

**LONDON ENERGY BROKERS' ASSOCIATION OTC ENERGY VOLUME REPORT – APRIL 2019**

London Energy Brokers' Association ("LEBA") is the industry association representing the FCA regulated wholesale market brokers in the OTC and exchange traded European energy markets.

| Market  | April 2019                                 |                             |                           | 2019 Year to Date                          |                             |                           |
|---|--|-----------------------------|---------------------------|--|-----------------------------|---------------------------|
|   | Total OTC<br>Bilaterally<br>Settled Volume | Total OTC<br>Cleared Volume | Grand Total OTC<br>Volume | Total OTC<br>Bilaterally Settled<br>Volume | Total OTC<br>Cleared Volume | Grand Total OTC<br>Volume |
| <b>Natural Gas (MWh)</b>                        |  |                             |                           |  |                             |                           |
| <b>UK NBP</b>                                   | <b>405,827,671</b>                         | <b>64,943,925</b>           | <b>470,771,596</b>        | <b>1,882,258,777</b>                       | <b>276,654,946</b>          | <b>2,158,913,723</b>      |
| <b>European Hubs</b>                            |  |                             |                           |  |                             |                           |
| Netherlands TTF                                 | 2,123,652,126                              | 191,450,921                 | 2,315,103,047             | 8,904,216,937                              | 901,131,852                 | 9,805,348,789             |
| Germany NCG                                     | 129,082,521                                | 745,320                     | 129,827,841               | 765,400,863                                | 2,187,080                   | 767,587,943               |
| Germany GasPool                                 | 95,781,333                                 | 0                           | 95,781,333                | 470,354,541                                | 61,488                      | 470,416,029               |
| France PEG                                      | 32,513,109                                 | 306,480                     | 32,819,589                | 311,823,246                                | 1,625,740                   | 313,448,986               |
| Austria VTP                                     | 63,348,121                                 | 2,847,000                   | 66,195,121                | 225,090,325                                | 2,847,000                   | 227,937,325               |
| Italy PSV                                       | 112,804,788                                | 718,584                     | 113,523,372               | 498,788,360                                | 3,681,384                   | 502,469,744               |
| Zeebrugge Hub                                   | 19,636,525                                 | 0                           | 19,636,525                | 146,057,197                                | 82,060                      | 146,139,257               |
| Other Gas                                       | 26,218,942                                 | 674,664                     | 26,893,606                | 97,542,394                                 | 6,118,815                   | 103,661,209               |
| <b>Total European Gas</b>                       | <b>2,603,037,465</b>                       | <b>196,742,969</b>          | <b>2,799,780,434</b>      | <b>11,419,273,863</b>                      | <b>917,735,419</b>          | <b>12,337,009,282</b>     |
| <b>Power (MWh)</b>                              |  |                             |                           |  |                             |                           |
| <b>UK Power</b>                                 | <b>78,665,841</b>                          | <b>0</b>                    | <b>78,665,841</b>         | <b>300,121,023</b>                         | <b>175,440</b>              | <b>300,296,463</b>        |
| <b>European Power</b>                           |  |                             |                           |  |                             |                           |
| German Power                                    | 304,917,031                                | 98,321,763                  | 403,238,794               | 1,243,645,418                              | 437,798,664                 | 1,681,444,082             |
