

NORDIC ELECTRICITY MARKET

28.9.2020 Markus Herranen, Gasum Portfolio Services Oy

MAINLY RAINY WEATHER TYPE

Forecast to week 40:	
ENOFUTBLQ4-20	📉 Bearish (<0%)
ENOYR-21	📉 Bearish (<0%)
NP System	📉 Bearish (<0%)
NEDEC20	📉 Bearish (<0%)

Market signals	spot	Q4-20	YR-21
Hydrologic balance	↓	↓	↓
Precipitation forecast	↓	↓	↓
Temperature forecast	↓	↓	→
Spot	↓	↓	→
Production and transmission exch.	↓	→	→
Emissions allowance	→	↓	↓
Coal price	→	↑	↑
German prices	↑	↑	↑
Technical analysis	↓	↓	↓

FORECAST TO WEEK 40

POWER FUTURES

Front quarter

The week is starting on a dry note and much warmer than normal for the time of year. For the time being, the weather type will remain warmer than normal for the time of year but rainfall amounts will become higher than normal at the end of the week. The turn of the week will see rainfall amounts rise to very high. Next week rainfall amounts will be higher than normal but will fall towards the end of next week and approach normal levels. However, the weather picture shows no clear signs of a change to drier weather, and the hydro balance will again rise to very high during the two-week forecast. We expect near products to fall.

Annual products

A rainy weather picture, a rising hydro balance and weak near-term products will bring downward pressure on the nearest annual products. We expect annual products to fall slightly at the weekly level. However, the week has started on a clear upward note on the stock markets and general market sentiment is considerably more confident than last week. Strong sentiment provides support for emission allowance and fuel prices. Availability concerns are also maintaining upward pressure on the price of coal since the Columbian coal mine strikes have been prolonged. This being the case, we expect the downward pressure on annual products to be moderate.

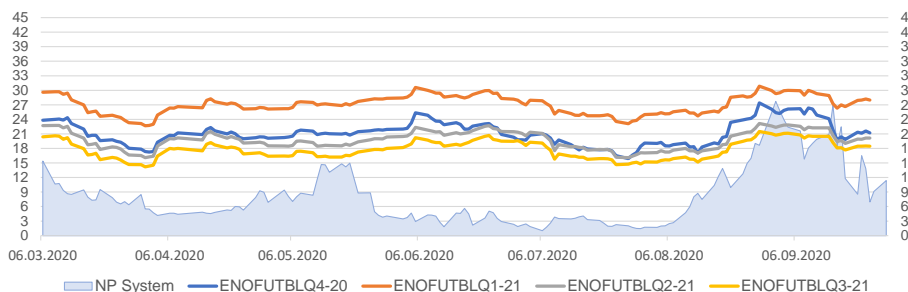
SPOT MARKET

The first part of the week will be dry and Nordic wind power production will be weak. Wind power production will rise after Tuesday and in the second half of the week will rise to higher than normal. At the weekend, wind power production will be very plentiful. Weak wind power production will support spot prices in the early part of the week but high water basin levels in Norway limit the potential for the system price to rise. On the other hand, weak wind power production will increase Finnish, Swedish and Danish spot prices in the early part of the week. Flow rates will approach normal levels during the working week until they show a clear rise at the weekend. We expect the system price to retreat at the weekly level and to settle at an average level of €7.5/MWh. We expect the Finnish area price to rise at the weekly level and to settle at an average level of €31.0/MWh.

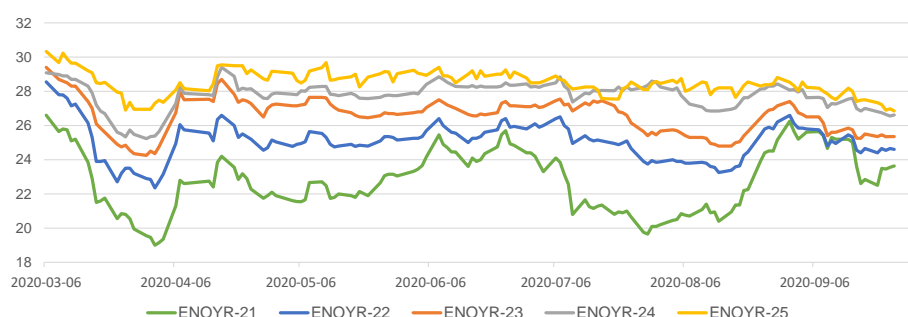
EMISSIONS

This week, the stock markets in Europe have shown a slight recovery and stock market movements may bring direction to the emission allowance during the current week. On the other hand, the corona pandemic is still threatening the economy globally, which in turn has decreased crude oil demand and price. Also the US presidential election debates between the candidates and the Brexit negotiations can affect the emission allowance price through the stock markets. Technically, the emission allowance price outlook has weakened. The nearest support level of €26/t was tested last week but if breached this week, the emission allowance price technically also has room to fall below €25/t. We expect the downward trend in the emission allowance price to continue and emission allowances to trade at between €25-€27/t.

