

### NORDIC ELECTRICITY MARKET

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## WET WEATHER BUT RISE IN EMISSION ALLOWANCES BUOYS UP ELECTRICITY MARKET

### Forecast to week 27:

ENOFUTBLQ4-19	↗ Bullish (>0%)
ENOYR-20	↗ Bullish (>0%)
NP System	↘ Bearish (<0%)
NEDEC9	↗ Bullish (>0%)

### FORECAST TO WEEK 27

#### ELECTRICITY DERIVATIVES

##### Front quarter

The weather forecasts were dry for the weekend after Friday's very rainy forecasts, which led to front quarter products taking a downturn on Friday. The forecasts are currently for wetter than normal, but with drier days on Tuesday and Wednesday. The weather will become damper towards the end of the week and next week will be near to the normal level. The hydro balance will remain unchanged at a level of around 3 TWh for the rest of the forecast period. We expect front quarter products to show a slight rise at the weekly level, but the direction is currently very sensitive to changes in the weather forecasts.

##### Annual products

The rise in emission allowance prices again to a level north of €27/t gives upward leverage for annual products. Also the price of coal has risen to above USD 65/t for the annual product. After Friday's correction of the week's rise in electricity annual products, we expect annual products to rise again during the current week and to remain up on the weekly level.

#### SPOT MARKET

Starting tomorrow, the temperature will fall to well below normal at the Nordic level and will remain low throughout the week. Also next week is forecast to be colder than normal, although the temperature will rise during the course of next week. Wind power production will be very high during the early part of the week and even though it tails off slightly during the week, it will still remain well above normal. After the high level early in the week, flow rates will continue to fall again to clearly below normal, which will improve the control of hydropower producers. Nuclear power production is decreasing as a result of maintenance work which is just starting.

At the weekly level, the SYS price is expected to fall and to settle at a level of around €28/MWh. The Finnish area price is expected to rise owing to maintenance of the Russian transmission link. This means the area price difference is expected to grow in Finland.

#### EMISSIONS

Emission allowance prices started the day on an upward note and once again exceeded the level of €27/t. However, emission allowance prices aren't expected to test the highest levels seen this spring, but to fluctuate on either side of €27/t during the course of the week. However, a rise may be seen at the weekly level.

### Market signals

	spot	Q4-19	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)
ENOFUTBLQ4-19	28.6.2019	36.80	-0.4%	-0.15
ENOFUTBLQ1-20	28.6.2019	41.95	1.3%	0.55
ENOFUTBLQ2-20	28.6.2019	33.75	3.4%	1.10
ENOFUTBLQ3-20	28.6.2019	29.17	4.5%	1.25
ENOYR-20	28.6.2019	35.65	2.7%	0.95
ENOYR-21	28.6.2019	33.70	0.7%	0.25
ENOYR-22	28.6.2019	33.00	0.5%	0.15
ENOYR-23	28.6.2019	32.73	0.1%	0.03
ENOYR-24	28.6.2019	32.10	-0.2%	-0.05
NEDEC9	28.6.2019	26.28	3.9%	0.99
NEDEC20	28.6.2019	26.61	3.9%	1.00

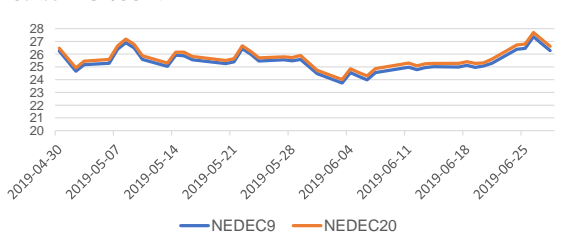
### EPAD settlements

28.6.2019 (€/MWh)	2019	2020	2021	2022
SYHEL	4.33	3.15	2.80	2.80
SE1-NP System	-2.65	-1.50	-2.25	-2.25
SE2 - NP System	-2.65	-1.50	-2.25	-2.25
SE3 - NP System	0.85	1.25	1.35	1.35
SE4 - NP System	2.88	2.60	2.60	2.60

