

NORDIC ELECTRICITY MARKET

17.5.2021 Markus Herranen, Gasum Portfolio Services Oy

WEATHER FORECASTS SHOW POSSIBLE SIGNS OF TURNING TO DRY AFTER NEXT WEEK

Forecast to week 20:	
ENOFUTBLQ3-21	↗ Bullish (>0%)
ENOFUTBLR-22	↗ Bullish (>0%)
NP System	↗ Bullish (>0%)
NEDEC21	↗ Bullish (>0%)

FORECAST TO WEEK 20

POWER FUTURES

Front quarter

The weather forecasts have dried during the weekend. This week's weather will be slightly wetter than normal, but the forecasts show possible signs of the weather type turning to dry after next week. It is still very uncertain whether the turn to dry weather will more permanent, but we expect near products to rise. Strong fuel and emission allowance prices are also buoying up support for near products.

Annual products

Possible signs of a turn to a dry weather type are bringing support also for annual products. Emission allowance and fuel prices are still showing very strong upward trends. In addition, the very strong German electricity market is maintaining support for annual products. We expect annual products to rise.

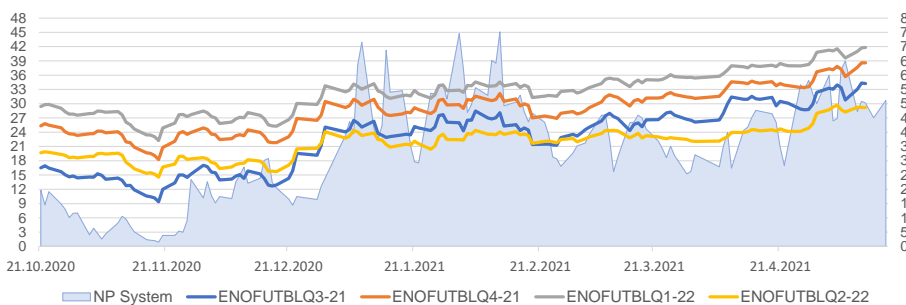
SPOT MARKET

Temperatures have fallen from last week's level and during the current week temperatures will be largely slightly lower than normal for the time of year. However, Norwegian Constitution Day on Monday meant less demand for electricity. Nordic wind power production will be weak during the first half of this week but will approach the normal level in the second half of the week. Higher than normal flow rates will fall to near normal after the early part of the week. Wind power production in Finland will rise to near normal in the second half of the week. The Olkiluoto 2 unit is undergoing annual maintenance. We expect the system price to show a slight rise at the weekly level and to settle at an average level of €46.0/MWh. We expect the Finnish area price to rise more than the system price and to settle at an average level of €51.5/MWh.

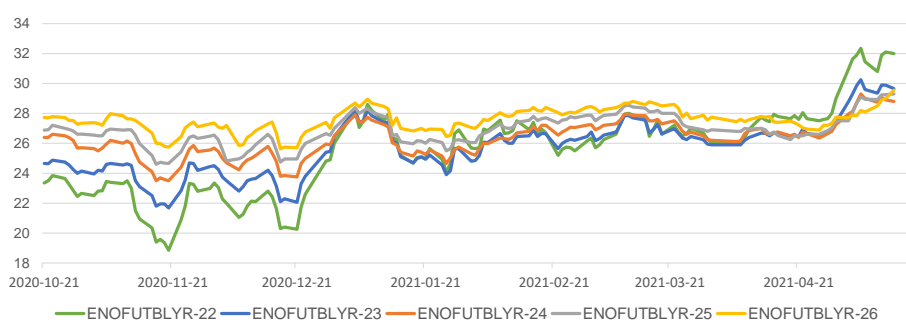
EMISSIONS

Auction availability will rise to normal levels during the current week, increasing availability compared to last week. The weather in Europe is likely to remain cooler than normal. The start of UK ETS auctions and trading in futures is expected on Thursday and this could add to market movements also on the EU emission markets. The market is technically very strong, and the technical indicators show the market to be overbought, which in addition to increased volatility could also herald a technical correction. We expect the emission allowance price to continue to show a slight rise.

