

### NORDIC ELECTRICITY MARKET

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#### THE WEATHER TYPE TURNS TO DRY

##### Forecast to week 14:

|               |                     |
|---------------|---------------------|
| ENOFUTBLQ3-19 | ↗ Bullish (>0%)     |
| ENOYR-20      | ↔ Sideways (± 0,5%) |
| NP System     | ↘ Bearish (<0%)     |
| NEDEC9        | ↘ Bearish (<0%)     |

#### FORECAST TO WEEK 14

#### ELECTRICITY DERIVATIVES

##### The nearest quarter

The weather forecasts have dried clearly during the weekend. The weather turns to very dry at the end of the week and stays dry for next week. The temperatures rise during the following days towards Thursday. However, after Thursday the temperatures start to fall and next week the temperatures are close to normal. The hydrobalance starts to decrease again, and we expect the front contracts to increase. However, weak fuel prices limit the upward pressure.

##### Annual products

Drier weather forecasts and increasing front contracts support the annual contract prices. However, the coal and gas prices are still very weak and technically the fuel prices continue bearish. The downward pressure in emission price is caused by weak gas price. At the German power market the closest annual contract has decreased again close to lowest trading levels this year and at the same time close to extremely strong support level of 44,5 €/MWh. So far we expect the annual contracts to fluctuate close to last week's closing levels, but at the German power market the possible breaking of the support level would also give a strong decreasing signal to the Nordic market's annual contracts.

#### SPOT MARKET

At the beginning of the week the temperatures are close to seasonal normal, but the temperatures start to rise towards Thursday and the electricity demand starts to decrease. After Thursday the temperatures fall, but the weather stays warmer than seasonal normal for the rest of the week. The Nordic wind power production increases on Tuesday to very high level. After Tuesday the wind power production decreases, but the wind power production stays slightly higher than normal for the rest of the week. In Finland the wind power production is fairly high during weekdays, until on weekend the wind power production decreases to lower than normal. The Russian capacity fee hours have two hours' break in the afternoon, when the electricity import from Russia to Finland is at high level. During the capacity fee hours the electricity import from Russia to Finland has decreased in April compared to March level. However, we expect the Finnish area price to stay close to Swedish area prices and at the same time to realize still slightly lower than system price.

#### EMISSIONS

The downward pressure to emission price is caused by very weak gas price and weak development at the German power market. Additionally, the political uncertainty is still very high due to ongoing Brexit negotiations. We expect the emission price fluctuation to continue to be high, but we think the decreasing development is slightly more likely. At the German power market the possible breaking of the strong support level would also cause a strong decreasing signal to CO2 market.

##### Market signals

|                                   | spot | Q3-19 | YR-20 |
|-----------------------------------|------|-------|-------|
| Hydrologic balance                | ↑    | ↑     | ↑     |
| Precipitation forecast            | ↑    | ↑     | ↑     |
| Temperature forecast              | →    | →     | →     |
| Spot                              | ↓    | ↓     | →     |
| Production and transmission exch. | ↓    | →     | →     |
| Emissions allowance               | ↓    | ↓     | ↓     |
| Coal price                        | ↓    | ↓     | ↓     |
| German prices                     | ↓    | ↓     | ↓     |
| Technical analysis                | ↓    | ↓     | ↓     |