| French Power                                    | 26,489,253                                 | 11,374,039                  | 37,863,292                | 122,800,142                                | 46,219,469                  | 169,019,611               |
| Nordic Power                                    | 11,904                                     | 13,685,745                  | 13,697,649                | 11,904                                     | 77,867,340                  | 77,879,244                |
| Italian Power                                   | 5,902,607                                  | 31,662,388                  | 37,564,995                | 21,399,119                                 | 132,328,149                 | 153,727,268               |
| Spanish Power                                   | 2,051,162                                  | 9,153,360                   | 11,204,522                | 12,106,512                                 | 42,109,512                  | 54,216,024                |
| Netherlands Power                               | 15,246,080                                 | 1,957,854                   | 17,203,934                | 56,830,991                                 | 10,269,350                  | 67,100,341                |
| Belgian Power                                   | 2,207,678                                  | 30,653                      | 2,238,331                 | 14,171,213                                 | 1,170,613                   | 15,341,826                |
| Central & Eastern Europe                        | 12,479,304                                 | 6,799,737                   | 19,279,041                | 58,699,285                                 | 32,690,484                  | 91,389,769                |
| Swiss Power                                     | 5,263,084                                  | 194,430                     | 5,457,514                 | 24,950,834                                 | 1,763,241                   | 26,714,075                |
| Other Power                                     | 7,902,219                                  | 1,183,264                   | 9,085,483                 | 37,488,054                                 | 6,783,812                   | 44,271,866                |
| <b>Total European Power</b>                     | <b>382,470,322</b>                         | <b>174,363,233</b>          | <b>556,833,555</b>        | <b>1,592,103,472</b>                       | <b>789,000,634</b>          | <b>2,381,104,106</b>      |
| <b>European Financial Coal Swaps (MT)</b>       |  |                             |                           |  |                             |                           |
| API 2 Rotterdam                                 | 0  | 55,840,000                  | 55,840,000                | 6,000                                      | 256,805,500                 | 256,811,500               |
| API 4 Richards Bay                              | 0  | 8,179,000                   | 8,179,000                 | 0  | 28,017,000                  | 28,017,000                |
| globalCOAL NEWC®                                | 0  | 12,433,000                  | 12,433,000                | 0  | 47,443,000                  | 47,443,000                |
| <b>Total European Financial Coal</b>            | <b>0</b>                                   | <b>76,452,000</b>           | <b>76,452,000</b>         | <b>6,000</b>                               | <b>332,265,500</b>          | <b>332,271,500</b>        |
| <b>European Carbon Emission Allowances (MT)</b> |  |                             |                           |  |                             |                           |
| EUA   | 12,083,000                                 | 142,460,000                 | 154,543,000               | 52,467,500                                 | 891,467,000                 | 943,934,500               |
| CER   | 0  | 0                           | 0                         | 0  | 853,000                     | 853,000                   |
| Other Emissions                                 | 0  | 0                           | 0                         | 0  | 0                           | 0                         |
| <b>Total European Carbon Emissions</b>          | <b>12,083,000</b>                          | <b>142,460,000</b>          | <b>154,543,000</b>        | <b>52,467,500</b>                          | <b>892,320,000</b>          | <b>944,787,500</b>        |

