

The gas markets in 2021

The year 2021 was a year of change on the gas energy markets and this was also reflected in gas transmission operations. The year began and ended on a very cold note and in summer the gas energy price started to rise sharply and continued rising until at least the end of the year. Since the start of 2020, the direction of gas flow in the Balticconnector gas transmission pipeline between Finland and Estonia has been from south to north, but in late 2021, as market conditions changed, the gas flow temporarily reversed to flow from north to south. Gas consumption was high during the first quarter and in December, but in autumn in particular, gas consumption was low, reflecting previous years. Gas consumption ultimately amounted to 25.1 TWh, which was close to the consumption of 25.4 TWh in 2020.

The year 2021 began very cold at times. This was also seen in gas consumption and daily consumption peaked in mid-January, when it reached around 179 GWh/day. In terms of energy, this equates to the annual consumption of around 9,000 single-family homes heated by electricity. Gas consumption rose sharply during the coldest periods as shown in Figure 1 below. Short capacity products (daily and intraday capacity) accounted for a very large share during the first quarter precisely because of cold snaps, which are very difficult to reliably predict several weeks beforehand.

The first quarter, with its high peak consumption days, was very different compared to the first quarter of 2020 since the start of 2020 was very mild and gas consumption remained relatively stable at either side of 80 GWh/day. The Baltic Gas Spot Index (BGSi) for gas energy for the Finnish market, which is set by the GET Baltic exchange which operates in the Finnish market, settled at an average level of €20/MWh during the first quarter.

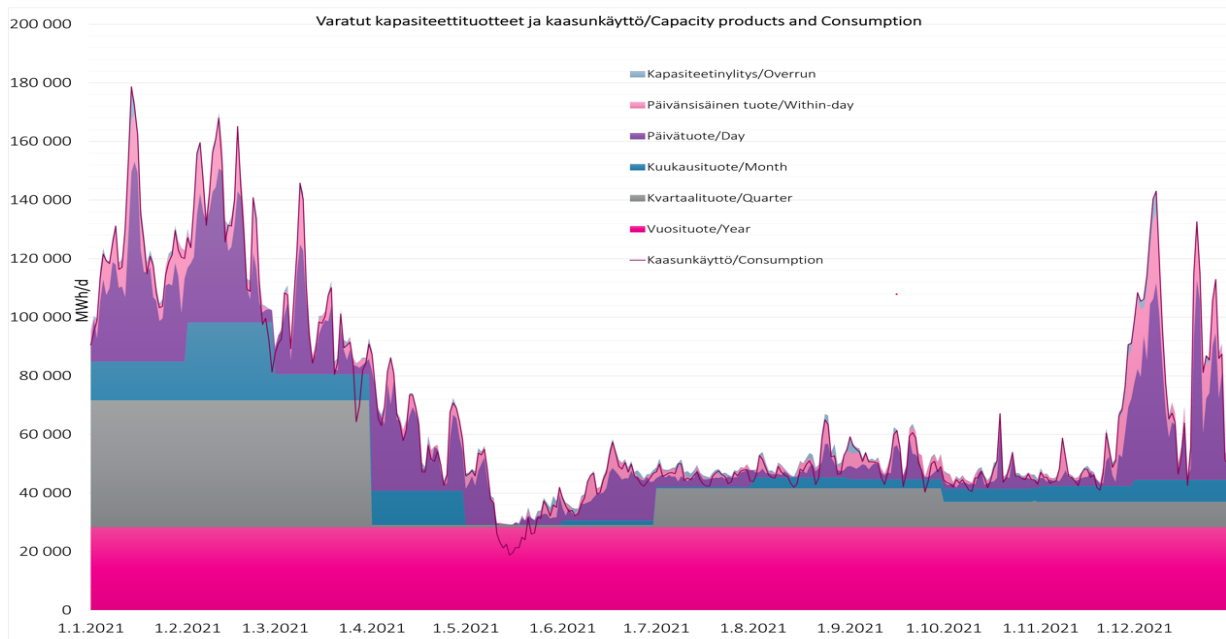


Figure 1. Capacity products booked and gas consumption in 2021.