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



Years EUR/MWh



Product	Date	Value	% chg	Chg (EUR)
ENOFUTBLQ4-20	25.9.2020	21.20	3.9%	0.80
ENOFUTBLQ1-21	25.9.2020	28.00	3.7%	1.00
ENOFUTBLQ2-21	25.9.2020	20.15	2.6%	0.52
ENOFUTBLQ3-21	25.9.2020	18.45	1.7%	0.30
ENOYR-21	25.9.2020	23.63	3.4%	0.78
ENOYR-22	25.9.2020	24.60	-0.2%	-0.05
ENOYR-23	25.9.2020	25.35	-0.6%	-0.15
ENOYR-24	25.9.2020	26.62	-1.4%	-0.38
ENOYR-25	25.9.2020	26.85	-2.4%	-0.65
NEDEC20	25.9.2020	26.11	-6.6%	-1.84
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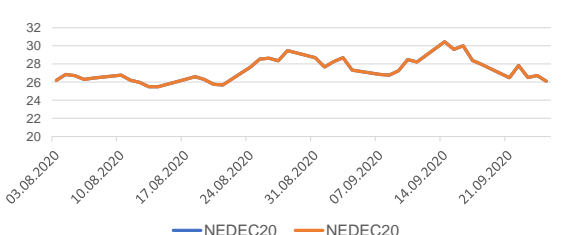
EPAD settlements

25.9.2020 (€/MWh)	2021	2022	2023
SYHEL	15.98	8.00	4.33
SE1- NP System	-1.50	-2.70	-2.50
SE2 - NP System	-1.50	-2.70	-2.50
SE3 - NP System	2.48	2.25	2.05
SE4 - NP System	4.75	3.75	3.75

Week's spot price change

Price area (€/MWh)	Date	Value	% chg	Chg (EUR)
NP System	27.9.2020	8.78	-47.9%	-8.07
NP Area FI	27.9.2020	28.20	-31.2%	-12.77
NP Area SE1	27.9.2020	16.74	-51.0%	-17.43
NP Area SE2	27.9.2020	16.74	-51.0%	-17.43
NP Area SE3	27.9.2020	18.53	-53.6%	-21.40
NP Area SE4	27.9.2020	18.53	-53.6%	-21.40

Carbon EUR/CO2 t



COMMENTS ON WEEK 39

POWER FUTURES

Front quarter

Last week saw near products recover slightly from the very sharp fall in the previous week. The forecasts showed signs of slightly drier weather during the following week and some forecast models even showed the possibility of the weather type turning dry. However, the mean weather forecasts indicated that the weather type would remain mainly rainy and mild except for a brief dry spell. This being the case, the recovery of near products remained modest at the weekly level.

Annual products

Last week, the nearest annual product recovered slightly with the possible turn of near products and the weather type. However, general market sentiment was jittery because of coronavirus concerns. Jittery sentiment led to a fall in share indexes, at the same time exerting downward pressure on the emission allowance price. However, the continued rise of the price of coal limited the downward pressure on annual products. At the weekly level, the nearest annual product closed up and the longer annual products were slightly down.

SPOT MARKET

Last week saw a sharp fall in spot prices because of the mild, rainy weather type. Water basins again rose to very high levels in Norway, which put strong pressure on Norwegian hydropower producers to generate. This in turn was reflected in very low prices in Norway but also in the system price. The weather type was also largely much windier than normal, and the windy weather resulted in the Finnish area price falling at the weekly level. However, there was still a restriction in the transmission link between Finland and South Sweden. Due to this, despite the windy weather the Finnish area price settled at notably higher than Swedish spot prices at the weekly level.

EMISSIONS

Last week, the emission allowance market was volatile, with large intraday price movements especially in the early part of the week. On Monday, the price continued the downward trend of the previous week and closed at €27/t, the lowest level for a month. During the end of the week, the price seasawed roughly between €26-€28/t. Monday's volatility spilled over into Tuesday and Wednesday, but on Thursday and Friday the intraday price movement was smaller. Upward movements in the US stock markets brought volatility in the early part of the week and the coronavirus and poor auction results in the latter part of the week. On Friday, the emission allowance price closed at a level of €26.11/t, down €1.84 at the weekly level.