**2018 and 2019 “Month” and “Year to Date” comparisons.**

|  | Grand Total OTC Volume |                      |                | Grand Total OTC Volume |                       |                |
|--|------------------------|----------------------|----------------|------------------------|-----------------------|----------------|
|  | April<br>2018          | April<br>2019        | %<br>Change    | Year to Date<br>2018   | Year to Date<br>2019  | %<br>Change    |
| <b><u>Natural Gas (MWh)</u></b>                        |                        |                      |                |                        |                       |                |
| <b>UK NBP</b>  | <b>583,112,634</b>     | <b>470,771,596</b>   | <b>-19.27%</b> | <b>2,656,303,740</b>   | <b>2,158,913,723</b>  | <b>-18.72%</b> |
| <b><u>European Hubs</u></b>                            |                        |                      |                |                        |                       |                |
| Netherlands TTF  | 1,499,723,090          | 2,315,103,047        | 54.37%         | 7,101,113,794          | 9,805,348,789         | 38.08%         |
| Germany NCG  | 100,229,016            | 129,827,841          | 29.53%         | 538,339,772            | 767,587,943           | 42.58%         |
| Germany GasPool  | 66,774,195             | 95,781,333           | 43.44%         | 316,867,907            | 470,416,029           | 48.46%         |
| France PEG*  | 26,922,336             | 32,819,589           | 21.90%         | 240,320,500            | 313,448,986           | 30.43%         |
| Austria VTP  | 29,915,922             | 66,195,121           | 121.27%        | 180,513,069            | 227,937,325           | 26.27%         |
| Italy PSV  | 65,461,620             | 113,523,372          | 73.42%         | 308,147,103            | 502,469,744           | 63.06%         |
| Zeebrugge Hub  | 57,092,670             | 19,636,525           | -65.61%        | 197,426,512            | 146,139,257           | -25.98%        |
| Other Gas  | 32,282,692             | 26,893,606           | -16.69%        | 182,852,405            | 103,661,209           | -43.31%        |
| <b>Total European Gas</b>                              | <b>1,880,578,882</b>   | <b>2,799,780,434</b> | <b>48.88%</b>  | <b>9,083,973,968</b>   | <b>12,337,009,282</b> | <b>35.81%</b>  |
| <b><u>Power (MWh)</u></b>                              |                        |                      |                |                        |                       |                |
| <b>UK Power</b>  | <b>63,731,293</b>      | <b>78,665,841</b>    | <b>23.43%</b>  | <b>263,004,370</b>     | <b>300,296,463</b>    | <b>14.18%</b>  |
| <b><u>European Power</u></b>                           |                        |                      |                |                        |                       |                |
| German Power   | 415,028,004            | 403,238,794          | -2.84%         | 1,740,107,135          | 1,681,444,082         | -3.37%         |
| French Power   | 53,172,169             | 37,863,292           | -28.79%        | 252,841,739            | 169,019,611           | -33.15%        |
| Nordic Power   | 19,730,581             | 13,697,649           | -30.58%        | 87,446,121             | 77,879,244            | -10.94%        |
| Italian Power  | 33,353,967             | 37,564,995           | 12.63%         | 135,274,359            | 153,727,268           | 13.64%         |
| Spanish Power  | 7,344,486              | 11,204,522           | 52.56%         | 35,485,176             | 54,216,024            | 52.78%         |
| Netherlands Power                                      | 22,361,347             | 17,203,934           | -23.06%        | 81,887,695             | 67,100,341            | -18.06%        |
| Belgian Power  | 4,912,050              | 2,238,331            | -54.43%        | 18,333,207             | 15,341,826            | -16.32%        |
| Central & Eastern Europe                               | 24,990,639             | 19,279,041           | -22.85%        | 117,642,024            | 91,389,769            | -22.32%        |
| Swiss Power  | N/A                    | 5,457,514            | N/A            | N/A                    | 26,714,075            | N/A            |
| Other Power**  | 13,590,394             | 9,085,483            | -33.15%        | 51,608,683             | 44,271,866            | -14.22%        |
| <b>Total European Power</b>                            | <b>594,483,637</b>     | <b>556,833,555</b>   | <b>-6.33%</b>  | <b>2,520,626,139</b>   | <b>2,381,104,106</b>  | <b>-5.54%</b>  |
| <b><u>European Financial Coal Swaps (MT)</u></b>       |                        |                      |                |                        |                       |                |
| API 2 Rotterdam  | 51,681,500             | 55,840,000           | 8.05%          | 223,599,500            | 256,811,500           | 14.85%         |
| API 4 Richards Bay                                     | 6,489,000              | 8,179,000            | 26.04%         | 28,762,000             | 28,017,000            | -2.59%         |
| globalCOAL NEWC®                                       | 11,198,000             | 12,433,000           | 11.03%         | 43,382,000             | 47,443,000            | 9.36%          |
| <b>Total European Financial Coal</b>                   | <b>69,368,500</b>      | <b>76,452,000</b>    | <b>10.21%</b>  | <b>295,743,500</b>     | <b>332,271,500</b>    | <b>12.35%</b>  |
| <b><u>European Carbon Emission Allowances (MT)</u></b> |                        |                      |                |                        |                       |                |
| EUA  | 259,988,000            | 154,543,000          | -40.56%        | 984,769,000            | 943,934,500           | -4.15%         |
| CER  | 0                      | 0                    | 0.00%          | 1,255,000              | 853,000               | -32.03%        |
| Other Emissions  | 0                      | 0                    | 0.00%          | 0                      | 0                     | 0.00%          |
| <b>Total European Carbon Emissions</b>                 | <b>259,988,000</b>     | <b>154,543,000</b>   | <b>-40.56%</b> | <b>986,024,000</b>     | <b>944,787,500</b>    | <b>-4.18%</b>  |

**Notes:**

\* Month and Year to Date comparisons for ‘France PEG’, which now covers TRF, will be made against previous France PEG volumes.

