

NORDIC ELECTRICITY MARKET

3.6.2019 Markus Herranen, Gasum Portfolio Services Oy

BOTH FUNDAMENTALS AND TECHNICAL ANALYSIS POINT TO CONTINUED DOWNWARD TREND

Forecast to week 23:

ENOFUTBLQ3-19	⬇ Bearish (<0%)
ENOYR-20	⬇ Bearish (<0%)
NP System	⬇ Bearish (<0%)
NEDEC9	⬇ Bearish (<0%)

FORECAST TO WEEK 23

ELECTRICITY DERIVATIVES

Front quarter

The weather type has been wet and the hydro balance has risen considerably. During the current week, the weather will as a general rule continue to be wetter than normal and next week is also likely to see a slightly wetter start than normal. Weather forecasts for next week show slightly drier conditions towards the end of the week, but for the time being it appears unlikely for the weather type to turn permanently dry. Technically the market is on a downward trajectory and the downward pressure is strengthened by weak fuels. We expect quarterly product prices to continue to fall.

Annual products

Coal and natural gas prices are still in strong downward trends and so far there are no clear signs of the trends turning. Downward pressure is also created by the strong decline of oil price and the tensions between the U.S. and China. In addition, the weak price of natural gas and political uncertainty put downward pressure on emission allowance prices. We expect a fall in annual product prices.

SPOT MARKET

Temperatures have risen to a level that is above normal for the time of year and the weather will continue to get warmer towards Thursday. After Thursday, temperatures will fall again but remain warmer than normal for the rest of the week, too. Nordic wind power production is mainly close to the normal level. Flow rates will take an upturn after the first days of the week and rise high towards the end of the week. In Finland, wind power production will be very abundant on Tuesday but weak on Wednesday. Finnish wind power production will be close to the normal level during the rest of the week. The Olkiluoto 1 nuclear power plant unit is undergoing annual maintenance and the interconnection between Finland and Southern Sweden has restricted capacity. We expect the system price to fall slightly at the weekly level and to settle at an average of €31.5/MWh. We expect the Finnish area price to rise and settle at an average of €38.5/MWh.

EMISSIONS

The weak fuel prices and declining electricity market create downward pressure on emission allowance prices. Also the technical picture for emission allowance prices has taken a downturn over the short term as the closest technical support level for the price (€24.35 €/t) was broken on Monday. Downward pressure on emission allowance prices is also created by the political uncertainty relating to dealing with Brexit. Downward pressure is also created by falling share indices. We expect a fall in emission allowance prices.

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	31.5.2019	35.75	-4.2%	-1.55
ENOFUTBLQ4-19	31.5.2019	40.70	-3.1%	-1.30
ENOFUTBLQ1-20	31.5.2019	43.00	-2.2%	-0.95
ENOFUTBLQ1-21	31.5.2019	40.28	0.3%	0.13
ENOYR-20	31.5.2019	35.15	-1.1%	-0.40
ENOYR-21	31.5.2019	33.15	-0.5%	-0.15
ENOYR-22	31.5.2019	32.43	0.7%	0.23
ENOYR-23	31.5.2019	32.61	-0.2%	-0.07
ENOYR-24	31.5.2019	32.05	-0.2%	-0.05
NEDEC9	31.5.2019	24.48	-3.8%	-0.98
NEDEC20	31.5.2019	24.73	-3.8%	-0.98

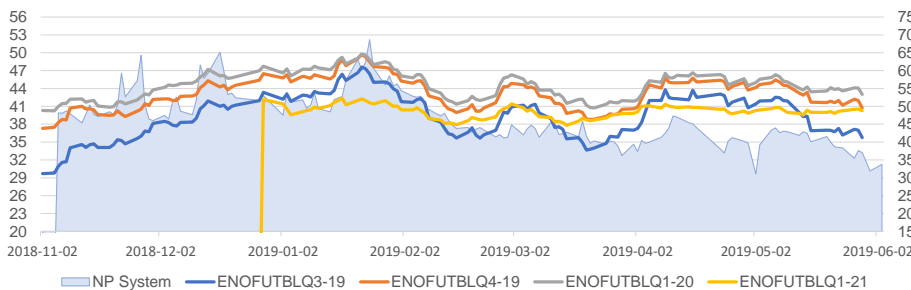
EPAD settlements

31.5.2019 (€/MWh)	2019	2020	2021	2022
SYHEL	4.10	3.25	3.45	3.50
SE1-NP System	-1.25	-2.00	-2.00	-2.00
SE2 - NP System	-1.25	-2.00	-2.00	-2.00
SE3 - NP System	1.25	1.28	1.30	1.50
SE4 - NP System	2.75	2.75	2.75	2.75

