Forsyningstilsynet

The Danish Electricity and Natural Gas Markets 2022

NATIONAL REPORT **AUGUST 2023**

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FOREWORD

The Danish Utility Regulator (DUR) is the regulatory authority in Denmark for the markets for electricity, natural gas, district heating, and waste.

The National Report summarises the main developments in the Danish electricity and gas markets during 2022, both at the wholesale and retail levels. This report also presents an overview of the current legal arrangements in Denmark.

In the past year, DUR has advanced a work agenda aimed at simultaneously reaping the benefits of further efficiency gains and ensuring the societal benefits of an efficient utility sector.

The electricity prices in the two Danish bidding zones increased significantly in 2022. This was a continuation of the trend since 2021, caused by a combination of high gas prices and a drought in Europe, which has affected hydro, coal, and nuclear power generation. With significant volatility and several price records, the gas market set a price record on 30 August 2022 of 320 EUR/MWh. The average yearly spot price was 12 times higher in 2022 than in 2020, following an unprecedented uncertainty about security of supply in the gas market.

In 2022, Denmark consumption of electricity decreased compared to 2021. With a net import of 1.4 TWh electricity, Denmark remains reliable upon imports from Sweden and Germany. The average available capacity for trade on the cross-zonal transmission lines in 2022 was 81.5 pct. for export and 85.8 pct. for import.

Due to the temporary shutdown of the Tyra platform in the North Sea in 2019, Denmark remains a net-importer of gas with 2.6 bcm in 2022. The commencement of Baltic Pipe has increased the import and export in Q4 2022 and made Denmark a transit country for gas. A substantial increase in the production of biomethane of 0.57 bcm in 2022 brings the share of biomethane to 31 pct. of Danish gas consumption, compared to only 1 pct. in 2015.

Carsten Smidt
Director General
Danish Utility Regulator (DUR)

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1. NOTE ON THE STRUCTURE OF THIS REPORT

The Danish Utility Regulator (DUR) is the national regulatory authority for the markets for electricity, natural gas, and district heating. DUR monitors the development of these markets.

The purpose of this report is to describe the development of the electricity and natural gas market, and to present an overview of the current arrangements for network regulation and the technical functioning of the electricity and gas sectors in Denmark, including approved terms and conditions or methodologies (TCMs) throughout the year.

DUR must perform tasks pursuant to the *Electricity Directive (2019/944/EC)* concerning common rules for the internal market in electricity, and the *Gas Directive (2009/73/EC)* concerning common rules for the internal market in natural gas. This involves the annual compilation of a report in accordance with the reporting requirements pursuant to *Article 59 of the Electricity Directive* and *Article 41 of the Gas Directive*. This report concerns topics related to regulation, competition, and the security of supply.

The texts on the functioning of the wholesale gas and electricity markets come from DUR comprehensive reports on the development of the Danish wholesale electricity[1] and gas markets[2] published in June 2023, respectively, in Danish with an English summary.

The structure of the present report reflects CEER's "Advice on the Structure of Future National Reports and Relevant Indicators" (Ref: C19-MRM-101-03, March 2020), but there is no one-to-one correspondence between this and the structure of the present report.

[1] Danish Utility Regulator: Market Report 2022: The Danish Wholesale Electricity Market - Summary

[2] Danish Utility Regulator: Market Report 2022: The Danish Wholesale Gas Market - Summary

The following table clarifies the correspondence:

Section/subsection in CEER's Advice Document	Section/subsection in this report
1. Foreword	1. Foreword
2. Main developments in the gas and electricity markets	Subsection 2.1 and Table 1: "Main Events in the Danish Wholesale Electricity Market in 2022" Subsection 2.2 and Table 2: "Main Events in the Danish Wholesale Gas Market in 2022"
2.1. Evaluation of the market development and regulation	Subsection 2.1.1 and Box 1: Wholesale Electricity Market: Focus Areas in 2022 Subsection 2.1.2 and Box 2: Retail Electricity Market: Focus Areas in 2022 Subsection 2.2.1 and Box 3: Wholesale Gas Market: Focus Areas in 2022 Subsection 2.2.2 and Box 4: Retail Gas Market: Focus Areas in 2022
2.2. Report on the implementation of the Clean Energy Package	Subsection 2.3.
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2. COMPETITION AND MARKET FUNCTIONING

2.1 ELECTRICITY

2.1.1 WHOLESALE ELECTRICITY MARKET

2.1.1.1 PRODUCTION, CONSUMPTION, AND NET IMPORTS

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, as the generation shares of wind, solar, and biomass are growing at the expense of coal and gas.

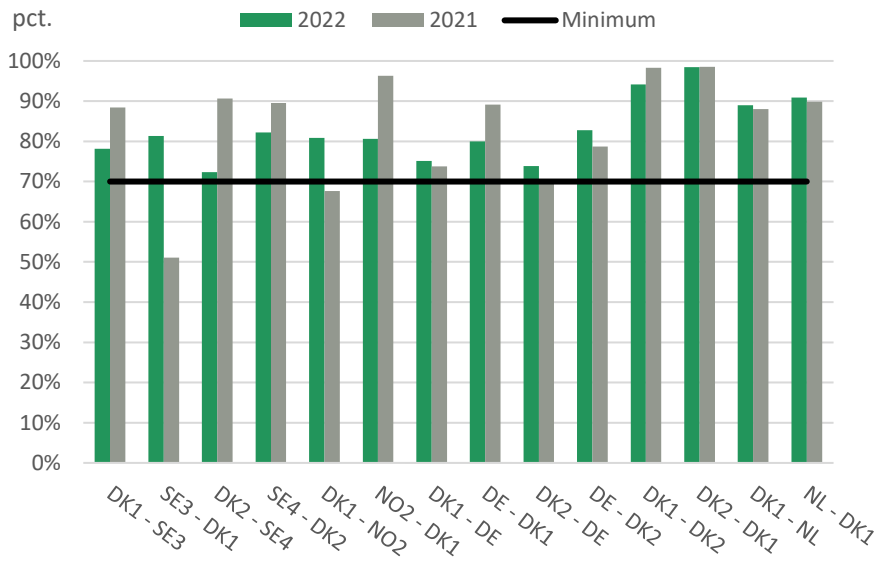
The Danish electricity consumption was 35.5 TWh in 2022, which is a decrease of 3.1 pct. compared to 2021. The decrease is due to the higher prices and a joint European effort to lower energy usage. The electricity consumption is larger in the winter than in the summer because of the increased need for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

The Danish net imports in 2022 were 1.4 TWh. Denmark has been a net importer since 2011. Net imports have decreased 72 pct. in comparison to 2021, partly due to an increase in production. Denmark imported electricity mostly from Sweden (9.3 TWh) and exported mostly to Germany (9.9 TWh).

2.1.1.2 CROSS-ZONAL TRANSMISSION LINES

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. In the import direction, it was 85.8 pct. 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 in 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
Note: The figure shows the average available capacity for trade as a percentage of the nominal capacity on the respective interconnectors. The black line indicates the minimum requirement of 70 pct. capacity according to Electricity Market Regulation 2019/943.

The *Electricity Market Regulation 2019/943* has imposed a minimum requirement of 70 pct. capacity for cross-border trade as of 1 January 2020. The regulation gives a possibility for derogation from the minimum requirement, which is subject to the approval of the relevant national regulatory authority.

European Union Agency for the Cooperation of Energy Regulators (ACER) publishes a yearly report in which they monitor the compliance of the 70 pct. minimum requirement. ACER has in addition developed a recommendation, which elaborates how to assess the minimum requirement. It is the task of the national regulators to enforce the minimum requirement.