\*\* Month and Year to Date comparisons for ‘Other Power’ will be made against volumes that previously included Swiss Power.

|  | YTD Total OTC<br>Market Volume<br>Change 1 year | Proportion<br>Cleared OTC April<br>2019 | Proportion<br>Cleared OTC April<br>2018 | Average Price<br>April 2019                                   | Price Change<br>1 Month | Price<br>Change<br>1 Year | Historical<br>Volatility<br>1 Month |
|--|---|---|---|---|-------------------------|---------------------------|-------------------------------------|
| <b><u>Natural Gas (MWh)</u></b>                        |   |   |   |   |                         |                           |                                     |
| <b>UK NBP</b>  | - 19 %  | 13.80%                                  | 15.14%                                  |   |                         |                           |                                     |
| Netherlands TTF  | + 38 %  | 8.27%                                   | 10.54%                                  | Monthly Average<br>LEBA TTF Day<br>Ahead<br>15.13 €/MWh       |                         |                           |                                     |
| Germany NCG  | + 43 %  | 0.57%                                   | 0.14%                                   |   |                         |                           |                                     |
| Germany GasPool  | + 48 %  | 0.00%                                   | 0.20%                                   |   |                         |                           |                                     |
| France PEG   | + 30 %  | 0.93%                                   | 0.74%                                   |   |                         |                           |                                     |
| Austria VTP  | + 26 %  | 4.30%                                   | 0.25%                                   |   |                         |                           |                                     |
| Italy PSV  | + 63 %  | 0.63%                                   | 0.50%                                   |   |                         |                           |                                     |
| Zeebrugge Hub  | - 26 %  | 0.00%                                   | 0.00%                                   |   |                         |                           |                                     |
| Other Gas  | - 43 %  | 2.51%                                   | 1.01%                                   |   |                         |                           |                                     |
| <b>Total European Gas</b>                              | <b>+ 36 %</b>                                   | <b>7.03%</b>                            | <b>8.47%</b>                            |   |                         | <b>+ 1 %</b>              | <b>- 30 %</b>                       |
| <b><u>Power (MWh)</u></b>                              |   |   |   |   |                         |                           |                                     |
| <b>UK Power</b>  | <b>+ 14 %</b>                                   | <b>0.00%</b>                            | <b>0.00%</b>                            |   | <b>+ 7 %</b>            | <b>- 13 %</b>             | <b>100%</b>                         |
| German Power   | - 3 %   | 24.38%                                  | 14.13%                                  | Monthly Average<br>LEBA UK Power<br>Day Ahead<br>43.44 £/MWh  |                         |                           |                                     |
| French Power   | - 33 %  | 30.04%                                  | 23.40%                                  |   |                         |                           |                                     |
| Nordic Power   | - 11 %  | 99.91%                                  | 100.00%                                 |   |                         |                           |                                     |
| Italian Power  | + 14 %  | 84.29%                                  | 80.45%                                  |   |                         |                           |                                     |
| Spanish Power  | + 53 %  | 81.69%                                  | 61.64%                                  |   |                         |                           |                                     |
| Netherlands Power                                      | - 18 %  | 11.38%                                  | 19.20%                                  |   |                         |                           |                                     |
| Belgian Power  | - 16 %  | 1.37%                                   | 4.84%                                   |   |                         |                           |                                     |
| Central & Eastern Europe                               | - 22 %  | 35.27%                                  | 19.36%                                  |   |                         |                           |                                     |
| Swiss Power  | N/A   | 3.56%                                   | N/A                                     |   |                         |                           |                                     |
| Other Power  | - 14 %  | 13.02%                                  | 2.60%                                   |   |                         |                           |                                     |
| <b>Total European Power</b>                            | <b>- 6 %</b>                                    | <b>31.31%</b>                           | <b>22.19%</b>                           |   |                         |                           |                                     |
| <b><u>European Financial Coal Swaps (MT)</u></b>       |   |   |   |   |                         |                           |                                     |
| API 2 Rotterdam  | + 15 %  | 100.00%                                 | 99.99%                                  | Monthly Average<br>LEBA API 2 Front<br>Month<br>58.61 US\$/MT |                         |                           |                                     |
| API 4 Richards Bay                                     | - 3 %   | 100.00%                                 | 100.00%                                 |   |                         |                           |                                     |
| globalCOAL NEWC®                                       | + 9 %   | 100.00%                                 | 98.88%                                  |   |                         |                           |                                     |
| <b>Total Coal</b>                                      | <b>+ 12 %</b>                                   | <b>100.00%</b>                          | <b>99.82%</b>                           |   | <b>+ 1 %</b>            | <b>- 31 %</b>             | <b>67%</b>                          |
| <b><u>European Carbon Emission Allowances (MT)</u></b> |   |   |   |   |                         |                           |                                     |
| EUA  | - 4 %   | 92.18%                                  | 92.21%                                  | Monthly Average<br>LEBA EUA Spot<br>25.54 €/MT                |                         |                           |                                     |
| CER  | - 32 %  | N/A                                     | N/A                                     |   |                         |                           |                                     |
| Other Emissions  | N/A   | N/A                                     | N/A                                     |   |                         |                           |                                     |
| <b>Total Emissions</b>                                 | <b>- 4 %</b>                                    | <b>92.18%</b>                           | <b>92.21%</b>                           |   | <b>+ 22 %</b>           | <b>+ 94 %</b>             | <b>48%</b>                          |

