



Forsyningstilsynet

Market Report 2022 The Danish Wholesale Electricity Market

ENGLISH SUMMARY OF “MARKEDSRAPPORT FOR 2022, ENGROSMARKEDERNE FOR EL”

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DANISH UTILITY REGULATOR

Torvegade 10
3300 Frederiksværk

Tlf. 4171 5400

Send via vk@dk

Send via forret@dk

SUMMARY

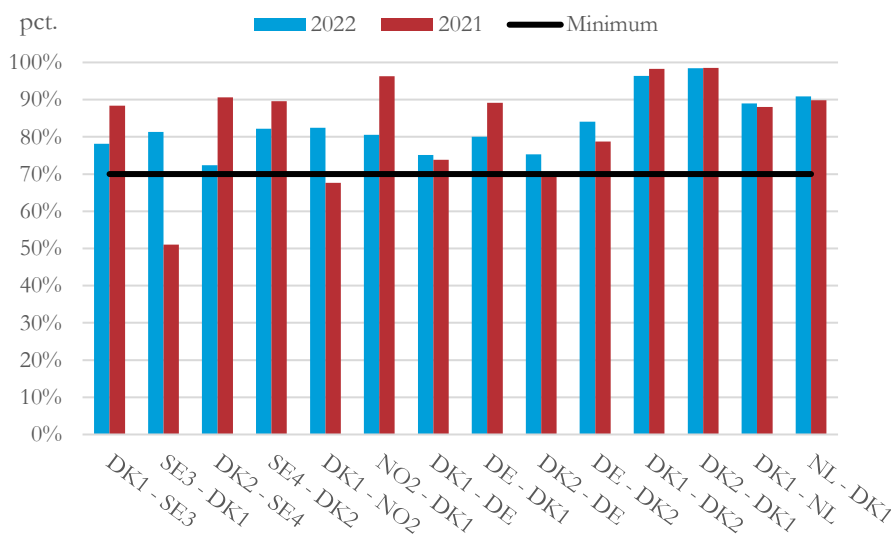
Gross electricity generation in Denmark was 35.1 TWh in 2022, which is an increase of 6.4 pct. compared to 2021. The generation mix in Denmark is undergoing a major change, in which the generation shares of wind, solar, and biomass are substituting coal and gas.

The Danish electricity consumption was 35.5 TWh in 2022, which is a decrease of 3.1 pct. compared to 2021. The electricity consumption is larger in winter than in summer because of the increased need for heating and light. The largest monthly consumption was in January (3.5 TWh) while the lowest was in July (2.6 TWh).

Denmark was a net importer of electricity with 1.4 TWh net imports in 2022. Denmark has been a net importer since the year 2011. Net imports have decreased 72 pct. in comparison to 2021, mostly brought about by an increase in domestic production coupled with a decrease in energy usage. Denmark imported electricity mostly from Sweden (9.3 TWh) and exported most to Germany (9.9 TWh).

The average available capacity for trade on the cross-zonal transmission lines in 2022 was 81.5 pct. of the nominal capacity in the export direction, and 85.8 pct. in the import direction. An overview of the available trading capacity to and from West Denmark (DK1) and East Denmark (DK2), measured as a share of the nominal capacity of the cross-border interconnectors, is presented in figure 1.

FIGURE 1 | AVAILABLE CAPACITY FOR TRADE, MEASURED AS A PERCENTAGE OF THE NOMINAL TRANSMISSION CAPACITY FOR 2022



Source: Energinet and Nord Pool.

Note: The figure shows the average available capacity for trade as a percentage of the nominal capacity of the respective interconnectors.

With the Electricity Market Regulation 2019/943, a minimum requirement of 70 pct. capacity for cross-border trade was imposed as of 1 January 2020. The Regulation gives the possibility for derogation from the minimum requirement, subject to the approval of the relevant national regulatory authority, as well as, in case of a dispute, ACER.

ACER publishes a report twice a year in which they monitor the compliance of the 70 pct. minimum requirement. In addition, ACER has developed a recommendation in which it has elaborated on how to assess the minimum requirement. It is the task of the national regulators to enforce the minimum requirement.