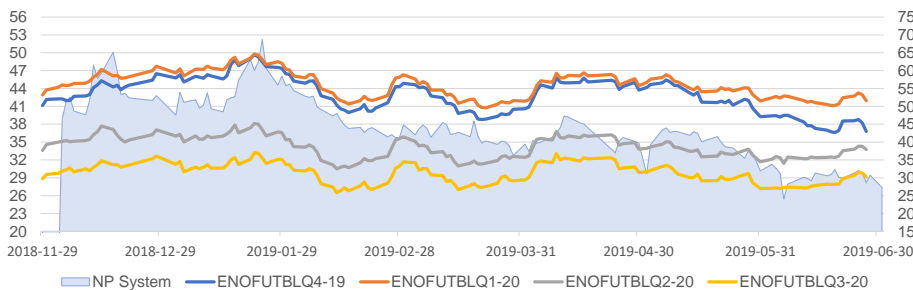
### Week's spot price change

Price area (€/MWh)	Date	Value	% chg	Chg (EUR)
NP System	30.6.2019	28.91	-1.6%	-0.48
NP Area FI	30.6.2019	33.36	23.2%	6.29
NP Area SE1	30.6.2019	27.58	6.2%	1.62
NP Area SE2	30.6.2019	27.58	6.2%	1.62
NP Area SE3	30.6.2019	27.58	6.2%	1.62
NP Area SE4	30.6.2019	27.58	6.2%	1.62

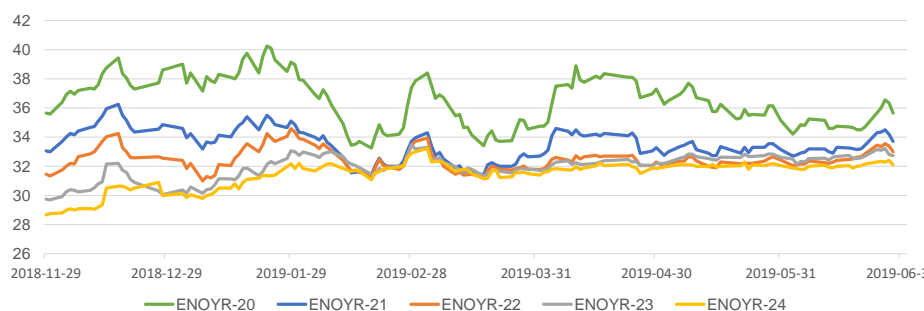
### Carbon EUR/CO2 t



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



Years EUR/MWh



### COMMENTS ON WEEK 26

#### ELECTRICITY DERIVATIVES

##### Front quarter

Front quarter products rose during the early part of last week driven by emission allowances and the dry weather type prevailing last week, but considerably damper weather forecasts for Friday with regard to this week saw front quarter products take a downturn on Friday. Q3-19 closed on a clear downward note to end in the lowest closing price this year. Following a considerable downturn on Friday, also Q4-19 was slightly down at the weekly level.

##### Annual products

Annual products rose last week driven by emission allowance prices, which peaked north of €27/t. Regarding fuels, the price of coal also remained at near USD 65/t. Towards the end of the week, the rise in the price level was interrupted as prices dipped slightly during Thursday along with those of emission allowances. Friday saw a clearer downward correction along with emission allowances, but even so remained clearly up at the weekly level.

#### SPOT MARKET

Last week the temperature was mostly higher than normal in the Nordic countries. The heatwave in Europe nevertheless largely failed to extend to as far as the Nordic countries. Last week's dry period kept flow rates considerably below normal for the time of year. Wind power production was quite low during the early part of the week. Towards Thursday, wind power production rose high and again during the weekend. Even though apart from Thursday, weekday prices settled at a level north of €30/MWh, the low price on Sunday meant that the system price ended in a minor fall at the weekly level. The Finnish area price rose considerably and broke away from Swedish prices. During weekdays, the Finnish price settled clearly higher than the system price. Even though the Finnish price undercut the system price during the weekend, at the weekly level the Finnish price settled clearly higher than the system price and Swedish prices.

#### EMISSIONS

A sharp upturn was seen in emission allowance prices first thing on Monday to reach a level of €26/t. On Wednesday, emission allowances were at the highest prices of the week and approached €27.5/t, from where they retreated towards the end of the week. Even though Friday closed at the lowest level of the week, the price of an emission allowance was up by around €1 at the weekly level.