With the approach of spring, the need for gas heating decreased in a way typical for the Finnish gas consumption profile at the same time as industrial use of gas, which has a steadier gas consumption profile than heating consumption, formed

the basis for the end use of gas. April acted like a transition month from a period of high consumption to one of low consumption. The first quarters of 2020 and 2021 were very different, but April was very similar in both years.

Demand for capacity from Estonia to Finland in Balticconnector overran availability in January-April. Due to delays in the Paldiski and Puiatu gas compressor station projects in Estonia, the technical capacity available to market participants in Balticconnector was just under 40% of Balticconnector's maximum transmission capacity. Except for biogas injection, the remainder of the gas consumption need was met from imports via Imatra. Earlier in the year, imports in Balticconnector accounted for 25% but as the need for gas consumption decreased in April, Balticconnector accounted for a relative share of 50% of gas imports.

A significant share of the gas imported through Balticconnector entered the pipeline from the Inčukalns underground gas storage facility in Latvia. The gas storage facility is filled in the summer and used up during the winter. The underground storage facility can hold an amount of gas roughly equivalent to Finland's annual gas consumption, which makes it a large facility. The gas stored in Inčukalns originates from the LNG terminal in Klaipeda or along Baltic transmission pipeline connections from Russia. In summer 2020, a significant share of the gas entering the Inčukalns underground gas storage facility was LNG, whereas in summer 2021, a larger share of the gas was imported along transmission pipeline connections from Russia. This was partly due to the relatively high price level of LNG, driven by a sharp increase in demand for LNG in Asia.

Gas end-users scheduled a number of outages for the late spring and summer and this contributed to a sharp fall in demand for gas as shown in Figure 1 above. At the same time, a change in the price level of gas energy was seen and this continued in the same direction until at least the end of the year – the gas energy price started to rise. In July, the Finnish market area gas energy price index on the exchange was €30/MWh, in September it was above €50/MWh and at the end of the year, the price level was more than €100/MWh. Price levels in Europe reached well above even these figures. The main reason for the sharp rise in the gas energy price was the low level of gas stocks in Europe with the approaching winter.

Demand for gas typically increases towards the last quarter as the weather grows colder. This fourth quarter was an exception to this since demand remained at roughly the same level from July to the end of November. During the first half of the fourth quarter, gas imports through Balticconnector accounted for more than 50% of Finland's gas demand. During the second half of the quarter, gas imports through Balticconnector contracted so that in December, the direction of the physical flow in Balticconnector reversed for the first time to flow from north to south.

Gas competitiveness compared to alternative fuels was rather weak and the high price level even impacted production at industrial facilities. During the last quarter of the year, there was even news of production downturns at industrial facilities or the unprofitable greenhouse operations because of the high price level of commodities. The high price level applied not only to gas, and also electricity prices were at times very high. An Arctic air mass reached Finland in late November and a couple of very cold snaps were also seen in December. The cold snap broke several months of steady demand when monthly demand settled at between 1.4-1.6 TWh. In December, demand settled at a level of 2.8 TWh. On a peak day, gas consumption exceeded 140 GWh despite high prices, but January's highs were not exceeded.

The high price level of gas energy was reflected in the capacity booking behaviour of market participants. There was moderate booking of long-term capacity products (quarterly and monthly capacity product) at the end of the year, which resulted in a large share of short-term capacity products (daily and intraday capacity products) at the end of November and in December. During the fourth quarter, bookings of long-term capacity products corresponded to an energy amount of 40-45 GWh/day. In practice, this means that when the daily consumption of gas overruns this energy amount short-

term capacity products are booked for them. Under the pricing mechanism for capacity products, short-term capacity products are more expensive than long ones. The high shares of short-term capacity products verified during the early and latter part of the year contributed to a lowering of the transmission price level for 2022.

Overall, 2021 was a successful year, with customers securing gas in line with their needs. Active development of the market model will continue in 2022 at both the national and the regional level. In addition to the commercial side, the near future holds some interesting gas infrastructure projects in the neighbouring region. The GIPL interconnector pipeline between Lithuania and Poland will connect the gas infrastructures in the Finland-Baltic region to the European gas infrastructure and the project to expand the pipeline connection between Lithuania and Latvia will increase transmission capacity between countries. There is also strong movement regarding new gases. The future on the gas market front is clearly looking very interesting.