest end of March 2018 (‘000)</td>
<td>482,017</td>
<td></td>
</tr>
<tr>
<td>Change in Open Interest February/March 2018 (%)</td>
<td>1.9%</td>
<td></td>
</tr>
<tr>
<td>Monthly Volume Traded in March 2018 (‘000)</td>
<td>81,768</td>
<td>473,822</td>
</tr>
<tr>
<td>Change in Volume Traded February/March 2018 (%)</td>
<td>242.0%</td>
<td>45.3%</td>
</tr>
<tr>
<td>20-day average (€)</td>
<td>11.63</td>
<td>11.65</td>
</tr>
<tr>
<td>30-day average (€)</td>
<td>10.97</td>
<td>10.99</td>
</tr>
<tr>
<td>50-day average (€)</td>
<td>10.23</td>
<td>10.25</td>
</tr>
<tr>
<td>100-day average (€)</td>
<td>8.94</td>
<td>8.93</td>
</tr>
</tbody>
</table>
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