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



Years EUR/MWh



Market signals

	spot	Q3-21	YR-22
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)
ENOFUTBLQ3-21	14.5.2021	34.25	2.7%	0.90
ENOFUTBLQ4-21	14.5.2021	38.60	3.6%	1.35
ENOFUTBLQ1-22	14.5.2021	41.83	3.0%	1.23
ENOFUTBLQ2-22	14.5.2021	29.18	1.5%	0.43
ENOFUTBLYR-22	14.5.2021	32.00	1.7%	0.55
ENOFUTBLYR-23	14.5.2021	29.65	0.2%	0.05
ENOFUTBLYR-24	14.5.2021	28.80	-0.7%	-0.20
ENOFUTBLYR-25	14.5.2021	29.30	1.2%	0.35
ENOFUTBLYR-26	14.5.2021	29.55	5.2%	1.45
NEDEC21	14.5.2021	56.35	10.3%	5.28
NEDEC22	14.5.2021	57.03	10.6%	5.48

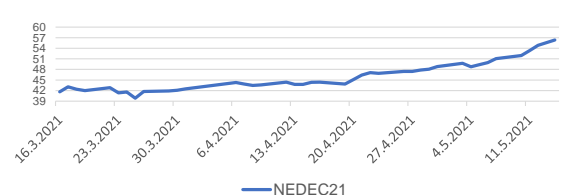
EPAD settlements

14.5.2021 (€/MWh)	2021	2022	2023
SYHEL	6.70	4.13	3.53
SE1- NP System	-6.75	-6.75	-6.75
SE2 - NP System	-6.75	-6.75	-6.75
SE3 - NP System	3.05	3.08	3.08
SE4 - NP System	12.75	10.00	10.03

Week's spot price change

Price area (€/MWh)	Date	Value	% chg	Chg (EUR)
NP System	16.5.2021	43.74	-13.9%	-7.05
NP Area FI	16.5.2021	36.59	-30.5%	-16.05
NP Area SE1	16.5.2021	32.78	-32.5%	-15.77
NP Area SE2	16.5.2021	32.78	-32.5%	-15.77
NP Area SE3	16.5.2021	35.85	-26.5%	-12.89
NP Area SE4	16.5.2021	35.85	-26.5%	-12.89

Carbon EUR/CO2 t



COMMENTS ON WEEK 19

POWER FUTURES

Front quarter

The early part of last week saw a downward correction movement in near products. The wetter than normal weather picture and ensuing turn in the hydro balance put downward pressure on near products. However, the downward pressure eased after the early part of the week and near products started to rise. Continued very strong emission allowance and natural gas prices, as well as the continued very strong German electricity market in their wake, brought support for near product prices. Also, in the longer term the strong technical upward trend was supportive of prices.

Annual products

Prices of annual products retreated in the early part of last week along with near products and the wetter than normal weather picture. However, also downward pressure on annual products eased after the early part of the week. Continued very strong emission allowance and natural gas prices were supportive of annual product prices. The German electricity market continued a strong upward trajectory. In addition, the price of coal also continued rising slightly.

SPOT MARKET

Last week, the weather turned warmer for the time of year and temperatures continued rising until Thursday. At the weekend, temperatures started to drop and at the turn of the week temperatures reached near normal for the time of year. The weather was mostly wetter than normal. The warm, wet weather meant that flow rates turned to a sharp rise, which brought downward pressure on spot prices. However, Nordic wind power production weakened towards the end of the week, which limited the fall in spot prices. On Monday last week, electricity imports from Russia to Finland were abundant because of the public holiday in Russia. The re-start of the Olkiluoto 1 unit was delayed slightly, but the plant increased its capacity during the week. The Finnish area price fell considerably at the weekly level and settled at significantly lower than the system price.

EMISSIONS

Last week the emission allowance continued rising. The continued strong gas market, the European Commission's publication on the market surplus and investor support lifted the price. In addition to this, the auction on Wednesday in particular settled at a considerably higher price than the secondary market price. Friday reached the highest price so far at €56.90/t and the market closed at €56.65, up €6.20 at the weekly level.

