

NORDIC ELECTRICITY MARKET

11.2.2019 Markus Herranen, Gasum Portfolio Services Oy

FOR THE MOMENT FUNDAMENTALS AND TECHNICAL ANALYSIS SUPPORT THE CONTINUING DECLINE

Forecast to week 7:	
ENOFUTBLQ2-19	📉 Bearish (<0%)
ENOYR-20	📉 Bearish (<0%)
NP System	📉 Bearish (<0%)
NEDEC9	📉 Bearish (<0%)

FORECAST TO WEEK 7

ELECTRICITY DERIVATIVES

The nearest quarter

The weather has moistened and warmed up over the weekend. The weather type is more humid and milder than normal without clear signs of the turn of the weather type. The hydrobalance rises, spot prices continue to fall, and technical short term products are weak. We expect short term products to continue declining.

Annual products

More humid and milder weather forecasts, as well as falling short-term products, bring downward pressure to the nearest annual products. The downward pressure on annual products is also caused by weak fuel prices, and technically the market continues to decline in the short term. In the prices, the decline has been strong, but so far both fundamentals and technical analysis support the decline. We expect the prices of annual products to continue to fall. The fluctuation can bring ongoing trade negotiations between the United States and China in the stock market. Potential optimism can bring support to fuel prices and thus limit the pressure on annual products.

SPOT MARKET

The weather has turned milder than normal. The weather temporarily freezes slightly on Tuesday, but for the rest of the week, the weather is much milder than normal. Nordic wind production is abundant on Monday, but on Tuesday wind production will weaken. On Wednesday and Thursday, wind production is close to normal, but during the rest of the week, wind production will fall below normal. Moist and mild weather forecasts bring pressure downwards. We expect the system price to reach an average of 47.0 €/MWh. We expect the Finnish area price to be realized on a weekly level close to the system price and to be realized at an average level of 48.5 €/MWh.

EMISSIONS

We expect the emission allowances price to move further within the range of 21.3 to 26.0 €/t. However, the downward pressure on the price of emission allowances is brought by the falling electricity market, which may cause the price of the emission allowances to fall close to the bottom of the range. In the short term, the price of emission allowances can make a new attempt at the support level, but a strong support level may, as in the previous week, lead to a price increase. Also, possible optimism in trade negotiations between the US and China and stronger stock markets can bring support to the price during the week.

Market signals

	spot	Q2-19	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)
ENOFUTBLQ2-19	8.2.2019	43.90	-4.0%	-1.85
ENOFUTBLQ3-19	8.2.2019	41.58	-4.5%	-1.97
ENOFUTBLQ4-19	8.2.2019	44.40	-4.3%	-2.00
ENOFUTBLQ1-20	8.2.2019	45.35	-3.7%	-1.75
ENOYR-20	8.2.2019	36.25	-4.4%	-1.65
ENOYR-21	8.2.2019	33.43	-2.5%	-0.87
ENOYR-22	8.2.2019	33.10	-2.2%	-0.75
ENOYR-23	8.2.2019	33.00	0.1%	0.02
ENOYR-24	8.2.2019	32.18	1.0%	0.33
NEDEC9	8.2.2019	22.36	1.9%	0.41
NEDEC20	8.2.2019	22.78	2.0%	0.44

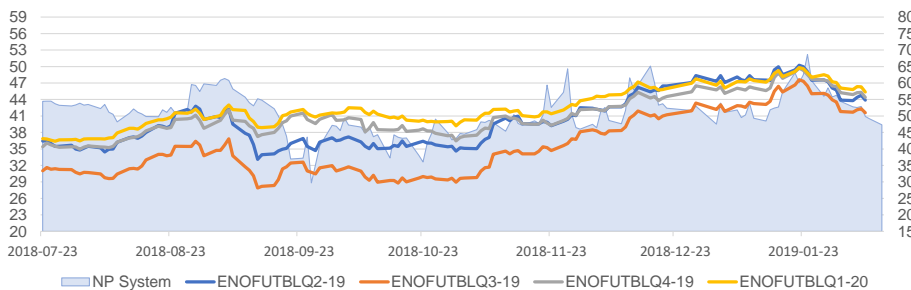
EPAD settlements

8.2.2019 (€/MWh)	2019	2020	2021	2022
SYHEL	4.25	3.73	4.00	4.00
SE1-NP System	-1.10	-1.15	-1.15	-1.15
SE2 - NP System	-1.18	-1.15	-1.15	-1.15
SE3 - NP System	2.05	2.13	2.48	2.25
SE4 - NP System	3.10	3.00	3.00	3.00

