

NORDIC ELECTRICITY MARKET

2.9.2019 Markus Herranen, Gasum Portfolio Services Oy

WET WEATHER TYPE CONTINUES

Forecast to week 36:

ENOFUTBLQ4-19	📉 Bearish (<0%)
ENOYR-20	📉 Bearish (<0%)
NP System	📉 Bearish (<0%)
NEDEC9	📉 Bearish (<0%)

FORECAST TO WEEK 36

ELECTRICITY DERIVATIVES

Front quarter

The weather type will remain mainly wet, with the exception of a brief dry spell at the weekend. The hydro balance is continuing to increase and forecasts are already indicating that the balance is getting close to a rise over the long-term normal level. There are no clear signs in weather forecasts of any permanent high pressures. We expect quarterly product prices to fall.

Annual products

We expect the front-year product to drop because of the wet weather picture and weak quarterly products. Fuel prices are also still on downtrends despite last week's corrective move. Downward pressure on emission allowance prices is brought by the hike in auction supply. We expect a fall in annual product prices.

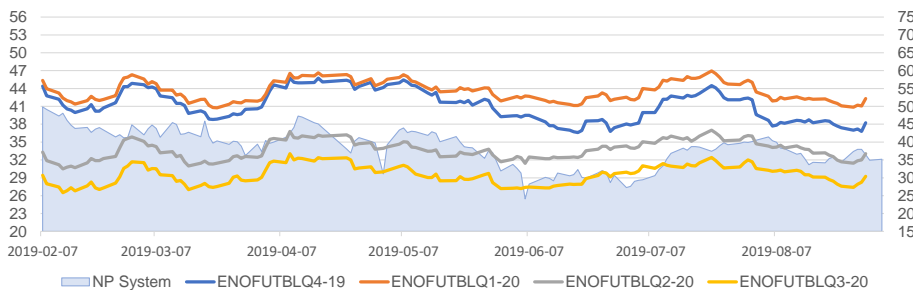
SPOT MARKET

The temperatures have dropped and the weather will turn slightly cooler than normal for the time of year. The weather type is wet and the rising hydro balance is exerting downward pressure on spot prices. Flow rates will also rise high in the second half of the week. Nordic wind power production will be mostly above normal for the business days of the week and, on Thursday in particular, wind power production levels will rise high. At the weekend, wind power production will decline to a low level. The downward pressure on spot prices is restricted considerably by weaker-than-normal nuclear power supply. We expect the system price to fall at the weekly level and to settle at an average of €34.5/MWh. In September, imports of electricity from Russia to Finland will increase slightly in the afternoon as there is a brief break in capacity charges. In Finland, wind power production will rise to a high level on Thursday and Friday, and by then both of the Loviisa nuclear power units will also be operational again. On Thursday and Friday the gap between the Finnish area price and the system price may narrow down, but at the weekly level we expect the Finnish area price to still differ considerably from the system price. We expect the Finnish area price to settle at an average of €48.0/MWh.

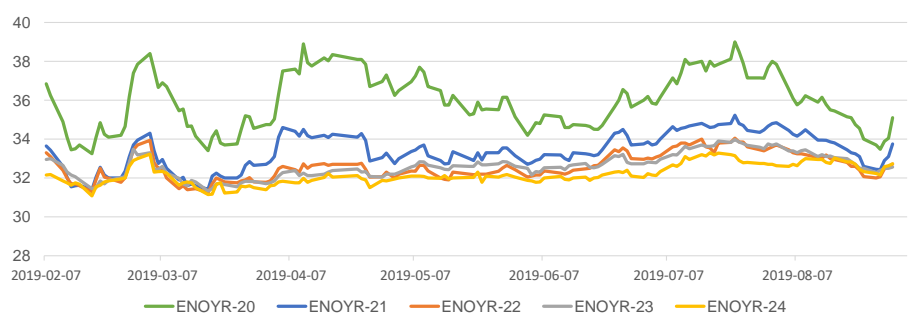
EMISSIONS

Emission allowance prices still remain technically weak despite last week's corrective move. In addition to the weak technical picture, downward pressure on the price may also be created by the end of the August holiday season in Europe and the subsequently increasing auction volumes. Fuel prices will also still remain weak, maintaining downward pressure on the German electricity market. We expect a fall in emission allowance prices.

