

NORDIC ELECTRICITY MARKET

18.5.2020 Markus Herranen, Gasum Portfolio Services Oy

ANNUAL PRODUCTS SUPPORTED BY STRONGER FUELS

Forecast to week 21:	
ENOFUTBLQ3-20	↗ Bullish (>0%)
ENOYR-21	↗ Bullish (>0%)
NP System	↗ Bullish (>0%)
NEDEC20	↗ Bullish (>0%)

Market signals			
	spot	Q3-20	YR-21
Hydrologic balance	↑	↑	↑
Precipitation forecast	→	→	→
Temperature forecast	↑	→	→
Spot	↓	↑	→
Production and transmission exch.	→	→	→
Emissions allowance	↑	↑	↑
Coal price	↑	↑	↑
German prices	→	→	↑
Technical analysis	↓	→	→

FORECAST TO WEEK 21

POWER FUTURES

Front quarter

The week will get off to a very dry start, but precipitation rates will rise momentarily to above-normal levels towards the end of the week. Next week's weather forecasts still involve major uncertainties, but precipitation rates are likely to be close to normal. The hydro balance will decrease slightly over the two-week forecast period. Over the short term, quarterly products will be stronger and supported by the prevailing spot price level. We expect quarterly products to remain on a slight upward trajectory.

Annual products

Oil prices have strengthened considerably, and the stronger oil prices are also lending support to coal and natural gas prices. The general market sentiment is more confident again, and stock indices recovered to a clear upturn on Monday. We expect annual products to also climb due to the stronger sentiment and fuel prices.

SPOT MARKET

The weather is still considerably colder than normal for the time of year. Temperatures will rise towards the end of the week, but the weather will still remain cooler than normal during the current week. Due to the cool conditions, melting is still slow and flow rates remain low. Nordic wind power production will mainly be below normal during the business week and drop clearly below the normal level on Wednesday and Thursday in particular. On Friday and at the weekend, wind power production will be close to the normal level. We expect the system price to continue to rise at the weekly level and to settle at an average of €13.5/MWh. The annual maintenance of the Olkiluoto 2 nuclear power plant unit has been prolonged. The plant is due to be operational again on Tuesday, and the unit is expected to reach normal production on Friday. Finnish wind power production will be weak during the first days of the week, and the Finnish area price rose high on Monday morning. With Finnish wind power output and nuclear power production increasing, we expect the Finnish area price to approach the system price towards the end of the week. We expect the Finnish area price to rise slightly at the weekly level and settle at an average of 24.5 €/MWh.

EMISSIONS

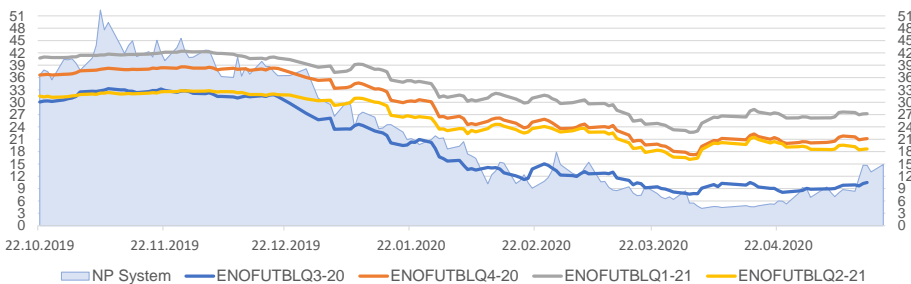
Emission allowance prices are supported by rising fuel prices, which are also lending support to the German power market. The general market sentiment is also positive and stock indices have taken an upturn again. We expect a hike in emission allowance prices.

Product	Date	Value	% chg	Chg (EUR)
ENOFUTBLQ3-20	15.5.2020	10.50	11.1%	1.05
ENOFUTBLQ4-20	15.5.2020	21.15	-1.6%	-0.35
ENOFUTBLQ1-21	15.5.2020	27.20	-1.1%	-0.30
ENOFUTBLQ2-21	15.5.2020	18.65	-4.4%	-0.85
ENOYR-21	15.5.2020	22.00	-2.9%	-0.66
ENOYR-22	15.5.2020	24.80	-3.3%	-0.85
ENOYR-23	15.5.2020	26.90	-2.7%	-0.75
ENOYR-24	15.5.2020	27.75	-1.7%	-0.48
ENOYR-25	15.5.2020	28.75	-1.5%	-0.43
NEDEC20	15.5.2020	19.19	-0.9%	-0.17
NEDEC20	15.5.2020	19.19	-0.9%	-0.17