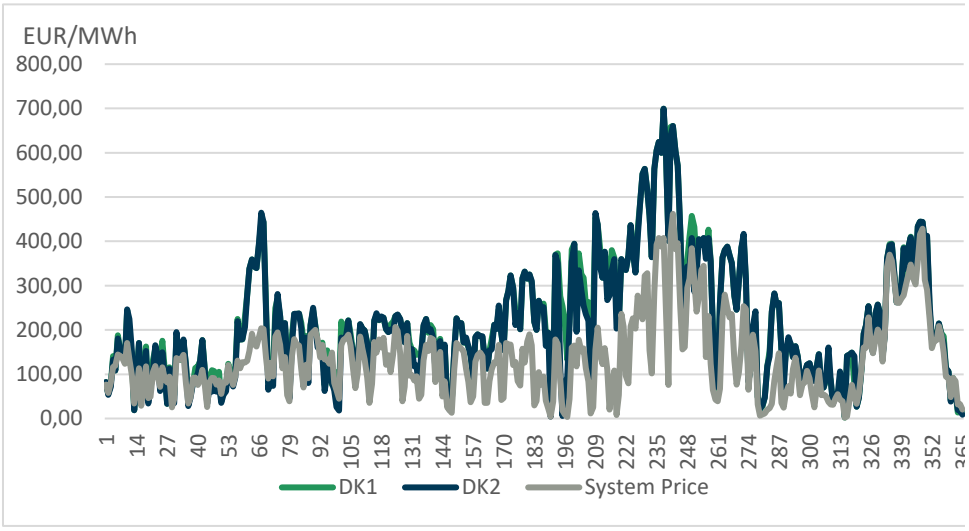
DUR has not followed ACER's recommendation in calculating the capacities for cross-border trade in this report. Instead, DUR has calculated the capacities for cross-border trade as the average available capacity compared to the nominal capacity. Therefore, DUR has not in this report evaluated whether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

On the border between DK1 and Germany, TenneT and Energinet performed countertrade and imbalance netting to ensure system security in Germany when the trading capacity is higher than the physical capacity. The countertrade and netting amounted to 3.6 TWh in 2022.

2.1.1.3 PRICES

The average hourly prices in the day-ahead market in 2022 for DK1 and DK2 were 219.1 and 210.2 EUR/MWh, respectively, cf. Figure 2. This amounts to a price increase of 148.6 pct. in DK1 and 139.1 pct. in DK2. A price difference arises between different bidding zones as shown in Figure 2, when the trading capacity exceeds the physical capacity at the cross-border interconnectors. If the Nordic countries were one bidding zone without any limits on its transmission capacity, the day-ahead market would have been cleared at a single price, namely the system price. The average system price in 2022 was 135.9 EUR/MWh. Denmark is located between the Nordic region, where the electricity generation is hydropower-based, and the Central Europe, where the electricity generation is thermal and renewable-based. Due to this geographical location, Denmark effectively acts as a transit country between two different generation mixes.

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.

Several factors affect the price of electricity in Denmark: the prices of fuel and CO_2, and the filling ratio of the Nordic hydro reservoirs. The increase in prices in 2022 is a continuation of the trend since 2021 and is due to a combination of high gas prices and a drought in Europe, which has affected hydro, coal, and nuclear power generation.

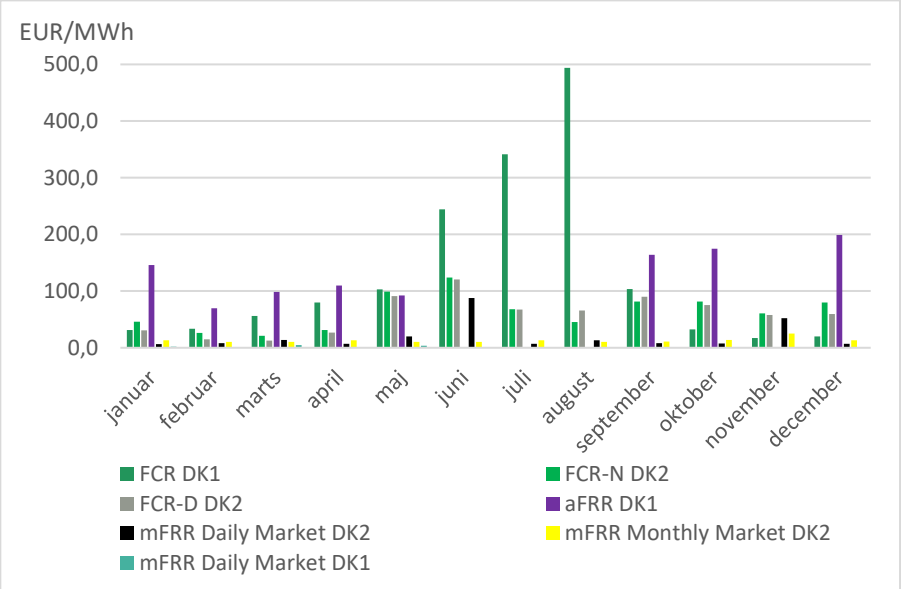
Market participants use the intraday market to balance their consumption and generation portfolios, for instance when they experience an outage or if there is less wind than expected. The average intraday price was 213.6 EUR/MWh in DK1 and 207.1 EUR/MWh in DK2.

The Danish TSO, Energinet, purchases reserve capacity and reserve energy to balance the system before the operation hour. Energinet spend €368 million on reserve capacity in 2022, an increase of 98.9 pct. compared to 2021.

The largest reserve capacity market in 2022 was the aFRR market in DK1, in which Energinet purchased reserve capacity for 78.1 mio. EUR. In general, reserves became more expensive in 2022.The average monthly price of the FCR reserve in DK1 peaked in August with an average price of 494.2 EUR/MWh. This particularly high price was due to a market condition applied until September 6, 2022. Energinet purchased FCR in DK1 on a Nordic market on condition that 7 MW should be located in West Denmark. It caused the price in DK1 to be exceptionally high. Since September 7, the condition is no longer applicable, and the prices came back down.

Last year's 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

2.1.1.4 Focus areas for 2023

Considering the recent developments in the Danish wholesale electricity market as well as ongoing regulatory changes, DUR will in 2023 focus its market monitoring efforts on specific areas (see **Fejl! Henvisningskilde ikke fundet.** with DUR's focus areas for monitoring of the Danish wholesale electricity market).

The first focal point is the trade capacity on the transmission lines to and from DK1 and DK2, as this area is crucial for the ability of Danish market participants to sell their production and for imports in times of low wind power production

In 2023, market surveillance will also intensify focus on the reserve market, as there are specific challenges in certain markets regarding low liquidity.

Additionally, DUR will also increase 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.

BOX 1 | **WHOLESALE ELECTRICITY: FOCUS AREAS FOR 2023**[3]

DUR's areas of focus 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.

[3] Besides the annual focus areas, DUR also publishes a comprehensive annual work plan for the upcoming three years regarding both electricity, gas, and district heating. The latest work plan was published in December 2022. Link (in Danish).

2.1.1.5 Important events in 2022

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

TABLE 1 | **IMPORTANT EVENTS FOR THE DANISH ELECTRICITY MARKET 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 West 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 October 6, 2022 on an emergency intervention to address the 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 new deadline has been pushed to July 24, 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 October 6, 2022*.
7 December 2022	The Nordic aFRR capacity market went live. Find out more here.