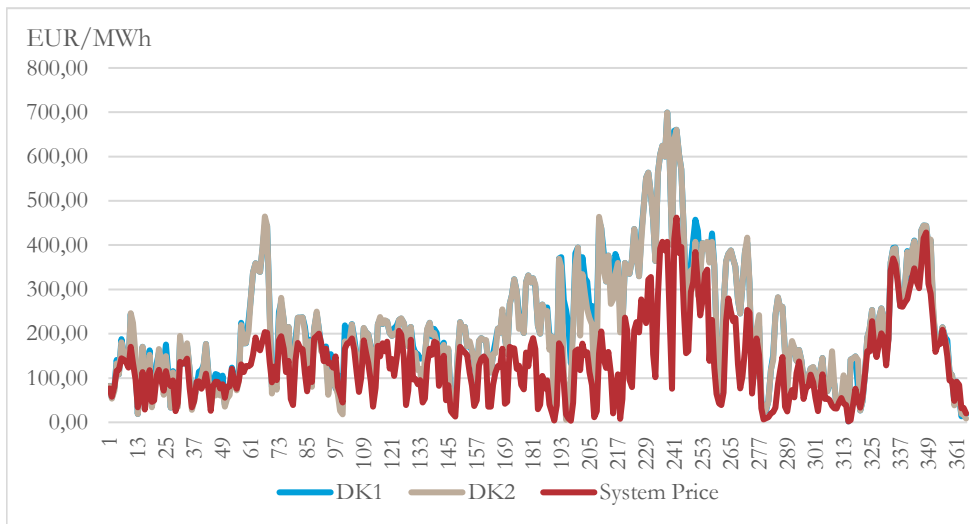
The calculated capacities for cross-border trade in this report are not calculated following ACER's recommendation. Instead, the capacities are calculated as the average available capacity compared to the nominal capacity. Therefore, DUR has not evaluated whether Energinet or other TSOs have complied with the 70 pct. requirement in this report.

On the border between DK1 and Germany, TenneT and Energinet performed counter-trade and imbalance netting to ensure system security in Germany, when the German grid would otherwise have been overloaded due to internal bottlenecks. A total of 3.6 TWh were thusly traded.

The average hourly prices in the day-ahead market in 2022 for DK1 and DK2 were 219.1 EUR/MWh and 210.2 EUR/MWh, respectively. The evolution of the day-ahead price over the whole year can be seen in figure 2. This amounts to a price increase of 148.6 pct. in DK1 and 139.1 pct. in DK2. The system price, which is a fictive day-ahead price that would have occurred if the Nordic countries were one bidding zone without any limits to its transmission capacity, was 135.9 EUR/MWh.

As Denmark is located between the Nordic region's hydropower-based and the Central European thermal and renewable-based electricity generation, it effectively acts as a transit country between two different generation mixes. This leads the price in Denmark to be generally between the cheaper northern prices and the higher Central European prices.

FIGURE 2 | DAILY PRICE DEVELOPMENT OF THE DAY-AHEAD MARKET IN 2022



Source: Energinet

Note: The development in day-ahead prices for West Denmark, East Denmark, and the system price.

The price of electricity in Denmark is affected by the prices of fuel, CO₂, and by the filling ratio of the Nordic hydro reservoirs. The price of gas increased sharply during 2022, before coming back down at the end of the year. Gas has been the main driver of the increasing prices, but other contributing factors have been present, such as the drought in Europe, affecting both coal, hydro, and nuclear power plants.

Market participants use the intraday market to balance their consumption and generation portfolios. For instance, when they experience an outage or if there is less wind than forecast. The average intraday price was 213.6 EUR/MWh in DK1 and 207.1 EUR/MWh in DK2.

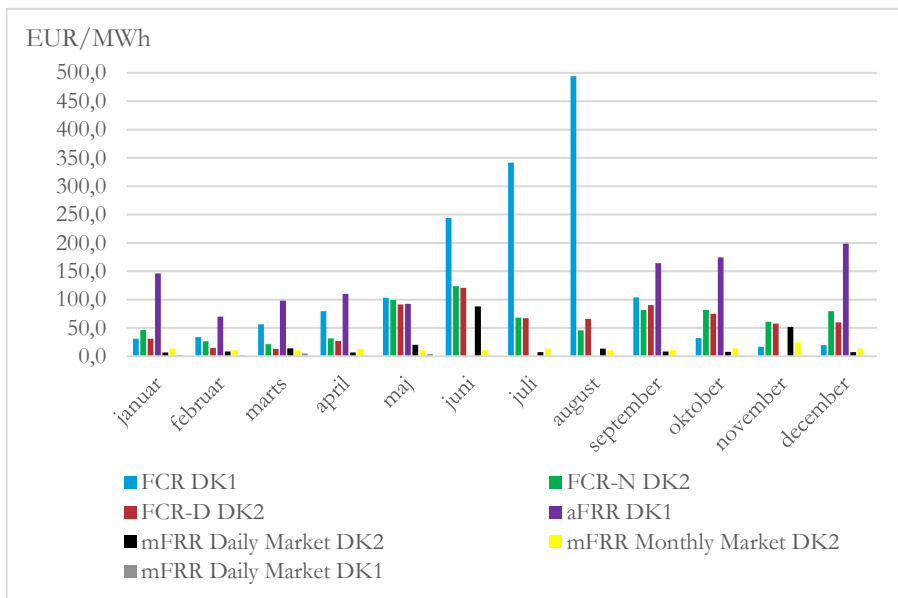
The Danish TSO, Energinet, purchases reserve capacity and reserve energy to balance the system before the operating hour. Energinet spend €368 million on capacity reserves in 2022.