### DETERMINANTS AFFECTING THE MARKET ON WEEK 27

#### RESTRICTIONS IN PRODUCTION AND TRANSMISSION CAPACITY

Ringhals 4 (1103 MW), maintenance 6.7.-27.8.2019, available 680 MW  
 Forsmark 1 (988 MW), maintenance 4.-5.7.2019, available 650 MW  
 Forsmark 3 (1167 MW), annual maintenance 30.6. - 16.7.2019, available 0 MW  
 Ringhals 1 (881 MW), maintenance 18.6. - 20.7.2019, available 750 MW

RU-FI (1300 MW), annual maintenance 30.6. - 31.7.2019, available 400 MW

- Current Nordic nuclear power plant utilization rate 89%
- RU-FI transfer profile varies due to capacity charges, with average import from Russia having been 45% of maximum last week

#### 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	41.07
NP Area FI - NP System	5.50	3.10	6.40	8.70	5.54	3.78	2.81	1.31
NP Area SE1 - NP System	0.50	1.10	1.80	0.20	2.04	1.43	0.24	-1.72
NP Area SE2 - NP System	0.60	1.10	1.80	1.00	2.04	1.43	0.24	-1.72
NP Area SE3 - NP System	1.10	1.40	2.00	1.00	2.33	1.83	0.55	-0.54
NP Area SE4 - NP System	3.00	1.80	2.30	1.90	2.62	2.77	2.37	1.31

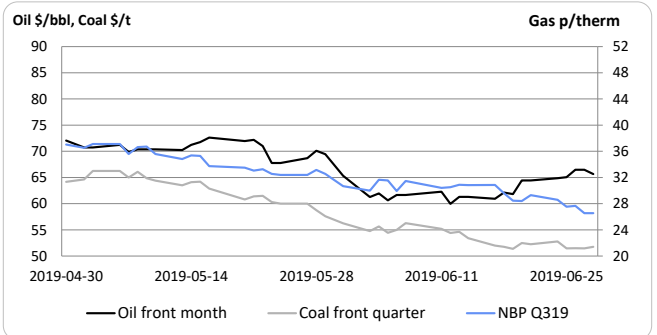
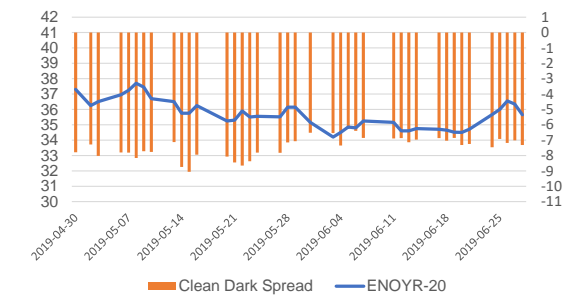
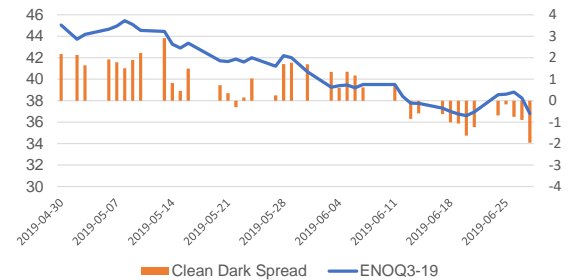
\*Average for period between 1.1.2019-1.7.2019.

Indicator	ENOFUTBLQ4-19	ENOYR-20
Coal-fired production	99 %	67 %
Coal price	50 %	21 %
Gas price (NBP)	70 %	46 %
German price level	58 %	60 %
Spot	59 %	34 %
Crude oil Brent	0 %	0 %
Water reservoirs	14 %	16 %
EUR/USD FX rate	8 %	9 %
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	26	Chg	25	Chg
ENOFUTBLQ4-19	↗	-0.4%	↘	-2.1%
ENOYR-20	↗	2.7%	↘	-0.1%
NP System	↗	-1.6%	↘	-4.6%
NEDEC9	↗	3.9%	↘	1.1%



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