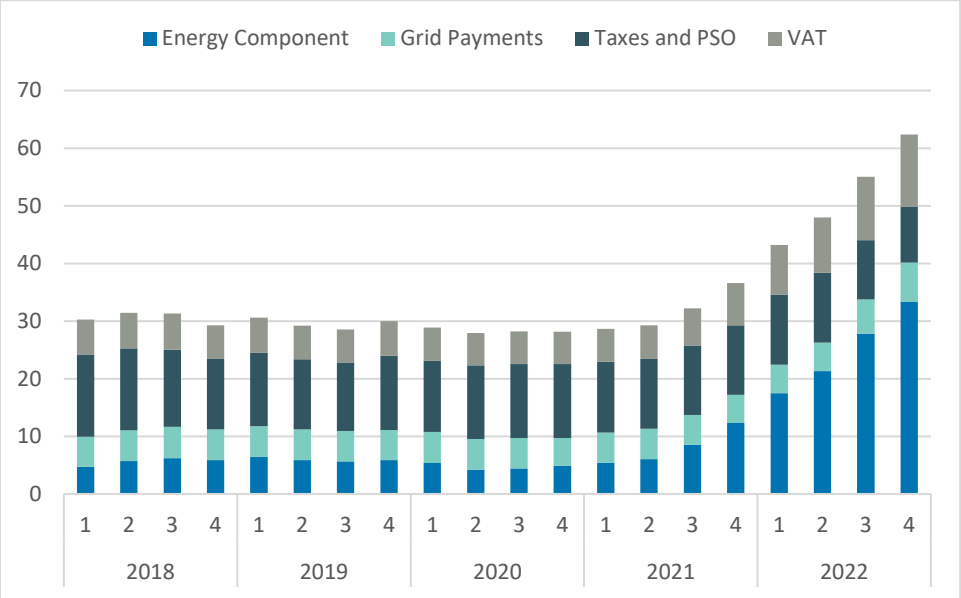
2.1.2 RETAIL ELECTRICITY MARKET

2.1.2.1 RETAIL ELECTRICITY PRICES

DUR publishes monthly and quarterly electricity price statistics, as well as an annual report concerning retail prices for household and non-household consumers with a consumption of up to 100,000 kWh/year. One of the purposes of this report is to increase transparency and boost consumer awareness with regard to products and prices in the Danish retail market for electricity, thereby aiding/enabling consumers to make an informed decision about what product(s) to choose. The report for 2022 is not yet available as of August 2023.

In 2022, the average total electricity price for Danish household consumers was 52.1 cEUR/kWh. It is an increase of 64 percent, compared to 2021, when the price was 31.7 cEUR/kWh, cf. Figure 4.

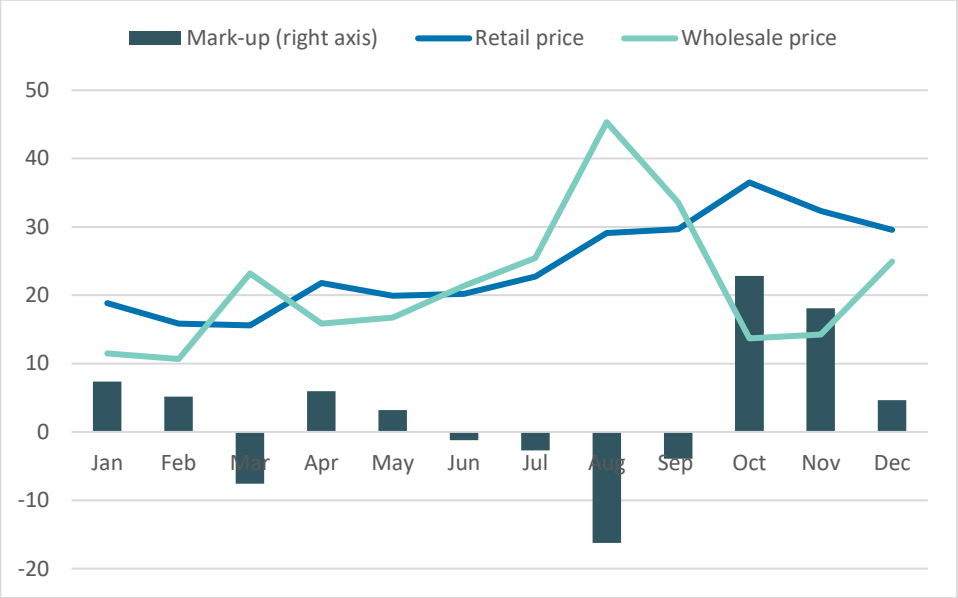
FIGURE 4 | **RETAIL ELECTRICITY PRICE FOR HOUSEHOLD CONSUMERS, 2017-2022**



Source: The Danish Utility Regulator
Note: The calculations are based on 4,000 kWh as an annual household consumption.

The volatile energy markets lead to a decoupling of the retail price for variable electricity products from the wholesale price in 2022, cf. Figure 5. The difference between retail and wholesale prices was notable in February, March, and April. The difference peaked in August, continued to be dramatic until November, and then decreased towards the end of the year. Due to the volatility, the number of fixed price products available decreased in the course of 2022.

FIGURE 5 | **CORRELATION BETWEEN RETAIL AND WHOLESALE ELECTRICITY PRICES FOR 2022**

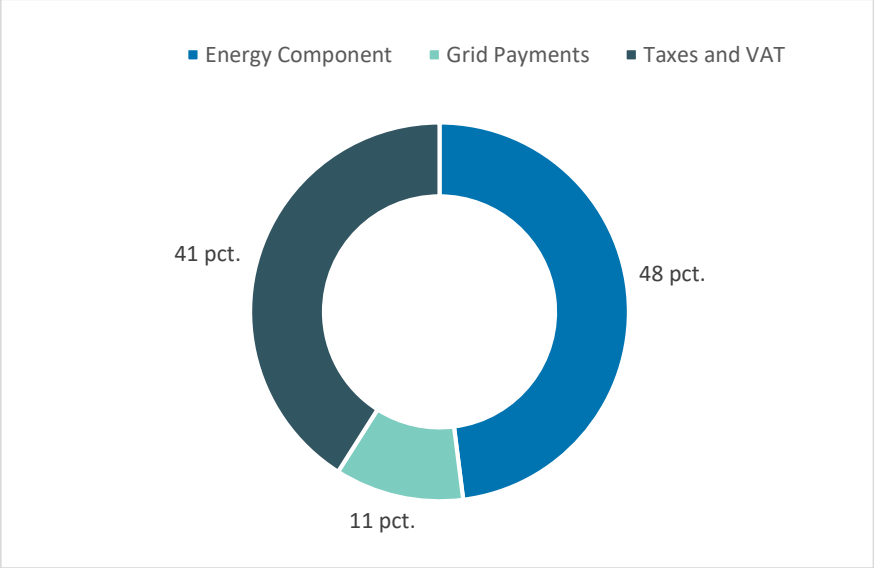


Source: The Danish Utility Regulator

In 2022, the average price that household consumers paid for electricity comprised 48 percent energy component payments, 11 percent grid payments[4], and 41 percent taxes, and value-added tax (VAT) payments, cf. Figure 6. Taxes and VAT payments were the predominant price elements in 2022. The Danish energy tax (*elafgift*), which forms part of the electricity price payable by household consumers, was reduced twice in 2022[5]. With effect from 1 January 2023, it was further reduced to 0.8 øre/kWh as an interim measure to provide relief to household consumers affected by the increase in energy prices. The interim reduction expired on 1 July 2023.

[4] Grid payments cover DSO grid tariffs, DSO subscription fees, TSO grid, and system tariffs.
[5] From 90.3 øre/kWh to 76.3 øre/kWh on 1 July 2022, and from 76.3 øre/kWh to 72.3 øre/kWh on 1 October 2022.

FIGURE 6 | **BREAKDOWN OF TOTAL ELECTRICITY PRICES FOR HOUSEHOLD CONSUMERS, 2022**



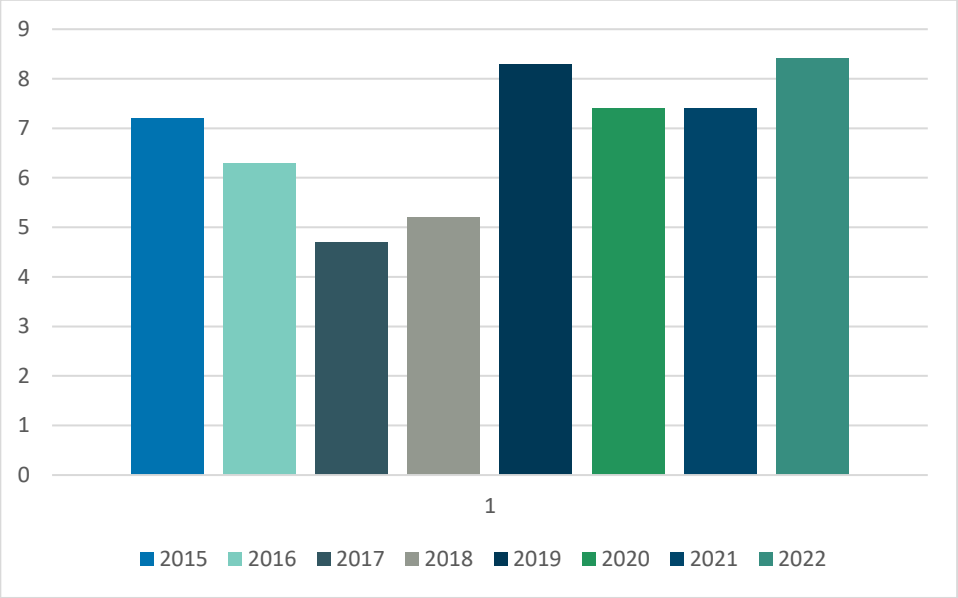
Source: The Danish Utility Regulator
The calculations are based on 4,000 kWh as an annual household consumption.