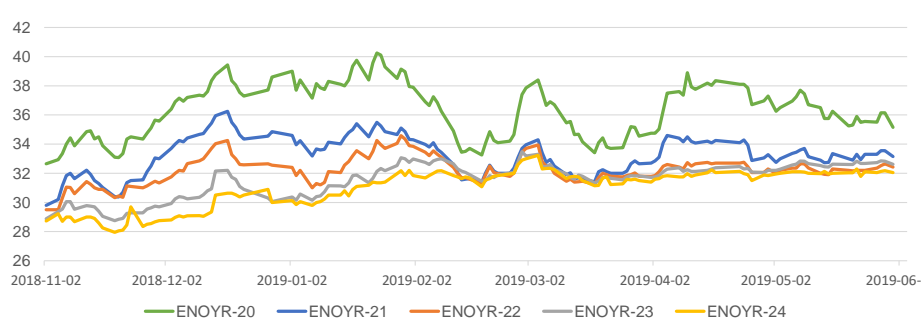
Week's spot price change

Price area (€/MWh)	Date	Value	% chg	Chg (EUR)
NP System	2.6.2019	32.42	-13.5%	-5.07
NP Area FI	2.6.2019	29.65	-36.0%	-16.68
NP Area SE1	2.6.2019	25.75	-31.2%	-11.70
NP Area SE2	2.6.2019	25.75	-31.2%	-11.70
NP Area SE3	2.6.2019	25.75	-31.2%	-11.70
NP Area SE4	2.6.2019	25.75	-31.2%	-11.70

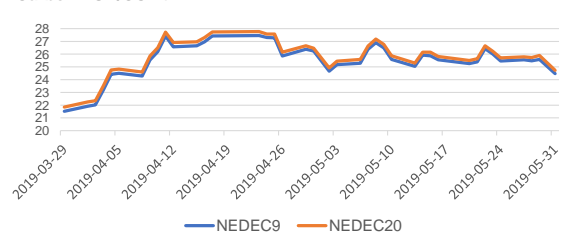
Quarters EUR/MWh (left), NP System EUR/MWh (right)



Years EUR/MWh



Carbon EUR/CO2 t



COMMENTS ON WEEK 22

ELECTRICITY DERIVATIVES

Front quarter

Last week, quarterly products continued on a downward path as the weather was rainy and the hydro balance continued to rise. Weather forecasts were also mainly rainier than normal for the following week, but downward pressure was limited by the potential drying of the weather type towards the end of the following week. However, downward pressure was strengthened by weak fuel prices and also emission allowance prices that had taken a downturn.

Annual products

Last week, annual products rose slightly during the first days of the week as the fall of fuel prices calmed down. However, towards the end of the week annual products took a slight downturn as weak development continued again in fuel prices and emission allowance prices also took a downturn. Downward pressure on the front-year product was also created by the hydro balance having risen, the quarterly products having fallen and weather forecasts being for high precipitation levels. At the weekly level, annual products remained mainly on a slight downward trajectory.

SPOT MARKET

The weather was quite wet and cool for the time of year last week until the end of the week when temperatures rose close to the normal level. Owing to the cool weather, melting slowed down and flow rates dropped below normal. Downward pressure on spot prices was, however, created by the higher level of nuclear power production. Nordic wind power production was also mostly above normal and, on Thursday in particular, the wind power production levels rose high. At the same time, Ascension Day public holiday decreased electricity demand and spot prices settled low on Thursday. Spot prices also settled low at the weekend as wind power production was abundant. The Finnish area price settled lower than the system price at the weekly level. The Finnish area price did, however, deviate from the Swedish area prices.