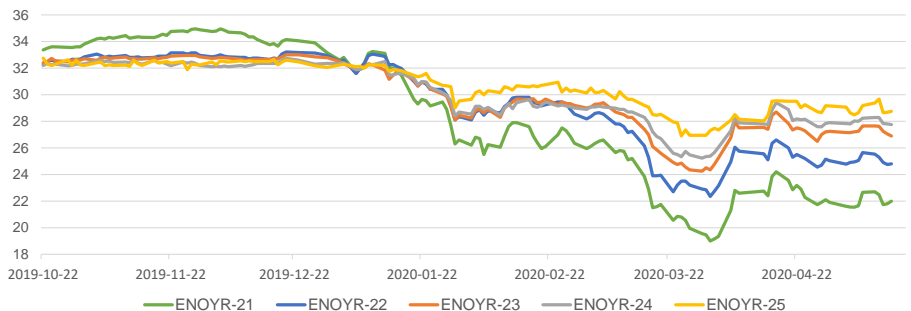
EPAD settlements			
15.5.2020 (€/MWh)	2021	2022	2023
SYHEL	8.80	5.13	4.00
SE1- NP System	-1.50	-2.25	-2.25
SE2 - NP System	-1.50	-2.25	-2.25
SE3 - NP System	1.25	1.35	1.35
SE4 - NP System	2.60	2.60	2.60

Week's spot price change				
Price area (€/MWh)	Date	Value	% chg	Chg (EUR)
NP System	17.5.2020	11.61	42.4%	3.45
NP Area FI	17.5.2020	22.50	35.1%	5.85
NP Area SE1	17.5.2020	11.10	46.4%	3.52
NP Area SE2	17.5.2020	11.10	46.4%	3.52
NP Area SE3	17.5.2020	15.10	24.2%	2.95
NP Area SE4	17.5.2020	15.10	24.2%	2.95

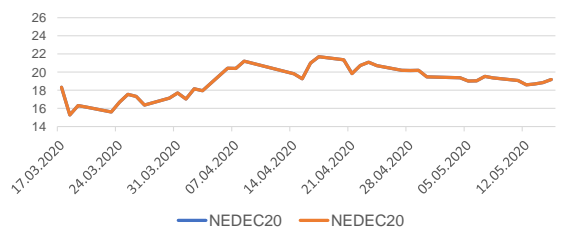
Quarters EUR/MWh (left), NP System EUR/MWh (right)



Years EUR/MWh



Carbon EUR/CO2 t



COMMENTS ON WEEK 20

POWER FUTURES

Front quarter

Last week, quarterly products climbed due to the dry weather and lower hydro balance. As the week progressed, the weather forecasts for the week ahead also got drier and indicated that a drier-than-normal overall weather type would prevail. Quarterly products were also supported by the clearly higher spot prices.

Annual products

Last week, annual products continued their movements within a rather narrow range. There were no major changes at the weekly level in coal, natural gas or emission allowance prices. The general market sentiment was more nervous, as concerns about the coronavirus epidemic and the state of the economy pushed stock indices down. Oil prices continued to rise, however, as price support was maintained by expectations of market balancing. Annual products ended up on a slight downward trajectory at the weekly level.

SPOT MARKET

Last week was clearly cooler than normal for the time of year, with melting delayed further and flow rates clearly lower than normal for the time of year. Support for spot prices was also provided by the dry weather forecasts and the continued fall of the hydro balance. The system price rose at the weekly level, but the upward pressure was restricted by wind power production being mostly higher than normal. In Finland, nuclear power production declined as the annual maintenance outage of the Olkiluoto 2 unit began. Finnish wind power production was weak on Tuesday and Wednesday, which is when the intraweek spot prices were the highest. The Finnish area price rose more at the weekly level than the system price.

EMISSIONS

Last week, emission allowance prices dropped in the wake of the weaker general market sentiment, weak fuel prices and the German power market. Towards the end of the week, the market sentiment strengthened, lending support to fuel prices. At the same time, emission allowance prices also strengthened. At the weekly level, however, emissions ended up on a slight downward trajectory.