2.1.2.2 MARKET COMPETITION

In 2022, there were 55 electricity suppliers, from among which consumers could choose. Consumers can switch suppliers from one to another for a potential cost saving. Despite the potential savings, the rate of such changes, i.e. the external switching rate, has remained more or less constant since 2014 for household and non-household consumers with an annual consumption of up to 100,000 kWh, cf. Figure 7. The switching rate was 8.39 pct. in 2022 compared to 7.36 pct. in 2021, i.e. an increase of approximately 1 pct. [6]

[6] Source: Energinet, Datahub, Detailmarkedsrapporten, read more at *Detailmarkedsrapporten* (energinet.dk) (available in Danish only)

FIGURE 7 | **ELECTRICITY SUPPLIER SWITCHING RATES, 2015-2022**



Source: Energinet

In 2022, DUR continued the implementation and performance of the supervisory tasks arising out of *Executive Order 2648 of 28 December 2021 ('Elleveringsbekendtgørelsen')*, including monitoring compliance with the duties and legal obligations of electricity suppliers pursuant to the Executive Order. DUR launched an updated and revised version of the comparison tool, *elpris.dk*, in January 2022.

2.1.2.3 FOCUS AREAS FOR 2023

DUR has focus areas that are determined annually for the monitoring of the retail electricity market in Denmark. In 2022, DUR monitored the continuous and correct reporting and updating by electricity suppliers to price comparison tool, *elpris.dk*. DUR also worked on preparing a combined price tool for electricity and gas and updated parts of the regulatory framework governing compulsory reporting of disconnection of electricity supplies (now: *Executive Order no. 1452 of 2022*)[7].

BOX 2 | **RETAIL ELECTRICITY: FOCUS AREAS IN 2023**[8]

In 2023, DUR will continue the supervision of Executive Order no. 2648 of 2021 to ensure continued compliance by suppliers with the obligations for electricity suppliers. DUR will also carry on monitoring and supervising continuous and correct reporting by suppliers to the price comparison tool, *elpris.dk*, to contribute to the green transition and to encourage consumers to become more active market participants.

DUR will continue the work towards a combined price comparison tool comprising gas as well as electricity following DUR's take-over of responsibility for a price comparison tool for the gas retail market on 1 April 2023.

[7] Formerly: Executive Order 2016-11-29 nr. 1401 – indberetning af forsyningsafbrydelser, el.

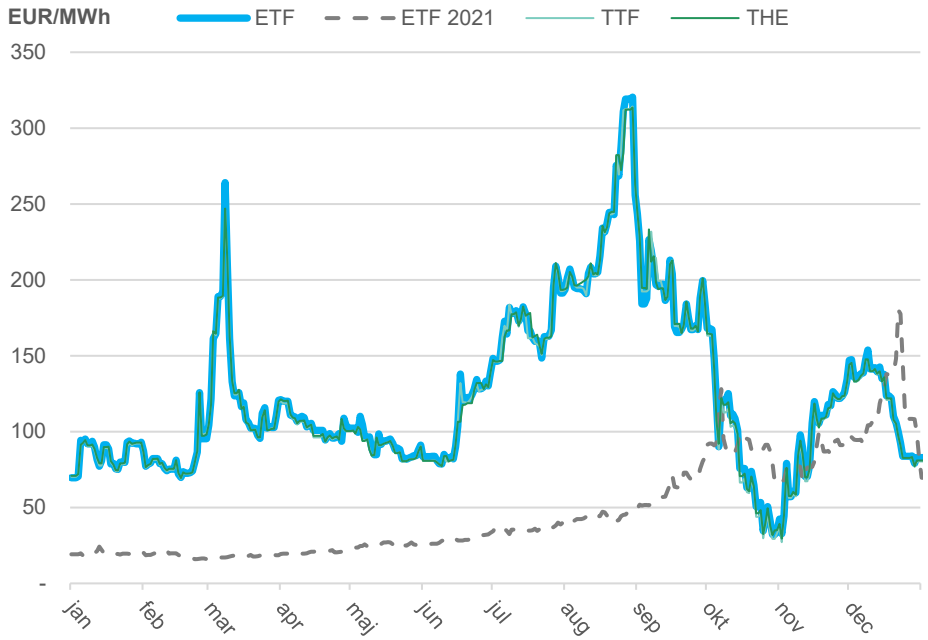
[8] Besides the annual focus areas, DUR also publish a comprehensive annual work plan for the upcoming three years regarding both electricity, gas, and district heating. The latest work plan was publish in December 2022. Link (in Danish).

2.2 GAS

2.2.1 WHOLESALE GAS MARKET

During 2022, an unprecedented uncertainty about security of supply affected the Danish and European gas markets and the price development significantly. The average yearly spot price in Denmark was 12 times higher than in 2020 with a price record on 30 August 2022 of 320 EUR/MWh, cf. Figure 8.

FIGURE 8 | **PRICE DEVELOPMENT FOR DAY-AHEAD IN DENMARK, NETHERLANDS, AND GERMANY, 2022**



Source: The Danish Utility Regulator based on data EEX.
Note: Spot prices on the day-ahead market is the European Gas Spot Index (EGSI) for the Danish Exchange Transfer Facility, the Dutch Title Transfer Facility, and the German Trading Hub Europe. EGSI is calculated for each delivery day as a volume weighted average of day and weekend contracts with delivery on the actual day.

The gas market was especially characterised by significant volatility and several price records. The average price for Q1 2022 was 99 EUR/MWh, an increase of 430 pct. compared to Q1 2021. The average price for Q2 2022 rose to 101 EUR/MWh, which was three times higher than the same quarter in 2021. The average price for Q3 was record setting with a price of 199 EUR/MWh, an increase of 320 pct. compared to Q3 2021. In August the daily average price were above 300 EUR/MWh several days in a row. In Q4 2022, the average price was 100 EUR/MWh, an increase of 4 pct. compared to Q4 2021.

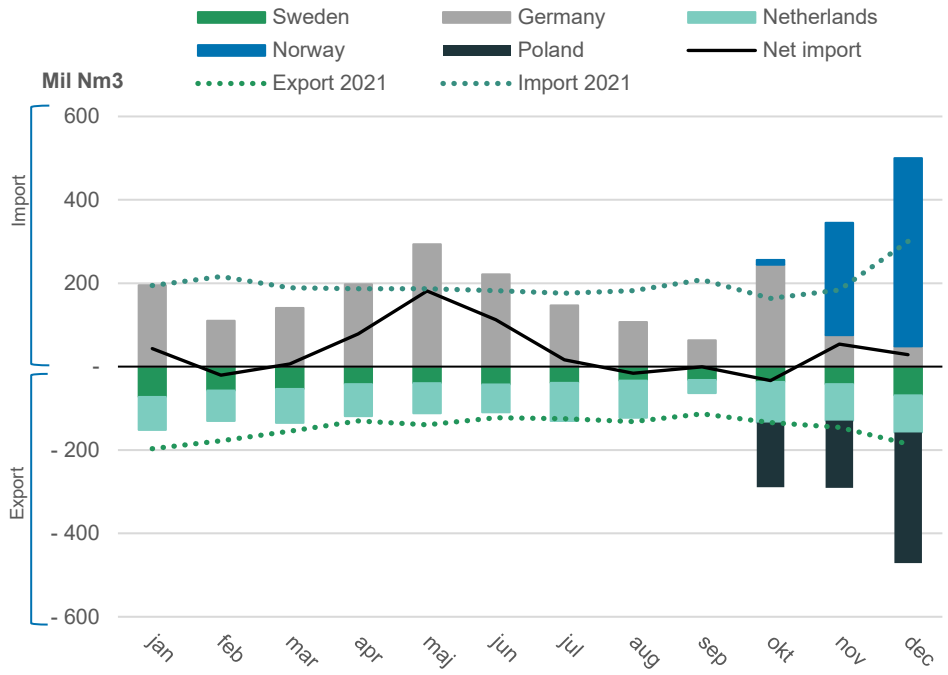
It is unusual that the highest prices are set during the summer period when demand is at its lowest. The main reason for the record prices in end of August was due to Gazprom shutting down Nord Stream 1 for maintenance while uncertainty about the supply of gas to Europe was still present.