| Product       | Date      | Value | % chg | Chg (EUR) |
|---------------|-----------|-------|-------|-----------|
| ENOFUTBLQ3-19 | 29.3.2019 | 35.85 | 6.1%  | 2.05      |
| ENOFUTBLQ4-19 | 29.3.2019 | 39.73 | 2.4%  | 0.93      |
| ENOFUTBLQ1-20 | 29.3.2019 | 41.58 | 1.9%  | 0.78      |
| ENOFUTBLQ1-21 | 29.3.2019 | 39.65 | 2.8%  | 1.07      |
| ENOYR-20      | 29.3.2019 | 34.55 | 2.5%  | 0.85      |
| ENOYR-21      | 29.3.2019 | 32.65 | 2.0%  | 0.65      |
| ENOYR-22      | 29.3.2019 | 31.80 | 0.0%  | 0.00      |
| ENOYR-23      | 29.3.2019 | 31.82 | 0.5%  | 0.16      |
| ENOYR-24      | 29.3.2019 | 31.50 | 0.9%  | 0.27      |
| NEDEC9        | 29.3.2019 | 21.52 | 4.2%  | 0.87      |
| NEDEC20       | 29.3.2019 | 21.85 | 4.2%  | 0.88      |

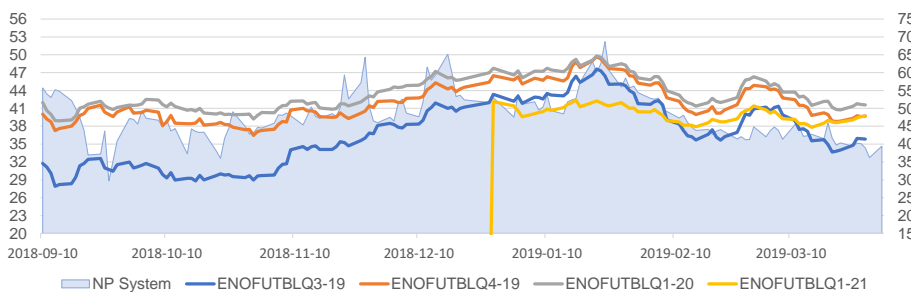
##### EPAD settlements

| 29.3.2019 (€/MWh) | 2019  | 2020  | 2021  | 2022  |
|-------------------|-------|-------|-------|-------|
| SYHEL             | 3.88  | 3.40  | 3.20  | 3.45  |
| SE1-NP System     | -1.00 | -1.25 | -1.25 | -1.25 |
| SE2 - NP System   | -1.00 | -1.25 | -1.25 | -1.25 |
| SE3 - NP System   | 1.70  | 1.93  | 1.75  | 2.00  |
| SE4 - NP System   | 3.20  | 3.38  | 3.38  | 3.25  |

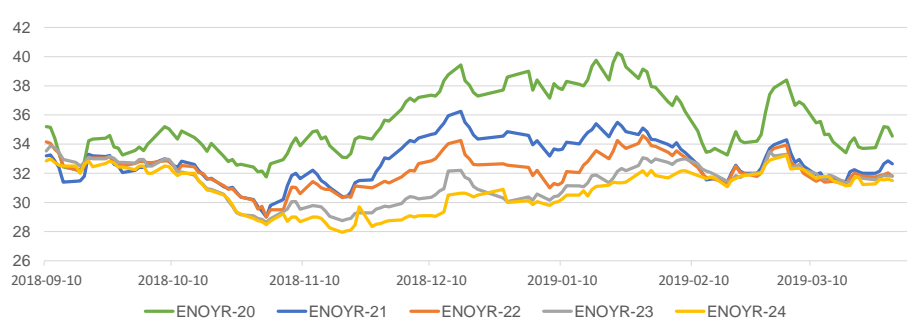
##### Week's spot price change

| Price area (€/MWh) | Date      | Value | % chg  | Chg (EUR) |
|--------------------|-----------|-------|--------|-----------|
| NP System          | 31.3.2019 | 37.89 | -5.8%  | -2.33     |
| NP Area FI         | 31.3.2019 | 34.63 | -11.6% | -4.56     |
| NP Area SE1        | 31.3.2019 | 34.49 | -11.3% | -4.41     |
| NP Area SE2        | 31.3.2019 | 34.49 | -11.3% | -4.41     |
| NP Area SE3        | 31.3.2019 | 34.49 | -11.4% | -4.43     |
| NP Area SE4        | 31.3.2019 | 34.49 | -11.4% | -4.43     |