Most types of reserves have become more expensive in 2022.

In August 2022, the average monthly price of FCR reached 494.2 EUR/MWh. The increase was caused by a requirement that a certain amount of FCR reserves should be procured in DK1. The requirement was removed on the 7 September, leading to an average monthly FCR price of 43.2 EUR/MWh in the last 4 months of 2022.

The monthly average prices for the different types of reserves are presented in figure 3.

FIGURE 3 | MONTHLY AVERAGES FOR RESERVE CAPACITY PRICES IN DK1 AND DK2 IN 2022



Source: Energinet.

Considering the recent developments in the Danish wholesale electricity market, as well as ongoing regulatory changes, DUR will in 2023 focus its market surveillance efforts on specific areas (see Box 1 with DUR’s focus areas for surveillance of the Danish wholesale electricity market).

The first focus point is the trade capacity on the transmission lines to and from DK1 and DK2.

DUR will also monitor the reserve markets since some of these markets are facing liquidity challenges.

Additionally, DUR will also have an increased focus on tasks that fall under REMIT.

Finally, DUR will focus on the development of the “Electricity Market Design Reform” (EMD), which will shape the future of the European electricity market.

FOCUS AREAS FOR 2023

The Danish Utility Regulator (DUR) has several focus areas for the year 2023, cf. box 1.

BOX 1 | FOCUS AREAS FOR 2023

DUR's focus areas for future market monitoring are trading capacities on foreign connections, the reserve markets, and the EU "Electricity Market Design Reform" (EMD).

In 2023, the market monitoring will continue to focus on the trading capacities on the international transmission lines, as this area is one of great importance for the Danish security of supply and the possibility for Danish producers to market their production.

The market monitoring efforts surrounding the reserve markets are expected to rise, as these markets are starting to play a bigger role in the electricity markets, and there are certain challenges, such as low liquidity, in some of them.

Additionally, DUR will also have an increased focus on tasks that fall under REMIT.

Lastly, the market monitoring will follow the development of the EU "Electricity Market Design Reform", which will set the direction for the functioning of the future common European electricity market.

In 2022, there have been several central events in the Danish wholesale electricity market. Table 1 summarizes these main events, regulatory changes, and developments in the Danish wholesale electricity markets, which have taken place in 2022.

IMPORTANT EVENTS IN 2022

TABLE 1 | TIMELINE OF IMPORTANT EVENTS FOR THE DANISH ELECTRICITY MARKETS IN 2022

28 June 2022	DUR approves Energinet's method for purchasing energy for counter trading. At the same time, DUR rejects Energinet's method regarding capacity calculations on the bidding area border between western Denmark and Germany in the intraday market. Find out more here .
29 June 2022	DUR mandates that Energinet must stop publishing data for special regulation monthly, broken down by technology. Find out more here .
14 September 2022	The president of the European Commission, Ursula von der Leyen, gave her annual speech on the State of the Union, in which she, among other things, mentions the necessity to reform the electricity markets. Find out more here .
6 October 2022	Adoption of Council Regulation (EU) 2022/1854 of 6 October 2022 on an emergency intervention to address high energy prices. Find out more here .
12 October 2022	DUR approves Energinet's request for an exemption from its obligation to adhere to the deadline for using the European platforms for the exchange of balancing energy on the new platforms MARI and PICASSO. The deadline has been pushed to 24 July 2024. Find out more here .
1 December 2022	The cap on market revenues for electricity producers at 180 EUR/MWh comes into force. The cap was included in the Council Regulation (EU) 2022/1854 of 6 October.

7 December 2022 The Nordic aFRR capacity market went live. Find out more [here](#).