2.2.1.1 IMPORT AND EXPORT

In 2022, Denmark was a net importer of gas and imported 2.6 bcm, which is an increase of 9 pct. compared to 2021. The Danish level of import was higher than the level of export due primarily to the temporary shutdown of the Tyra platform, cf. Figure 9.

The Danish produced gas was primarily exported to the Netherlands. The commencement of Baltic Pipe has increased the import and export in Q4 2022 and made Denmark a transit country for gas. In only a few months, Norway accounted for almost 30 pct. of the Danish total import of gas.

FIGURE 9 | **IMPORT AND EXPORT PER COUNTRY, 2022**



Source: The Danish Utility Regulator based on data from the Danish Energy Agency (DEA).

2.2.1.2 PRODUCTION AND CONSUMPTION

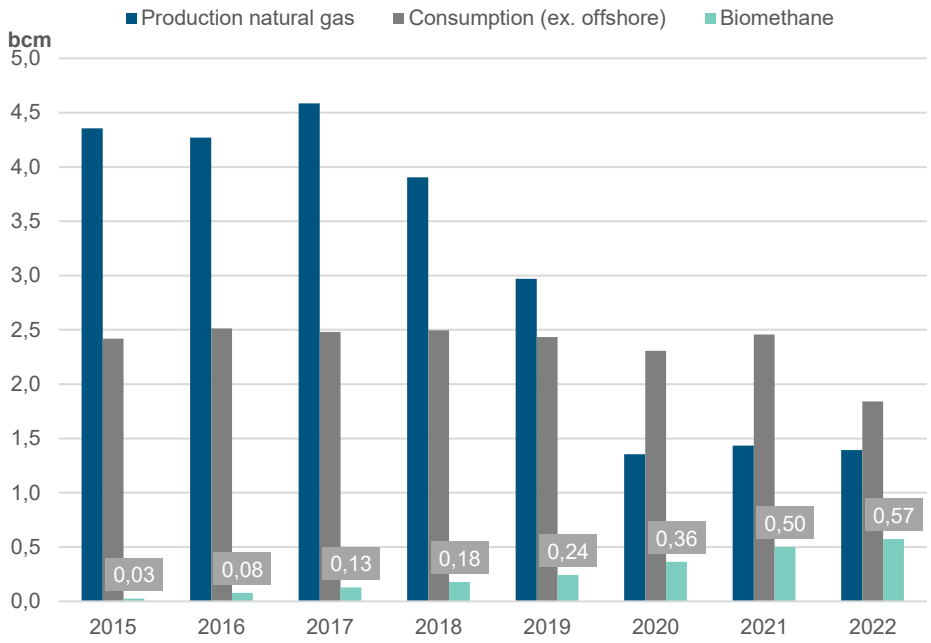
The production of natural gas was 1.4 bcm, which was a decrease of 3 pct. compared to the previous year, but an increase of 3 pct. compared to 2020, cf. Figure 10. Due to the temporary shutdown of the Tyra production field in the North Sea, this production was exported to the Netherlands via the Tyra Vest-F3 and NOGAT pipelines. This

means that Danish consumers currently do not benefit directly from the gas produced in the North Sea.

The production of biomethane increased substantially to 0.57 bcm in 2022. This was an increase of 15 pct. compared to the year before. In 2022, the biomethane share of Danish gas consumption was 31 pct. in contrast to only 1 pct. in 2015.

The Danish gas consumption in 2022 was the lowest in two decades. The gas consumption decreased due especially to the mild weather and the very high gas prices throughout the year.

FIGURE 10 | **ANNUAL PRODUCTION AND CONSUMPTION, 2015-2022**



Source: The Danish Utility Regulator based on data from DEA and Energinet.
Note: Biomethane gas is upgraded biogas that may be injected into the gas grid and traded at the gas market.

In 2022, there has been sufficient available northbound capacity on both sides of the Danish/German border. In the coldest winter months, bottleneck situations at the Ellund interconnection point may occur, as the import capacity may not be sufficient to supply the Danish-Swedish market fully. If so, the Danish gas storage must secure the remaining demand.

2.2.1.3 UTILISATION OF GAS STORAGES

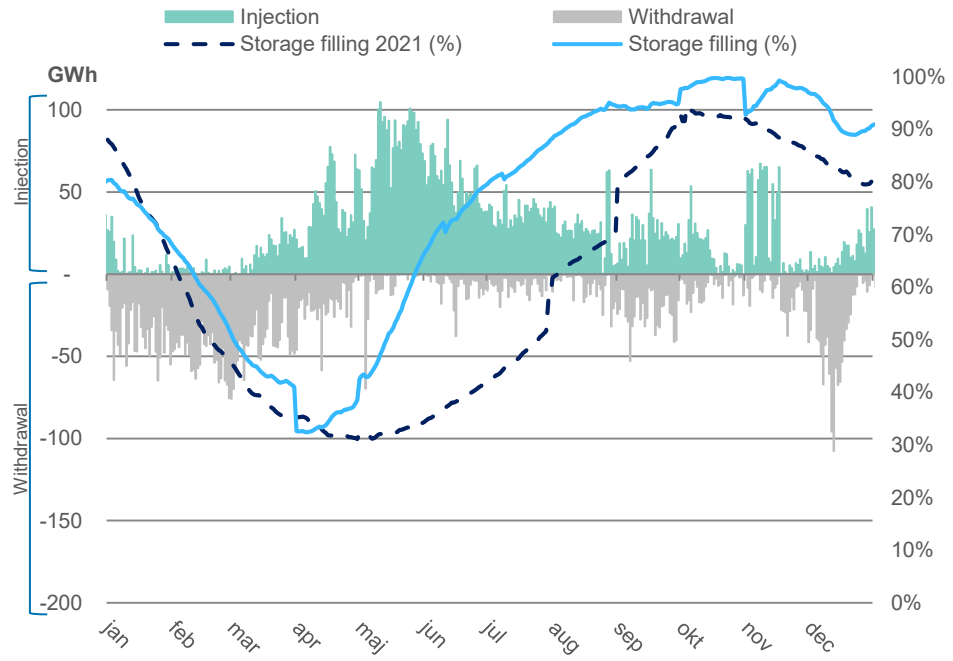
Gas Storage Denmark's two storage facilities had a total available storage capacity of 9.9 TWh in storage year 2022/23, an increase of 4 pct. compared to 2021/22.

The storage capacity was sold out in 2022/23 and is also sold out for storage year 2023/24. The capacity was sold at an average price of 6.47 EUR/MWh, which was 24 pct. higher than in 2021 and 30 pct. higher than in 2020.

The average price for a standard storage product (170 days injection/120 days withdrawal) was 5.48 EUR/MWh.

Utilisation of the gas storage capacity in 2021 was at a very low level throughout the year. EU passed a new regulation in 2022 requiring that gas storages in EU should have a minimum filling level of 80 pct. by 1 November 2022 and 90 pct. by 1. November 2023. The regulation forced a significant injection of gas into storages across EU, and the Danish gas storage reached the minimum filling level already on 2 July, cf. Figure 11.