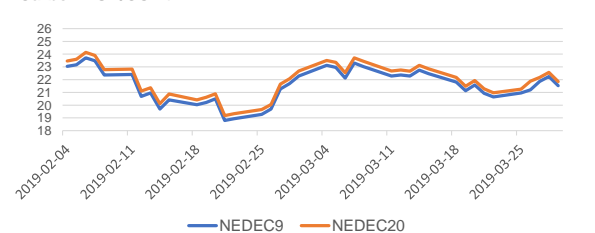
Quarters EUR/MWh (left), NP System EUR/MWh (right)



Years EUR/MWh



Carbon EUR/CO2 t



### COMMENTS ON WEEK 13

#### ELECTRICITY DERIVATIVES

##### The nearest quarter

Last week the front contracts corrected up. The upward correction and support to front contracts was caused by the precipitation that normalized during the following week. Additionally, at the end of the week the weather forecasts showed signs of the high pressure and the weather type change to dry.

##### Annual products

Last week the annual contract prices started to increase. Support to annual contract prices was caused by increasing front contracts and stronger emission price. Also the fuel prices recovered slightly at the beginning of the week. The reason for this was the colder weather outlook in Europe next week. However, the fuel prices continued decreasing again at the second half of the week, when still the supply was high. The annual contracts turned bearish at the end of the week, but at the weekly level the annual contracts closed higher.

#### SPOT MARKET

Last week the spot prices decreased sharply. At the beginning of the week the weather was close to normal, when it comes to temperatures and precipitation, but after Tuesday the temperatures started to rise clearly. The precipitation increased to high level at the end of the week and the inflows increased towards the end of the week. In Finland the wind power production increased again after Tuesday to clearly higher than normal. On Friday the nightly spot prices decreased in Finland and in Sweden to very low level. At the weekly level the Finnish area price realized close to Swedish area prices and at the same time the Finnish area price realized lower than system price.

#### EMISSIONS

At the beginning of last week the support to CO2 market was caused by increasing electricity market, that were supported by strengthened fuel prices. At the end of the week the fuel prices and the electricity market started to decrease, which also caused downward pressure to emission price. The gas price continued to be very weak and the gas remained very competitive in relation to coal. The political uncertainty was high when the Brexit negotiations continued. At the weekly level the emission price was, however, higher.

| Indicator             | ENOFUTBLQ3-19 | ENOYR-20 |
|-----------------------|---------------|----------|
| Coal-fired production | 2 %           | 19 %     |
| Coal price            | 14 %          | 1 %      |
| Gas price (NBP)       | 9 %           | 0 %      |
| German price level    | 2 %           | 3 %      |
| Spot                  | 33 %          | 35 %     |
| Crude oil Brent       | 65 %          | 45 %     |
| Water reservoirs      | 0 %           | 6 %      |
| EUR/USD FX rate       | 4 %           | 0 %      |
| Temperature           | 8 %           | 5 %      |
| Precipitation         | 16 %          | 13 %     |

##### Definition

The above figures measure the ability of market determinants to describe the price changes occurred in last 6 months. The affect is measured as Coefficient of Determination\*. Each variable is evaluated independently. We use a color scale to demonstrate efficacy, green (strong), yellow (moderate), red (weak)

| Forecast history | 13 | Chg   | 12 | Chg   |
|------------------|----|-------|----|-------|
| ENOFUTBLQ3-19    | ↘  | 6.1%  | ↘  | -9.0% |
| ENOYR-20         | ↘  | 2.5%  | ↘  | -1.3% |
| NP System        | ↘  | -5.8% | ↘  | -5.6% |
| NEDEC9           | ↘  | 4.2%  | ↘  | -8.1% |

