

### NORDIC ELECTRICITY MARKET

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**WE EXPECT THE MARKET TO CONTINUE ON A SLIGHT BULLISH TRAJECTORY**

#### Forecast to week 46:

ENOFUTBLQ1-20	↗ Bullish (>0%)
ENOYR-20	↗ Bullish (>0%)
NP System	↘ Bearish (<0%)
NEDEC9	↗ Bullish (>0%)

#### FORECAST TO WEEK 46

### ELECTRICITY DERIVATIVES

#### Front quarter

The cold and dry weather type has ended. The first days of the week will be rainy and temperatures will rise to a level close to normal for the time of year after Monday. After the first days of the week, however, precipitation rates will fall and, on the whole, the two-week outlook period will be slightly drier than normal. Temperatures will remain close to the normal level. The weather picture is not providing the market with any strong signal, but the weather forecasts are for conditions slightly drier than seen on Friday and the hydro balance has fallen more clearly below the normal level. Technically, the market is also continuing on a bullish trajectory and we therefore expect the bullish trend to continue for the time being.

#### Annual products

The rising quarterly products and lower hydro balance are lending support to the front-year product. The front-year product has, however, already risen close to the strong resistance level of €39.0/MWh and the approach of the level may already be curbing any further upward pressure on the product. Fuel prices still remain weak, but the weather getting cooler broadly across Europe may bring support to fuel and emission allowance prices. We expect a slight rise in annual product prices.

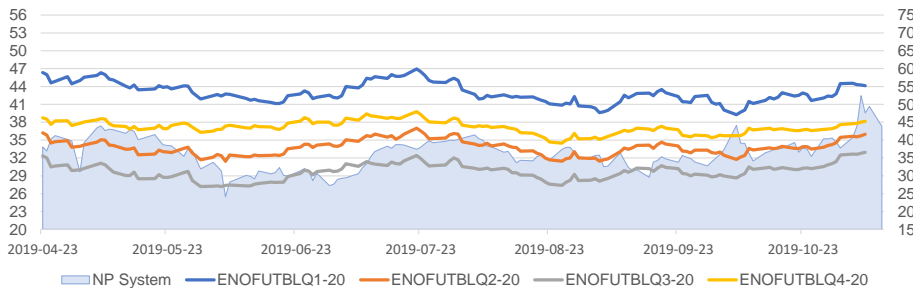
### SPOT MARKET

The weather is still cold for the time of year on Monday but will rise close to the normal level after Monday. Nordic wind power production will be abundant on Tuesday but will drop to a below-normal level after Tuesday. Flow rates will be below the normal level. The Forsmark 1 nuclear power unit will be on restricted output for the first half of the week. With the weather picture being considerably milder than last week, we expect the system price to fall at the weekly level and settle at an average of €41.5/MWh. Finnish wind power production will be variable over the week. From Tuesday evening until Wednesday midday, Finnish wind power production will be abundant, but the output will mostly be weaker than normal for the rest of the week. We expect the Finnish area price to fall at the weekly level and settle at an average of €47.0/MWh.

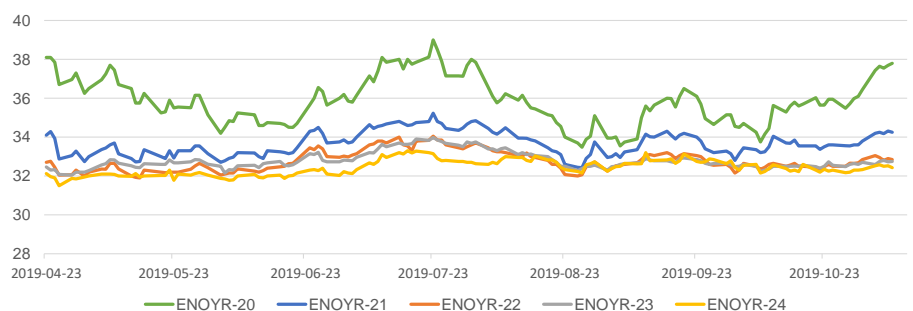
### EMISSIONS

The weather type will turn cooler than normal for the time of year in Central Europe, while at the same time wind conditions will mainly be weaker than normal. Auction volumes will also be lower than last week. We expect a slight hike in emission allowance prices.