FIGURE 11 | **STORAGE FILLING, INJECTION AND WITHDRAWAL, 2022**



Source: The Danish Utility Regulator based on data from Gas Storage Denmark.

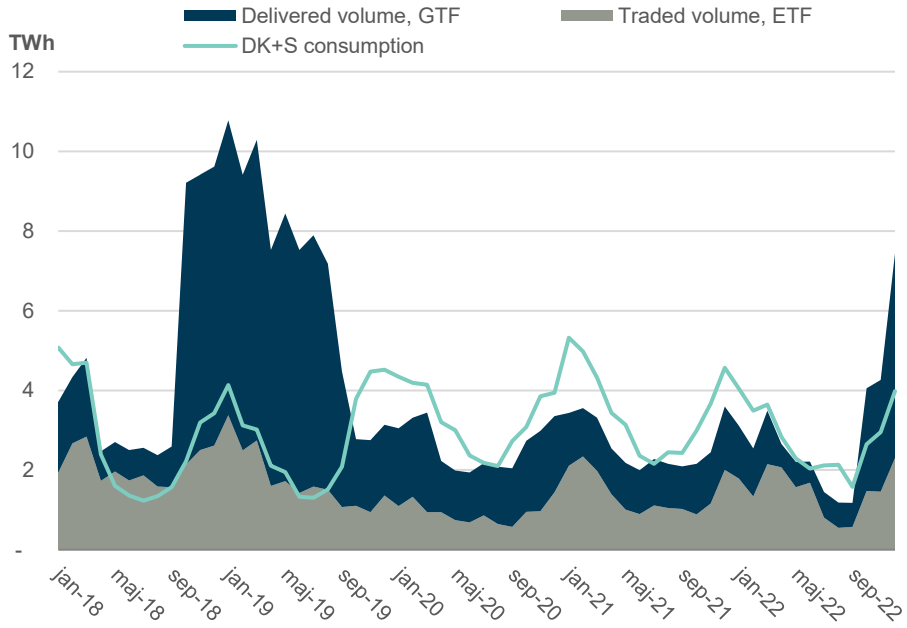
2.2.1.4 TRADING AND MARKET

Delivery points for gas vary depending on where the trade transactions take place. If a trade transaction takes place at the exchange European Energy Exchange (EEX), the delivery point for gas traded becomes Exchange Transfer Facility (ETF). On the other

hand, bilateral gas contracts taking place over-the-counter are delivered at Gas Transfer Facility (GTF).

In 2022, 12 TWh was traded at ETF, while 18 TWh was delivered at GTF, cf. Figure 12. GTF being the primary deliver point in 2022 was the opposite of the year before, when ETF was the primary delivery point in Denmark. The commencement of Baltic Pipe increased the volumes delivered at GTF in Q4, 2022.

FIGURE 12 | **TRADED VOLUME AT ETF AND GTF, 2018-2022**



Source: The Danish Utility Regulator based on data from EEX and Energinet.

DUR also examines the development in market concentration on the Danish gas market. This development is estimated by the Herfindahl-Hirschman Index (HHI) and is used as an indicator of the competitive situation on a specific market. An HHI at 10,000 corresponds to a status of monopoly, while an HHI at zero corresponds to perfect competition. The market concentration for both GTF and ETF is considered moderate, although the HHI for GTF increased substantially on both buyer and seller side in 2022. On the other hand, the market concentration on ETF decreased on both buyer and seller side. Danish Utility Regulator monitors the development.

2.2.1.6 REGULATORY DEVELOPMENT

DUR has published several decisions during the year. In February, DUR approved the establishment of a joint market zone for Denmark and Sweden including the offshore system of Baltic Pipe into the transmission system. In June, DUR partially approved the

notified tariff methodology from Energinet. In September, DUR approved a new non-transmission tariff for non-protected gas consumers.

Additionally, DUR is examining a number of complaints regarding the tariff level in the Danish offshore system. In April 2020, the Danish Western High Court ruled on a case regarding the setting of tariffs for transportation in the Danish offshore system in the period from July 2011 to October 2012. The High Court invalidated the previous decisions by DUR and the Danish Energy Board of Appeal. DUR is re-examining the original complaint and additional complaints regarding the tariff level in the Danish offshore system. The complaints are expected to be reviewed simultaneously. DUR expects to initiate a consultation of the draft decisions in Q4 2023.

2.2.1.6 FOCUS AREAS FOR 2023

DUR has a number of focus areas for the wholesale gas market in 2023. Baltic Pipe commissioned with full capacity on 1 November 2022. DUR will thus monitor how the pipeline system will affect the Danish gas market. Furthermore, DUR will also monitor how the shippers will use the new possibilities for import of gas from Norway due to integration of the Danish and Norwegian gas system.

There is still an uncertain security of supply in Europe due to the reduction of import of Russian gas, which also have made Europe more dependent on import of LNG. The Danish gas storages thus plays an important role in security of supply. DUR will monitor the utilisation of the storages to ensure an efficient use, which benefits both Danish consumers and companies.

The Ellund interconnection point between Denmark and Germany is essential for the integration between Denmark and the rest of the North-West Europe. DUR will monitor and focus on the efficient and appropriate utilisation of the Ellund interconnection point, cf. **Fejl! Henvisningskilde ikke fundet.**.

BOX 3 | **WHOLESALE GAS: FOCUS AREAS FOR 2023**[9]

DUR focus areas for 2023 is strongly linked to the commissioning of Baltic Pipe and the uncertain supply of gas to Europe.

The market monitoring will focus on an efficient utilisation of the Danish gas market and transmission system.

DUR will closely monitor REMIT-related incidents so there will be an appropriate and efficient utilisation of the gas system.

DUR will also continue to monitor the Ellund interconnection point to Germany. A well-functioning integration between Denmark and the North-West European gas market is important for an efficient price setting and the possibilities of import and export of gas to and from Denmark.

DUR will also closely monitor the effect of the commissioning of the Baltic Pipe on the Danish gas market including how the integration between Norway, Poland, and Denmark affects the Danish gas market.

Due to the uncertain security of supply the Danish gas storages thus plays an important role. DUR will monitor the utilisation of the storages to ensure an efficient use which benefits both Danish consumers and companies.

2.2.1.5 IMPORTANT EVENTS IN 2022

In 2022, the Danish gas market was predominated by events related to the Russian invasion of Ukraine and the following European energy crisis.

TABLE 2 | **IMPORTANT EVENTS FOR THE DANISH GAS MARKET IN 2022**

14 Februar 2022	Danish Utility Regulator approved the methodology regarding a joint market zone. Read more here.
6 March 2022	A political majority entered into an agreement about Danish defense policy, "Nationalt kompromis om dansk sikkerhedspolitik". It shall make Denmark independent of Russian gas. Read more here.
31 March 2022	The Russian President announced a decree on a special procedure for the fulfillment for foreign buyers of Russian gas, which demanded that the state-owned Russian gas company, Gazprom, after 1 April should only receive payment in Russian rubles for gas export to Europe. Several companies believed this was a breach of contract, while others would obey it. Read more here.
4 April 2022	The German national regulatory authority, Bundesnetzagentur, took over control of the European subsidiary of Gazprom, Gazprom Germania. Read more here.

[9] Besides the annual focus areas, DUR also publish a comprehensive annual work plan for the upcoming three years regarding both electricity, gas, and district heating. The latest work plan was publish in December 2022. Link (in Danish).