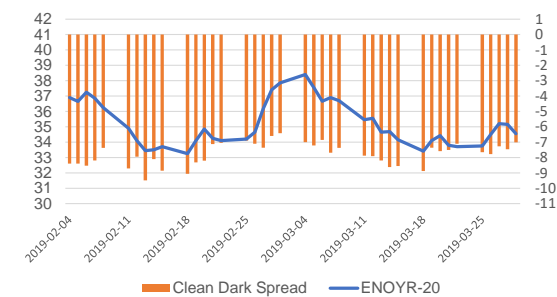
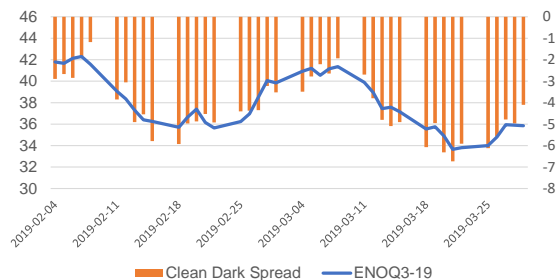
### DETERMINANTS AFFECTING THE MARKET ON WEEK 14

#### RESTRICTIONS IN PRODUCTION AND TRANSMISSION CAPACITY

Oililuoto 1 (890 MW), maintenance 30.3.-3.4.2019, available 530-770 MW  
 Ringhals 2 (904 MW), failure 27.12.-5.4.2019 and 23.-30.4.2019 available 452 MW, 5.-23.4.2019 available 0 MW  
 Ringhals 3 (1063 MW), maintenance 5.3.-30.4.2019 available 770 MW

FI-EE (1016 MW), failure 31.3.-8.4.2019 available 358 MW  
 SE3 - FI (1200 MW), maintenance 30.3-1.4.2019, available 0 MW, 5.-6.4.2019 available 400 MW  
 SE1 - FI (1500 MW), maintenance 5.-6.4.2019, available 400 MW

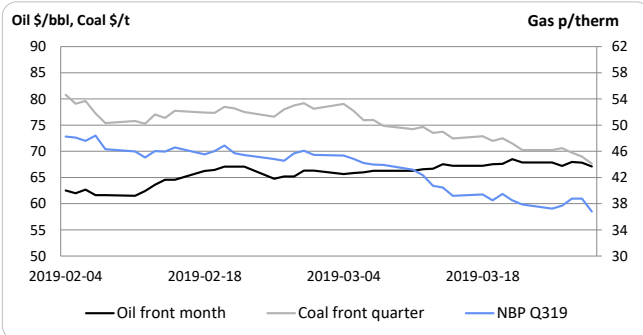
- Nordic nuclear power plants are currently operating at 93%  
 -RU-FI transfer profile varies due to capacity charges, on average imports from Russia last week were 65 % of the maximum.



#### AVERAGE SPOT PRICE AND EPAD

| Price area (€/MWh)      | 2012  | 2013  | 2014  | 2015  | 2016  | 2017  | 2018  | 2019* |
|-------------------------|-------|-------|-------|-------|-------|-------|-------|-------|
| NP System               | 31.20 | 38.10 | 29.60 | 21.00 | 26.91 | 29.41 | 43.99 | 46.79 |
| NP Area FI - NP System  | 5.50  | 3.10  | 6.40  | 8.70  | 5.54  | 3.78  | 2.81  | 0.66  |
| NP Area SE1 - NP System | 0.50  | 1.10  | 1.80  | 0.20  | 2.04  | 1.43  | 0.24  | -0.84 |
| NP Area SE2 - NP System | 0.60  | 1.10  | 1.80  | 1.00  | 2.04  | 1.43  | 0.24  | -0.84 |
| NP Area SE3 - NP System | 1.10  | 1.40  | 2.00  | 1.00  | 2.33  | 1.83  | 0.55  | -0.41 |
| NP Area SE4 - NP System | 3.00  | 1.80  | 2.30  | 1.90  | 2.62  | 2.77  | 2.37  | 0.00  |

\*Average for period between 1.1.2019-1.4.2019.



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 Source for data: intStream, Tilastokeskus

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