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



Years EUR/MWh



#### Market signals

	spot	Q1-20	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)
ENOFUTBLQ1-20	8.11.2019	44.15	3.2%	1.38
ENOFUTBLQ2-20	8.11.2019	35.98	4.1%	1.43
ENOFUTBLQ3-20	8.11.2019	32.95	4.9%	1.55
ENOFUTBLQ4-20	8.11.2019	38.15	2.7%	1.00
ENOYR-20	8.11.2019	37.80	3.7%	1.35
ENOYR-21	8.11.2019	34.25	1.3%	0.45
ENOYR-22	8.11.2019	32.85	0.0%	0.00
ENOYR-23	8.11.2019	32.75	0.2%	0.05
ENOYR-24	8.11.2019	32.43	0.3%	0.10
NEDEC9	8.11.2019	24.83	-1.8%	-0.45
NEDEC20	8.11.2019	24.96	-2.0%	-0.50

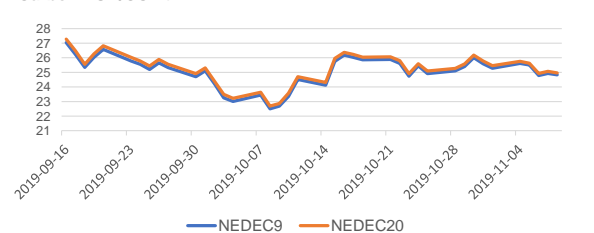
#### EPAD settlements

8.11.2019 (€/MWh)	2020	2021	2022	2023
SYHEL	7.25	4.85	3.63	3.75
SE1-NP System	-0.50	-1.50	-2.25	-2.25
SE2 - NP System	-0.55	-1.50	-2.25	-2.25
SE3 - NP System	1.90	1.25	1.35	1.35
SE4 - NP System	3.30	2.60	2.60	2.60

#### Week's spot price change

Price area (€/MWh)	Date	Value	% chg	Chg (EUR)
NP System	10.11.2019	45.41	16.8%	6.54
NP Area FI	10.11.2019	49.45	10.9%	4.88
NP Area SE1	10.11.2019	44.59	17.3%	6.57
NP Area SE2	10.11.2019	44.59	17.3%	6.57
NP Area SE3	10.11.2019	45.06	17.9%	6.83
NP Area SE4	10.11.2019	45.06	17.9%	6.83

#### Carbon EUR/CO2 t



COMMENTS ON WEEK 45

**ELECTRICITY DERIVATIVES**

**Front quarter**

Last week, quarterly products took a steep upturn on Monday, supported by the cold and dry weather picture. On Monday, further upward pressure was also created for quarterly products by the stronger technical picture as the front-quarter product rose above September's highest trading levels (€43.65/MWh). Consequently, the product's technical trend strengthened into a rise. After Monday, the rise of quarterly products calmed down, however, as the weather forecasts indicated that precipitation rates and temperatures would normalize in the following week.

**Annual products**

Last week, the front-year product rose in the wake of the dry and cold weather picture and the quarterly products. The technical picture of the front-year product also strengthened as the €36.3/MWh resistance level was broken, which boosted the upward pressure. Fuel prices continued to be weak, however, and emission allowance prices also declined. This meant that coal-fired profit margins continued to rise. On Friday, the Finnish nuclear operator TVO announced yet another delay in the commercial launch of its Olkiluoto 3 unit. According to the latest market message, the new commercial launch date is in September 2020.

**SPOT MARKET**

Last week the weather type was cold for the time of year and at the same time featuring low winds and dry conditions. Flow rates were also at a low level. Spot prices continued on a clear upward trajectory at the weekly level. Within the week, wind power production was at its weakest on Wednesday, which is when spot prices settled at their highest levels. On Monday, imports of electricity from Russia to Finland were high due to the Russian public holiday. After Monday, electricity imports from Russia dropped, but there is a break in capacity charges in November and electricity imports from Russia to Finland were high around midday. Finnish wind power production was mainly weak. The Finnish area price rose slightly less than the system price at the weekly level.