Notes:

1. Price Change - 1 Month: calculated using the percentage change from the previous month
2. Price Change - 1 year: calculated using the percentage change from the previous year
3. Historical Volatility - 1 month: calculated by taking the annualised standard deviation of daily logarithmic returns over the last month.
4. N/A - no comparable data

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**NOTES TO EDITORS:**

LEBA, the London Energy Brokers' Association, is the industry association representing the FCA regulated wholesale market brokers in the over the counter (OTC) and the exchange traded liberalised European energy markets. These brokers intermediate and facilitate bilateral contracts to be concluded between banks, trading houses, commercial enterprises, public utilities and integrated energy businesses, providing liquidity and price discovery to these markets as well as contributing significant liquidity to European exchange traded markets.

The LEBA member firms that currently operate in the European gas, power, coal and emissions markets are:

|                              |  |                                     |  |
|------------------------------|--|-------------------------------------|--|
| <b>42Financial Services</b>  | <a href="http://www.42fs.com">www.42fs.com</a>                     | <b>BGC Partners LP</b>              | <a href="http://www.bgcpartners.com">www.bgcpartners.com</a> |
| <b>Evolution Markets</b>     | <a href="http://www.evomarkets.com">www.evomarkets.com</a>         | <b>GFI Brokers</b>                  | <a href="http://www.gfigroup.com">www.gfigroup.com</a>       |
| <b>Griffin Markets</b>       | <a href="http://www.griffinmarkets.com">www.griffinmarkets.com</a> | <b>ICAP Energy</b>                  | <a href="http://www.icapenergy.com">www.icapenergy.com</a>   |
| <b>Marex Spectron</b>        | <a href="http://www.marexspectron.com">www.marexspectron.com</a>   | <b>Tradition Financial Services</b> | <a href="http://www.tfsbrokers.com">www.tfsbrokers.com</a>   |
| <b>Tullett Prebon Energy</b> | <a href="http://www.tullettprebon.com">www.tullettprebon.com</a>   | <b>PVM Commodities*</b>             | <a href="http://www.pvmoil.co.uk">www.pvmoil.co.uk</a>       |

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