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



Years EUR/MWh



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	30.8.2019	38.25	1.5%	0.55
ENOFUTBLQ1-20	30.8.2019	42.30	1.9%	0.80
ENOFUTBLQ2-20	30.8.2019	33.05	3.4%	1.08
ENOFUTBLQ3-20	30.8.2019	29.26	4.7%	1.31
ENOYR-20	30.8.2019	35.10	3.2%	1.10
ENOYR-21	30.8.2019	33.75	3.5%	1.15
ENOYR-22	30.8.2019	32.72	2.0%	0.65
ENOYR-23	30.8.2019	32.56	0.2%	0.06
ENOYR-24	30.8.2019	32.73	1.2%	0.40
NEDEC9	30.8.2019	26.34	5.0%	1.26
NEDEC20	30.8.2019	26.59	4.9%	1.24

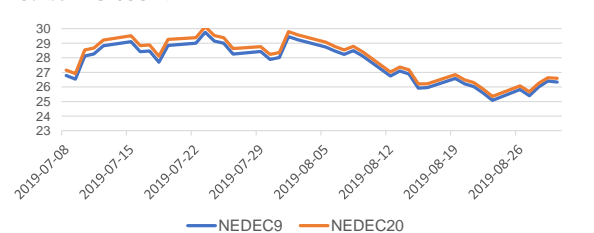
EPAD settlements

30.8.2019 (€/MWh)	2020	2021	2022	2023
SYHEL	6.68	3.85	3.55	3.85
SE1-NP System	-1.25	-1.50	-2.25	-2.25
SE2 - NP System	-1.25	-1.50	-2.25	-2.25
SE3 - NP System	1.58	1.25	1.35	1.35
SE4 - NP System	3.13	2.60	2.60	2.60

Week's spot price change

Price area (€/MWh)	Date	Value	% chg	Chg (EUR)
NP System	1.9.2019	35.43	3.0%	1.02
NP Area FI	1.9.2019	50.42	5.4%	2.58
NP Area SE1	1.9.2019	37.70	8.1%	2.82
NP Area SE2	1.9.2019	37.70	8.1%	2.82
NP Area SE3	1.9.2019	38.09	9.2%	3.21
NP Area SE4	1.9.2019	38.09	9.2%	3.21

Carbon EUR/CO₂ t



COMMENTS ON WEEK 35

ELECTRICITY DERIVATIVES

Front quarter

In the first days of last week, quarterly products continued on a clear downward trajectory. Downward pressure on quarterly products was maintained by the weather picture turning wet and the consequent considerable rise in the hydro balance. Towards the end of the week, however, an upward corrective move was seen in quarterly products. The corrective move was spurred by signs of drier weather towards the end of the first week of September. Fuel and emission allowance prices also took an upturn. Following the corrective move towards the end of the week, at the weekly level the quarterly products ended up on a slight upward trajectory.

Annual products

Annual product prices fell in the first days of last week in the wake of quarterly products. The downtrends of fuel prices also continued. Emission allowance prices did, however, take an upturn from the support level and the general market mood turned more positive in response to the easing of trade war concerns. The more optimistic sentiment also resulted in a recovery in fuel prices in the second half of the week. Consequently, annual product prices took an upturn and ended on an upward trajectory at the weekly level.

SPOT MARKET

The system price rose last week. Spot prices were supported by weak wind power production in the first days of the week. Spot prices were also supported by the brief dry spell, which kept flow rates low in the first half of the week. After Thursday, wind power production exceeded the normal level again and flow rates also increased. Their impact was, however, limited by nuclear power production being scater as the Ringhals 4 and Oskarshamn 3 units were down for annual maintenance. The Finnish area price remained considerably above the Swedish area prices and at the weekly level the Finnish area price increased more than the system price.

EMISSIONS

Last week there was an upturn in emission allowance prices as the closest support levels held. The price was also supported by the more optimistic market mood as the trade war concerns eased slightly. The more optimistic mood also resulted in an upturn in the German electricity market, helping boost emission allowance prices, too.