Indicator	ENOFUTBLQ3-20	ENOYR-21
Coal-fired production	82 %	92 %
Coal price	85 %	78 %
Gas price (NBP)	90 %	86 %
German price level	6 %	85 %
Spot	96 %	88 %
Crude oil Brent	69 %	83 %
Water reservoirs	92 %	81 %
EUR/USD FX rate	30 %	34 %
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)

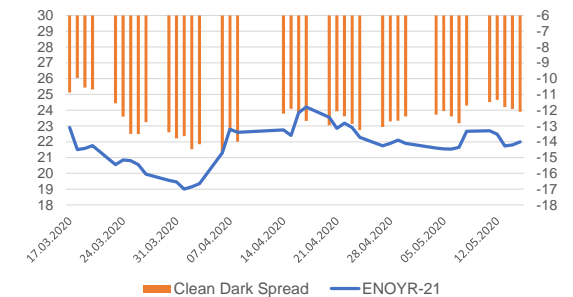
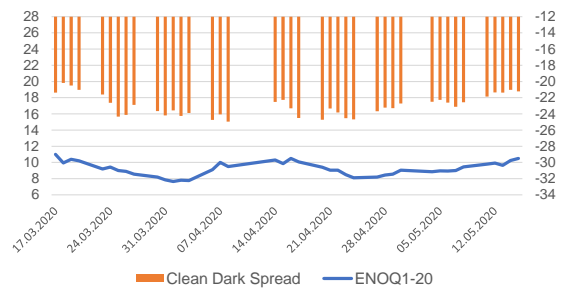
Forecast history	20	Chg	19	Chg
ENOFUTBLQ3-20	↗	11.1%	↻	10.5%
ENOYR-21	↻	-2.9%	↘	2.5%
NP System	↗	42.4%	↗	-1.8%
NEDEC20	↘	-0.9%	↘	-4.2%

DETERMINANTS AFFECTING THE MARKET ON WEEK 21

RESTRICTIONS IN PRODUCTION AND TRANSMISSION CAPACITY

- Olkiluoto 2 (890 MW), maintenance 10.-22.5.2020, in use 0 MW
- Forsmark 2 (1120 MW), 3.5.-26.6.2020, maintenance, in use 0 MW
- Olkiluoto 1 (890 MW) 8.4.-24.5.2020 failure, in use 836 MW, maintenance 24.5-7.6.2020, in use 0 MW
- Ringhals 3 (1063 MW) 5.4-10.6.2020 maintenance, in use 0 MW
- Ringhals 1 (881 MW), 13.3.-30.9.2020 maintenance, in use 0 MW

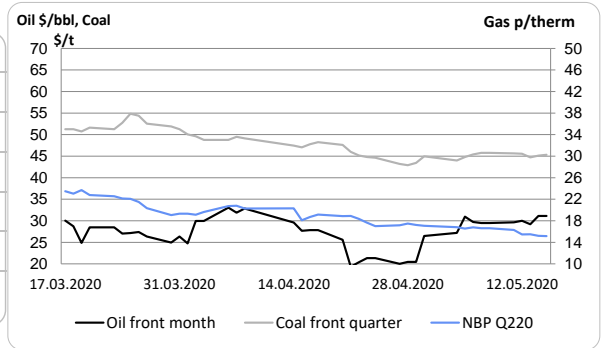
- Nordic nuclear power plants are currently operating at a capacity utilization rate of 64%
- RU-FI transmission profile varies due to capacity payments, average imports from Russia last week were 7 % of the maximum



AVERAGE SPOT PRICE AND EPAD

Price area (€/MWh)	2012	2013	2014	2015	2016	2017	2018	2019	2020*
NP System	31.20	38.10	29.60	21.00	26.91	29.41	43.99	38.94	12.49
NP Area FI - NP System	5.50	3.10	6.40	8.70	5.54	3.78	2.81	5.10	9.98
NP Area SE1 - NP System	0.50	1.10	1.80	0.20	2.04	1.43	0.24	-1.00	0.02
NP Area SE2 - NP System	0.60	1.10	1.80	1.00	2.04	1.43	0.24	-1.00	0.02
NP Area SE3 - NP System	1.10	1.40	2.00	1.00	2.33	1.83	0.55	-0.58	3.35
NP Area SE4 - NP System	3.00	1.80	2.30	1.90	2.62	2.77	2.37	0.86	5.52

*Average for period between 1.1.2020-18.5.2020.



Copyright 2020 Gasum Oy – All rights reserved
Source for data: intStream, Tilastokeskus

Disclaimer: This document is issued by Gasum Oy in jointly by its subsidiaries Gasum Portfolio Services Oy and intStream Oy. The information in this document, which is for private circulation only, was obtained from sources believed to be reliable but its accuracy or completeness cannot be guaranteed. No liability whatsoever is accepted for any direct or consequential loss arising from the use of this document. This document is not intended for the use of private customers. Do not distribute. If you received this from a third party that is not affiliated to Gasum Oy, please let us know. For all inquiries and notifications, contact us at