EMISSIONS

Last week, emission allowance prices were seeking direction during the first days of the week. They were supported by the scarce auction supply, and the decline seen in fuel prices also halted. Towards the end of the week, however, fuel prices and the electricity market took another downturn. Emission allowance prices also fell towards the end of the week and remained on a downward trajectory at the weekly level. Last week, downward pressure on emission allowance prices was also brought by increasing political uncertainty following May's resignation announcement. In addition, concerns about the trade war maintained a nervous market sentiment and share indices fell.

Indicator	ENOFUTBLQ3-19	ENOYR-20
Coal-fired production	41 %	58 %
Coal price	5 %	13 %
Gas price (NBP)	5 %	14 %
German price level	6 %	24 %
Spot	23 %	29 %
Crude oil Brent	3 %	8 %
Water reservoirs	1 %	7 %
EUR/USD FX rate	6 %	10 %
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	22	Chg	21	Chg
ENOFUTBLQ3-19	📉	-4.2%	📉	-5.2%
ENOYR-20	📉	-1.1%	📉	-1.9%
NP System	📉	-13.5%	📉	-4.3%
NEDEC9	🔄	-3.8%	🔄	-0.4%

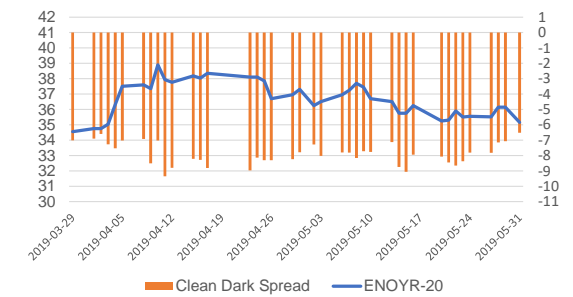
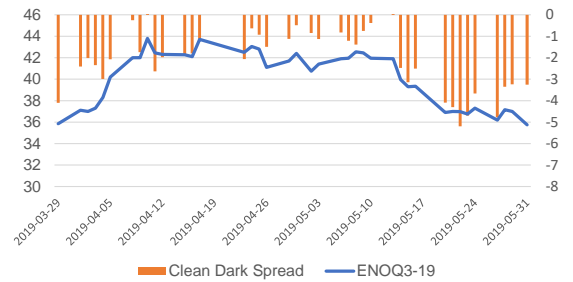
DETERMINANTS AFFECTING THE MARKET ON WEEK 23

RESTRICTIONS IN PRODUCTION AND TRANSMISSION CAPACITY

Ringhals 3 (1063 MW), failure 3.-4.6.2019, available 0 MW
 Olkiluoto 1 (890 MW), yearly maintenance 2.-11.6.2019, available 0 MW

SE3-FI (1200 MW), maintenance 26.5.-9.6.2019, available 600 MW

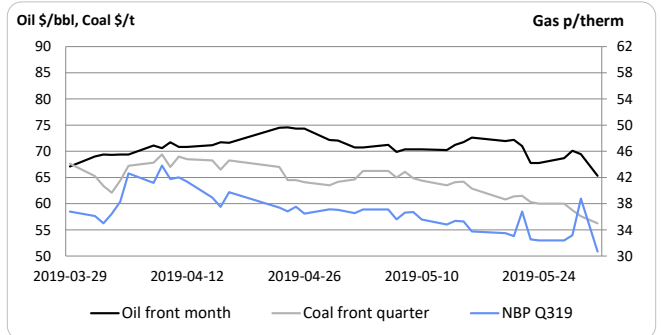
-The utilization rate of Nordic nuclear power plants is currently 75%
 -RU-FI transfer profile varies due to capacity charges, average import from Russia last week was 51% of maximum



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	43.61
NP Area FI - NP System	5.50	3.10	6.40	8.70	5.54	3.78	2.81	1.56
NP Area SE1 - NP System	0.50	1.10	1.80	0.20	2.04	1.43	0.24	-1.23
NP Area SE2 - NP System	0.60	1.10	1.80	1.00	2.04	1.43	0.24	-1.23
NP Area SE3 - NP System	1.10	1.40	2.00	1.00	2.33	1.83	0.55	-0.97
NP Area SE4 - NP System	3.00	1.80	2.30	1.90	2.62	2.77	2.37	-0.47

*Average for period between 1.1.2019-3.6.2019.



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 Source for data: intStream, Tilastokeskus

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