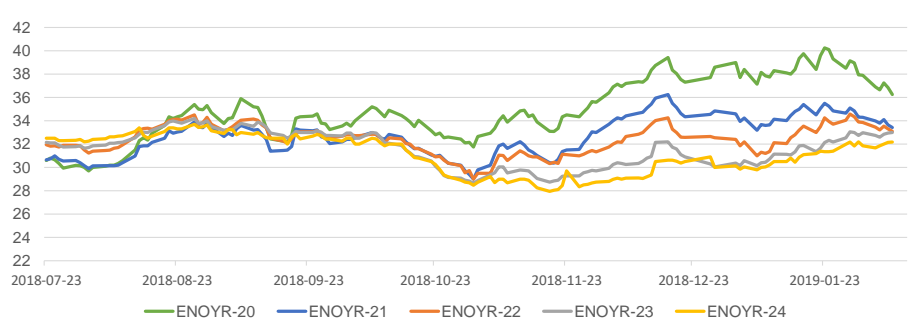
Week's spot price change

Price area (€/MWh)	Date	Value	% chg	Chg (EUR)
NP System	10.2.2019	50.10	-8.3%	-4.54
NP Area FI	10.2.2019	51.63	-10.0%	-5.73
NP Area SE1	10.2.2019	49.85	-9.8%	-5.42
NP Area SE2	10.2.2019	49.85	-9.8%	-5.42
NP Area SE3	10.2.2019	50.10	-9.7%	-5.39
NP Area SE4	10.2.2019	50.10	-9.7%	-5.39

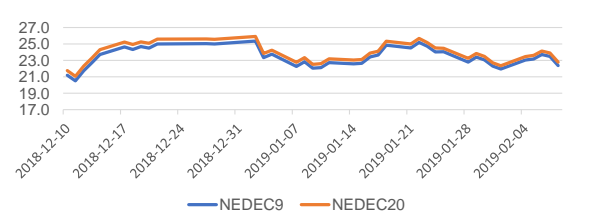
Quarters EUR/MWh (left), NP System EUR/MWh (right)



Years EUR/MWh



Carbon EUR/CO2 t



COMMENTS ON WEEK 6

ELECTRICITY DERIVATIVES

The nearest quarter

Last week, near term products fell sharply due to more humid and milder weather. The downward pressure was also boosted by the sharp fall in coal prices, the short-term week technical picture, and the much lower spot prices than the previous week.

Annual products

Last week, prices for annual products fell sharply. For annual products, downward pressure was brought on by a sharp decline in the price of coal. The downward pressure on coal prices was largely due to the milder and windy weather in Europe, which led to moderate demand for coal. The Chinese holiday week also severely slowed down the coal market. With the closest annual product, downward pressure was boosted by wet weather forecasts and, in the short term, a weak technical picture.

SPOT MARKET

Last week the weather was still colder than normal in the first half of the week, which maintained support for spot prices. After Wednesday, the weather turned milder than normal for the period, and the spot prices fell towards the end of the week. However, in spot prices, downward pressure was reduced by the weakened wind between Wednesday and Friday. Saturday's mild and windy weather reduced Danish spot prices to a very low level. In Finland, wind production was generally weaker than normal, but the regional price in Finland fell slightly more than the system price on a weekly basis. Electricity imports from Russia to Finland increased.

EMISSIONS

The price of emission allowances fluctuated abundantly last week. On Monday, the price of emission allowances continued to decline due to weak electricity markets and mild weather. However, the strong support level lasted, which in the coming days increased the price of emission allowances. At the end of the week, the price of emission allowances returned again as the weak coal price brought downward pressure on the electricity market. However, at the weekly level, the price of emission allowances was slightly higher.