**EMISSIONS**

In the first half of last week, emission allowance prices were supported by Europe's colder weather picture and the continuously bullish stock market. On Wednesday, emission allowance prices took a clear downturn as auction results were weak. In the second half of the week, emission allowance prices were seeking direction but ended up being down at the weekly level.

Indicator	ENOFUTBLQ1-20	ENOYR-20
Coal-fired production	48 %	45 %
Coal price	17 %	10 %
Gas price (NBP)	19 %	5 %
German price level	15 %	30 %
Spot	9 %	11 %
Crude oil Brent	25 %	10 %
Water reservoirs	0 %	0 %
EUR/USD FX rate	10 %	8 %
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)

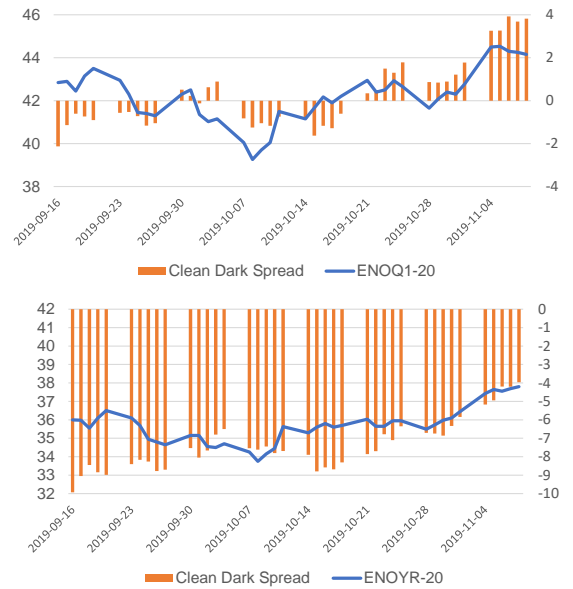
Forecast history	45	Chg	44	Chg
ENOFUTBLQ1-20	↗	3.2%	↘	0.3%
ENOYR-20	↗	3.7%	↘	1.4%
NP System	↗	16.8%	↗	6.6%
NEDEC9	↻	-1.8%	↘	1.4%

DETERMINANTS AFFECTING THE MARKET ON WEEK 46

**RESTRICTIONS IN PRODUCTION AND TRANSMISSION CAPACITY**

Ringhals 2 (852 MW), maintenance 7.9.-30.12.2019, in use 300 MW  
 Forsmark 2 (1118 MW), failure 1.-13.11.2019, in use 518 MW  
 Forsmark 1 (988 MW), maintenance 11.-13.11.2019, in use 430 MW

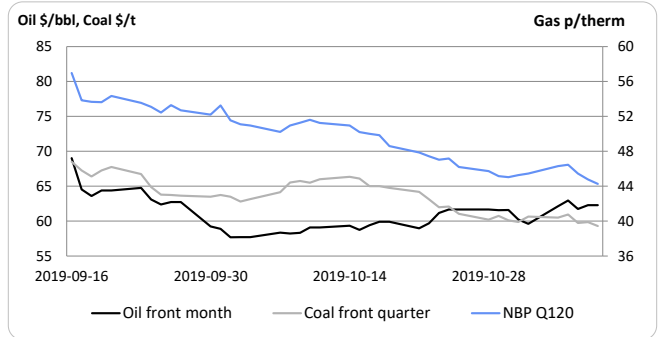
- Nordic nuclear power plants are currently operating at a capacity utilization rate of 86%
- RU-FI transmission profile varies due to capacity payments, average imports from Russia last week were 69% of the maximum



**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	38.99
NP Area FI - NP System	5.50	3.10	6.40	8.70	5.54	3.78	2.81	5.54
NP Area SE1 - NP System	0.50	1.10	1.80	0.20	2.04	1.43	0.24	-0.94
NP Area SE2 - NP System	0.60	1.10	1.80	1.00	2.04	1.43	0.24	-0.94
NP Area SE3 - NP System	1.10	1.40	2.00	1.00	2.33	1.83	0.55	-0.58
NP Area SE4 - NP System	3.00	1.80	2.30	1.90	2.62	2.77	2.37	0.99

\*Average for period between 1.1.2019-11.11.2019.



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 Source for data: intStream, Tilastokeskus

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