Indicator	ENOFUTBLQ4-20	ENOYR-21
Coal-fired production	2 %	2 %
Coal price	10 %	2 %
Gas price (NBP)	10 %	11 %
German price level	6 %	85 %
Spot	14 %	6 %
Crude oil Brent	0 %	6 %
Water reservoirs	10 %	3 %
EUR/USD FX rate	3 %	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	39	Chg	38	Chg
ENOFUTBLQ4-20	⬇️	3.9%	⬇️	-22.0%
ENOYR-21	↔️	3.4%	↔️	-9.3%
NP System	⬇️	-47.9%	⬆️	-40.6%
NEDEC20	⬇️	-6.6%	⬆️	-1.0%

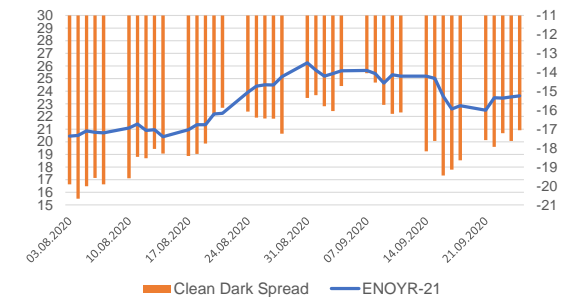
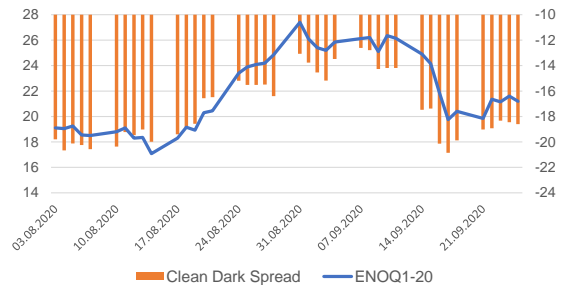
DETERMINANTS AFFECTING THE MARKET ON WEEK 40

RESTRICTIONS IN PRODUCTION AND TRANSMISSION CAPACITY

Loviisa 1 (507 MW), 29.8.-13.10.2020 maintenance, in use 0 MW
 Forsmark 1 (984 MW), 20.9.-28.10.2020, maintenance, in use 0 MW
 Oskarshamn 3 (1400 MW) 1.8.-26.10.2020 maintenance, in use 0 MW
 Ringhals 4 (1130MW) 22.-29.9.2020 failure, in use 578 MW

FI-EE (1016 MW) 28.9-4.10.2020 maintenance, in use 358 MW
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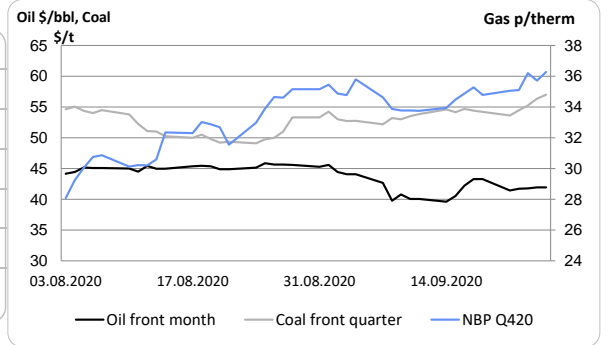
- Nordic nuclear power plants are currently operating at a capacity utilization rate of 68%
- RU-FI transmission profile varies due to capacity payments, average imports from Russia last week were 35 % of the maximum



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	9.94
NP Area FI - NP System	5.50	3.10	6.40	8.70	5.54	3.78	2.81	5.10	16.35
NP Area SE1 - NP System	0.50	1.10	1.80	0.20	2.04	1.43	0.24	-1.00	3.94
NP Area SE2 - NP System	0.60	1.10	1.80	1.00	2.04	1.43	0.24	-1.00	3.94
NP Area SE3 - NP System	1.10	1.40	2.00	1.00	2.33	1.83	0.55	-0.58	9.56
NP Area SE4 - NP System	3.00	1.80	2.30	1.90	2.62	2.77	2.37	0.86	13.43

*Average for period between 1.1.2020-28.9.2020.



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 Source for data: intStream, Tilastokeskus

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