Indicator	ENOFUTBLQ3-21	ENOFUTBLR-22
Coal-fired production	69 %	63 %
Coal price	77 %	75 %
Gas price (NBP)	6 %	85 %
German price level	49 %	47 %
Spot	61 %	64 %
Crude oil Brent	76 %	76 %
Water reservoirs	59 %	59 %
EUR/USD FX rate	1 %	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	19	Chg	18	Chg
ENOFUTBLQ3-21	↓	2.7%	↑	11.5%
ENOFUTBLR-22	↓	1.7%	↑	8.4%
NP System	↓	-13.9%	↓	29.8%
NEDEC21	↑	10.3%	↑	4.6%

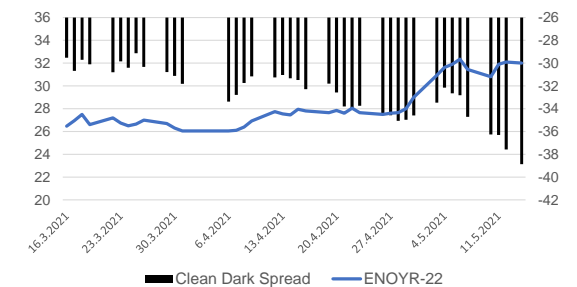
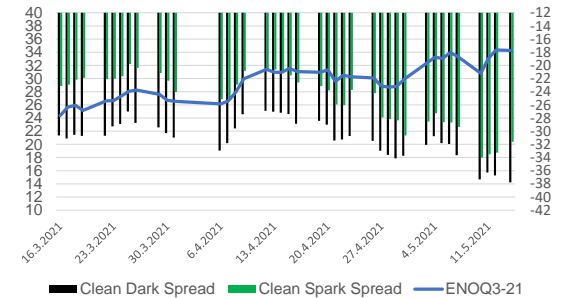
DETERMINANTS AFFECTING THE MARKET ON WEEK 20

RESTRICTIONS IN PRODUCTION AND TRANSMISSION CAPACITY

- Oskarshamn 3 (1400 MW), maintenance 22.5.-10.6.2021, in use 0 MW
- Olkiluoto 2 (890 MW), maintenance 16.5.-15.6.2021, in use 0 MW
- Forsmark 2 (1120 MW), maintenance 2.5.-30.5.2021, in use 0 MW

- FI-SE3 (1200 MW), limitation till 30.9.2021, in use 250 MW
- FI-RU (320 MW), maintenance 4.-31.5.2021, in use 0 MW

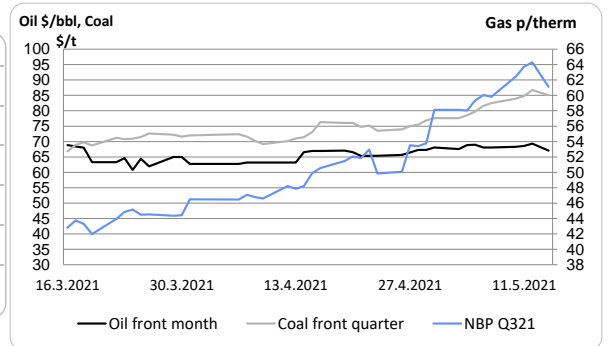
- Nordic nuclear power plants are currently operating at a capacity utilization rate of 80 %
- RU-FI transmission profile varies due to capacity payments, average imports from Russia last week were 65 % of the maximum



AVERAGE SPOT PRICE AND EPAD

Price area (€/MWh)	2013	2014	2015	2016	2017	2018	2019	2020	2021*
NP System	38.1	29.6	21	26.91	29.41	43.99	38.94	10.93	41.88
NP Area FI - NP System	3.10	6.40	8.70	5.54	3.78	2.81	5.10	17.28	3.78
NP Area SE1 - NP System	1.10	1.80	0.20	2.04	1.43	0.24	-1.00	3.60	-6.38
NP Area SE2 - NP System	1.10	1.80	1.00	2.04	1.43	0.24	-1.00	3.60	-6.39
NP Area SE3 - NP System	1.40	2.00	1.00	2.33	1.83	0.55	-0.58	10.53	0.80
NP Area SE4 - NP System	1.80	2.30	1.90	2.62	2.77	2.37	0.86	15.06	5.60

*Average for period between 1.1.2021-17.5.2021.



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