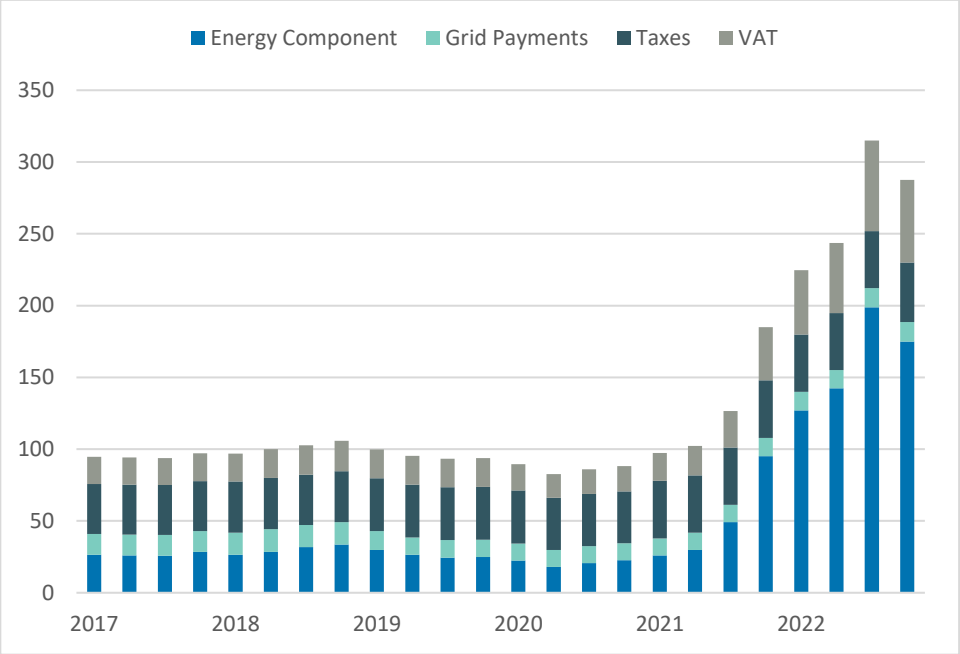
12 May 2022	Danish Utility Regulator approved a new tariff methodology for the gas transmissions system. The methodology was approved from 1 October 2022 to 30 September 2027. The approval includes an abolition of the volume tariff and the introduction of a new non-transmission tariff. Read more here.
18 May 2022	European Commission presents REPowerEU. REPowerEU should make EU independent of Russian fossil fuels and increase the green transition. Read more here.
20 – 23 June 2022	DEA declared ”Early Warning” in Denmark. Read more here. The Swedish Energy Agency declared ”Early Warning” in Sweden. Read more here. The German federal minister of economic affairs declared ”Alert” in Germany. Read more here.
25 June 2022	A political majority entered into a political agreement with the ambition that green gases should cover 100 pct. of the Danish gas consumption in 2023, and that no Danish households should heat the house with gas from 2035. Read more here.
29 June 2022	EU passed binding national filling requirements of underground gas storages. The filling requirements should support security of supply. The regulation set a minimum filling level at 80 pct. on 1 November 2022 for each member state. Read more here.
26 July 2022	EU passed non-binding targets for each member states gas consumption. Read more here.
3 August 2022	TotalEnergies announced in a REMIT-message that it deferred the recommencement of the Tyra platform to Winter 2023/2024.
30 August 2022	The Danish spot price at ETF set a historic price record of 320 EUR/MWh.
28 September 2022	Danish authorities assessed that there had been three explosions at the gas pipeline between Russia and Germany, Nord Stream 1 on 26 September 2022. Read more here.
30 September 2022	Danish Utility Regulator approved a new tariff for non-protected consumers. Read more here.
1 October 2022	Baltic Pipe for gas transportation between Denmark and Poland had commissioned with partial capacity. Read more heEre.
1 October 2022	German THE introduced a new exit fee on gas transportation in Germany (Gas Storage Neutrality Charge). The fee was 0.59 EUR/MWh and will be added to all exit allocations at interconnection points, including Ellund. Read more here.
30 October 2022	Danish gas storage filling level reached 100 pct.
24 November 2022	EU passed new regulation, which would implement an LNG price benchmark that would provide for stable and predictable pricing for LNG. EU also passed new regulation, which would establish a market for joint purchasing of gas. Read more here.
30 November 2022	Baltic Pipe had commissioned with full capacity. Read more here.
22 December 2022	Due to the record high energy prices and a concern regarding large price spreads between TTF and LNG, the EU approved a dynamic price limit (MCM) on gas trades with delivery at the Dutch gas hub, TTF. Read more here.

2.2.2 RETAIL GAS MARKET

2.2.2.1 RETAIL GAS PRICES

In 2022, the average total gas price for retail consumers (both household and non-household) was 267.7 cEUR/m^3, which is an increase of 209 pct. compared to 2021, when the price was 127.8 cEUR/m^3, cf. FIgure 13. This increase is mainly due to the large increase in the energy component price. There were almost no changes in the remaining price elements (e.g. taxes and VAT).

FIGURE 13 | **RETAIL GAS PRICES FOR CONSUMERS, 2017-2022**



Source: The Danish Utility Regulator

2.2.2.2 MARKET COMPETITION

In 2022, there were twelve suppliers offering natural gas products to the approximately 393,174 gas retail consumers in Denmark. In 2022, one of the ten suppliers was licensed as the default supplier. The default supplier is obliged to supply gas to consumers who have not actively chosen a supplier. The Danish Energy Agency (DEA) has hitherto granted the default supplier licenses for a three-year period with the possibility of renewal based on a tender process.

Consumers can choose between three types of gas products, i.e. universal service obligation products, basic products[10] and market-based products. Most retail consumers (approximately 94 percent) in Denmark have a market-based product.[11]

DUR monitors, among other things, that the price of universal service obligation products does not exceed the sum total of the wholesale gas price, the cost of transmitting the gas, and an additional fixed charge for the default supplier's total mark-up. The fixed

[10] After the expiry of the license, consumers supplied with a universal service obligation product by a licensed default supplier will receive a so-called basic product if they do not choose a different supplier/product.and/

[11] Data is for the year 2017, as the data is no longer compiled by DUR. The figures are based on a report prepared by DEA.

additional charge is determined in the tender process for obtaining the default supplier license.

The consolidation of the gas distribution companies led to changes in the fundamental conditions of the gas sector. Those changes led to a review of the existing legislation, including the regulation of the retail market within the gas sector. box 4 contains a summary of the areas on which DUR focuses its monitoring efforts within the retail gas markets in 2023.

2.2.2.3 FOCUS AREAS FOR 2023

BOX 4 | **RETAIL GAS MARKET: FOCUS AREAS IN 2023**[12]

An amendment to the *Gas Supply Act* was passed in 2021. The amendment implements a new retail market design that mirrors the design of the current electricity retail market, i.e. a supplier-centric model with combined mandatory billing and removal of the universal service obligation of licensed default suppliers. The changes came into force on 1 April 2023.

DUR will continue the implementation of the new regulations, which include four new and/or revised Executive Orders regulating the conduct of gas suppliers in the retail market. DUR will monitor the conduct and compliance of gas suppliers in respect of reporting and continually updating price information on *gasprisguiden.dk*, a price comparison tool for gas supply. On 1 April 2023, DUR took over responsibility for owning and operating the price comparison tool for the gas retail market. DUR's main focus areas in terms of the retail gas market in the years to come will also include the preparation of a combined price comparison tool for gas as well as electricity.

2.3 IMPLEMENTATION OF THE CLEAN ENERGY PACKAGE
Legal basis: Electricity Directive, Article 59(1) (u)

DEA had the responsibility of writing legislative drafts related to the implementation of the Clean Energy Package. DUR has played an active role at both steering and casework levels by giving input and participating in discussions of the new Danish provisions relating to various topics: consumers' protection and empowerment, aggregators, citizen energy communities, energy storage activities for DSOs and TSOs, fully integrated network components, closed distribution systems, and the Nordic Regional Coordination Centre (RCC). The Act to implement the applicable *Electricity Directive* was adopted by the Danish Parliament and entered into force on 31 December 2020.

[12] Besides the annual focus areas, DUR also publish a comprehensive annual work plan for the upcoming three years regarding both electricity, gas, and district heating. The latest work plan was publish in December 2022. Link (in Danish).

On 1 July 2022, the RCC was established in Copenhagen as one of six regional centres in Europe with the aim of optimising the operation of the European electricity system, both in terms of security and capacity utilisation. The establishment of the RCC is a part of the implementation of EU legislation based on the Clean Energy Package. The RCC is described in more detail in section 3.3.4.