Indicator	ENOFUTBLQ2-19	ENOYR-20
Coal-fired production	0 %	6 %
Coal price	51 %	27 %
Gas price (NBP)	38 %	18 %
German price level	31 %	14 %
Spot	28 %	14 %
Crude oil Brent	66 %	49 %
Water reservoirs	8 %	12 %
EUR/USD FX rate	15 %	10 %
Temperature	8 %	5 %
Precipitation	16 %	13 %

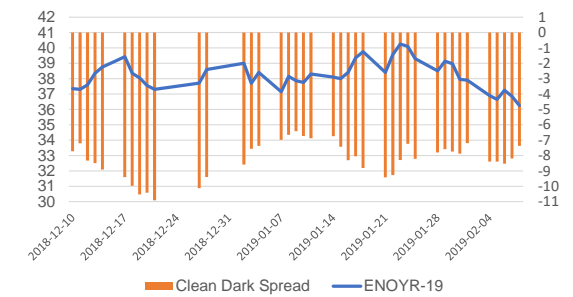
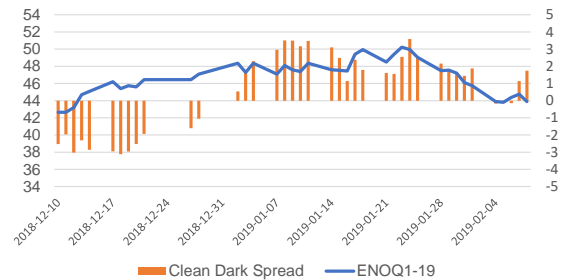
Definition
The above figures measure the ability of market determinants to describe the price changes occurred in last 6 months. The affect is measured as Coefficient of Determination*. Each variable is evaluated independently. We use a color scale to demonstrate efficacy, green (strong), yellow (moderate), red (weak)

Forecast history	6	Chg	5	Chg
ENOFUTBLQ2-19	↘	-4.0%	↘	-6.7%
ENOYR-20	↘	-4.4%	↘	-3.6%
NP System	↘	-8.3%	↘	-10.3%
NEDEC9	↘	1.9%	↘	-8.7%

DETERMINANTS AFFECTING THE MARKET ON WEEK 7

RESTRICTIONS IN PRODUCTION AND TRANSMISSION CAPACITY

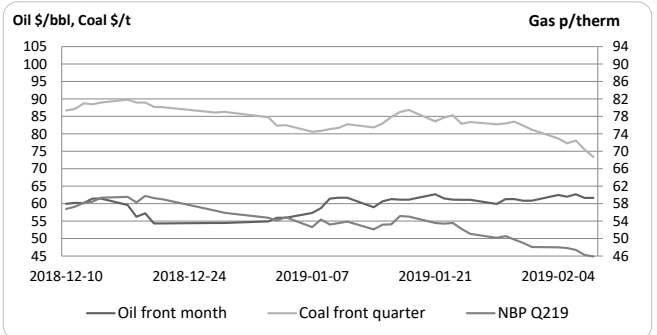
- Ringhals 2 (904 MW), failure 27.12.-30.4.2019, available 452 MW
- SE3 - FI (800 MW), 16.2.2019 maintenance, available 400 MW
- Nordic nuclear power plants are currently operating at 96%
- RU-FI transfer profile varies due to capacity charges, on average imports from Russia last week were 71 % of the 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	52.88
NP Area FI - NP System	5.50	3.10	6.40	8.70	5.54	3.78	2.81	2.62
NP Area SE1 - NP System	0.50	1.10	1.80	0.20	2.04	1.43	0.24	-0.27
NP Area SE2 - NP System	0.60	1.10	1.80	1.00	2.04	1.43	0.24	-0.27
NP Area SE3 - NP System	1.10	1.40	2.00	1.00	2.33	1.83	0.55	0.41
NP Area SE4 - NP System	3.00	1.80	2.30	1.90	2.62	2.77	2.37	0.84

*Average for period between 1.1.2019-11.2.2019.



Copyright 2018 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 support@intstream.fi.