Indicator	ENOFUTBLQ4-19	ENOYR-20
Coal-fired production	76 %	63 %
Coal price	43 %	4 %
Gas price (NBP)	64 %	24 %
German price level	14 %	56 %
Spot	37 %	13 %
Crude oil Brent	53 %	13 %
Water reservoirs	3 %	1 %
EUR/USD FX rate	0 %	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	35	Chg	34	Chg
ENOFUTBLQ4-19	↓	1.5%	↓	-2.7%
ENOYR-20	↓	3.2%	↻	-4.1%
NP System	↑	3.0%	↑	0.1%
NEDEC9	↓	5.0%	↑	-3.4%

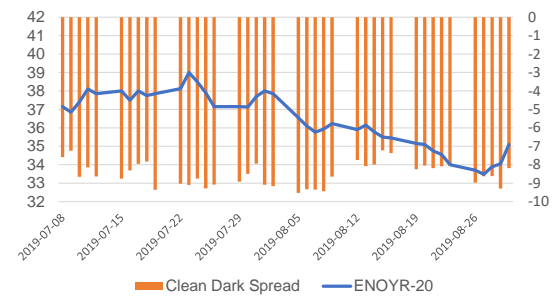
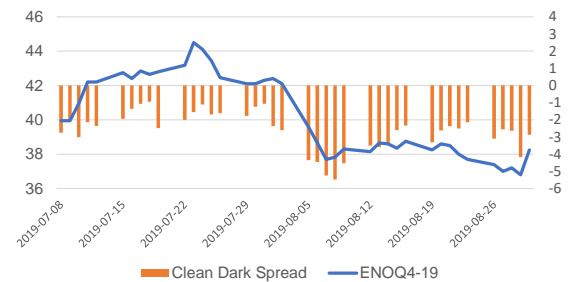
DETERMINANTS AFFECTING THE MARKET ON WEEK 36

RESTRICTIONS IN PRODUCTION AND TRANSMISSION CAPACITY

Loviisa 1 (507 MW), maintenance 7 - 25.9.2019, 0 MW in use
 Loviisa 2 (507 MW), maintenance 18.8 - 4.9.2019, 0 MW in use
 Ringhals 4 (1103 MW), maintenance 28.8.-1.10.2019 0 MW in use
 Oskarshamn 3 (1400 MW), maintenance 30.8.-23.9.2019 0 MW in use

NO1-SE3 (2145 MW), maintenance 30.7 – 18.10.2019, 1845 MW in use
 SE1-FI (1500 MW), maintenance 4.-6.9.2019, in use 1400 MW
 RU-FI (1300 MW), maintenance 8.-29.9.2019, in use 1100 MW

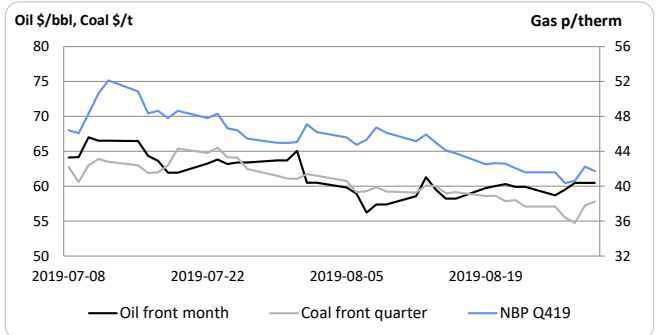
- Nordic nuclear power plants are currently operating at a capacity utilization rate of 75%
- RU-FI transmission profile varies due to capacity payments, average imports from Russia last week were 48% of the maximum



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	39.74
NP Area FI - NP System	5.50	3.10	6.40	8.70	5.54	3.78	2.81	3.94
NP Area SE1 - NP System	0.50	1.10	1.80	0.20	2.04	1.43	0.24	-1.20
NP Area SE2 - NP System	0.60	1.10	1.80	1.00	2.04	1.43	0.24	-1.20
NP Area SE3 - NP System	1.10	1.40	2.00	1.00	2.33	1.83	0.55	-1.01
NP Area SE4 - NP System	3.00	1.80	2.30	1.90	2.62	2.77	2.37	0.22

*Average for period between 1.1.2019-2.9.2019.



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