3. NETWORK REGULATION AND TECHNICAL FUNCTIONING

3.1 ELECTRICITY

3.1.1 UNBUNDLING OF DSO

Legal basis: Articles 35 and 59(1) (j)

The requirements of the *Electricity Directive* regarding the legal and functional unbundling of vertically integrated Distribution System Operators (DSO) are transposed into provisions in the *Danish Electricity Supply Act* and in executive orders issued pursuant to this act.

In Denmark, the unbundling requirements apply to vertically integrated DSOs with more than 100,000 connected consumers.[13]

The DSOs are obliged to complete an annual compliance programme and submit this to DUR, as well as a report describing the measures carried out to ensure their fulfilment of the unbundling requirements, cf. Article 26(2) (d), whereby DUR monitors the extent to which the DSOs comply with the rules.

3.1.2 TRANSMISSION AND DISTRIBUTION TARIFFS, CONNECTION, AND ACCESS TO NETWORKS

Legal basis: Articles 59(1) (a), 59(1) (o) and 59(7)

Common to transmission and distribution:
In December 2021, the *Electricity Supply Act* was amended, making cost-effective feed-in tariffs for production facilities and geographical differentiated tariffs legal.

To prevent cross subsidisation of costs between activities, the companies must comply with the rules regarding entity unbundling, accounting unbundling and management unbundling.

Specific to transmission:
On 21 December 2022, DUR approved Energinet's methodology for feed-in tariffs and the methodology for setting connection charges for producers. According to the *Electricity Supply Act* and the *Electricity Market Regulation*, the methodologies must ensure that tariffs and other payments are set in a fair, objective and non-discriminatory manner and that they are based on necessary costs, whereby each group of consumers pays the costs to which they give rise.

Energinet charges tariffs for operation and transport of electricity (network and system services) in transmission networks following a "cost-of-service" principle.

[13] In accordance with the exemption rule in *Article 26(4) of the Electricity Directive 2009/72 and Article 35(4) of the recast Electricity Directive 2019/944*.

In May 2020, DUR received Energinet's method for non-firm transmission services. The approval process is ongoing, with amended proposals being submitted by Energinet since then, most recently on 31 March 2023.

Specific to distribution:
DUR approves the companies' tariff methodology and the methodology for setting connection charges based, generally, on an industrywide tariff model developed by Green Power Denmark (The Danish Energy Association, the energy industry organisation in Denmark, changed its name to Green Power Denmark) on behalf of the DSOs. The *Danish Electricity Supply Act* and the *Electricity Market Regulation* require that the methodologies must ensure that tariffs and other payments are set in a fair, objective, cost-reflective, transparent and non-discriminatory manner and that they are based on necessary costs, whereby each group of consumers pays the costs to which they give rise.

On 25 March 2022, DUR assessed Green Power Denmark's industrywide tariff model "Tarifmodel 3.0" and declared that it is compliant with the aforementioned requirements.

On 24 June 2022, DUR assessed Green Power Denmark's industrywide tariff model for feed-in tariffs and the methodology for setting connection charges for distribution-connected producers and declared that it is compliant with the above-mentioned requirements following from the *Danish Electricity Supply Act* and the *Electricity Market Regulation*.

In relation to the assessment on 24 June 2022, DUR, on 24 November 2022, assessed Green Power Denmark's standardised guidelines for determining access conditions for distribution-connected producers and declared that it is compliant with the *Danish Electricity Supply Act* and the Electricity Market *Regulation*. DUR also assessed hereby an extension of the approval of the methodology for setting connection charges for consumers as well as adjustments to the conditions for access to the distribution network. DUR declared that the extension until 31 December 2024 would be compliant with the *Danish Electricity Supply Act* and the *Electricity Market Regulation*.

During 2022, DUR approved a number of distribution system operators' methodologies based wholly or partly on the aforementioned industrywide models.

DUR annually checks the cost data of DSOs in connection with the determination of the revenue caps (necessary costs). The revenue caps are based on the DSOs' annual accounts as audited by a certified accountant and subsequently submitted to DUR.

In 2018, the current revenue cap regulation came into effect having five years as a regulation period. A revenue cap for a DSO is determined based on several elements: a cost cap with efficiency regulation, a cap for returns on historical investments, and a return on future investment set as a market-based WACC, and, finally, on a reduction of the revenue cap in the event of inadequate quality of supply. The revenue cap regulation also includes annual general efficiency requirements, as well as individual efficiency requirements.

3.1.3 IMPLEMENTATION OF NETWORK CODES AND GUIDELINES, CROSS-BORDER ISSUES, AND CM

Legal basis: Article 59(7) and (10)

In relation to electricity balancing (Article 59(7) (b)):
In 2012, DUR approved the basic principles of recovery of balancing costs and the principles for settlement of imbalances used by the Danish TSO.

The Nordic TSOs are developing a Nordic balancing model (NBM) for exchange of balancing capacity/energy and for imbalance netting in parallel with the implementation of *Commission Regulation (EU) 2017/2195 of 23 November 2017 establishing a guideline for electricity balancing (EB GL)*. An element of NBM is to merge the Nordic balancing market for energy with the future European platforms for balancing energy.

Electricity producers hold balance responsibility for the electricity produced at their own plants and are required to assign the balance responsibility to a Balance Responsible Party (BRP) if they wish another party to hold this responsibility.

Balancing costs are recovered from the market participants causing the cost/imbalance. From 1 November 2021, the production and consumption imbalances were merged into one imbalance. Previously there were three separate imbalances for production, consumption and trade, and they were priced differently. The four Nordic TSOs decided to implement the new imbalance model in October 2019, in accordance with European legislation and the Imbalance Settlement Harmonisation Methodology (ISHM). The most notable change is the fact that BRPs now face the same imbalance price regardless of the direction of their imbalance relative to the total imbalance of the system.

Energinet is a state-owned, non-profit, single TSO in Denmark. The primary aim of Energinet is to ensure open and effective operation, development of the overall infrastructure, and open and equal access for all users of the network.

In relation to access to cross-border infrastructures, including the procedures for the allocation of capacity and congestion management (Article 59(7) (c)):
Denmark is a member of two capacity calculation regions (CCRs): Nordic and Hansa.

CCR Nordic comprises the electricity transmission lines between:

- Jutland/Funen (DK1) and Zealand (DK2)
- Jutland/Funen (DK1) and Sweden (SE3)
- Zealand (DK2) and Sweden (SE4)
- Internal Swedish bidding zones
- Finland and Sweden

CCR Hansa comprises the electricity transmission lines between:

- Denmark (DK1) and Germany (DE)
- Denmark (DK2) and Germany (DE)
- Denmark (DK1) and the Netherlands (NL)
- Sweden (SE4) and Poland
- Sweden (SE4) and Germany (DE)

Allocation of all day-ahead cross-border capacity follows the implementation of the Single Day-Ahead Coupling (SDAC) pursuant to terms and conditions or methodologies developed in accordance with *Commission Regulation (EU) 2015/1222 of 24 July 2015 establishing a guideline on capacity allocation and congestion management (CACM GL)*. Flows and prices is determined through implicit auctions. Unused residual capacity in the day-ahead market is given to the intraday market.

At four Danish bidding zone borders, financial transmission rights are issued through monthly and annual auctions. The borders with financial transmission rights are DK1-DK2, DK1-DE, DK2-DE and DK1-NL.

Key actions under the CACM Regulation and under the FCA Regulation in 2022:
In 2022, DUR took several key actions in respect of the scope of *Commission Regulation (EU) 2015/1222 of 24 July 2015 establishing a guideline on capacity allocation and congestion management (the CACM Regulation)*:

On 28 June, DUR issued a decision pursuant to national law related to both intraday and balancing timeframes. The decision on the one hand approved Energinet's proposal on a methodology on procurement of energy for counter trading in intraday timeframe. On the other hand, the decision rejected Energinet's proposal on a methodology on a capacity adjustment mechanism to apply in the intraday timeframe on the bidding zone border DK1- DE/LU.

On 30 August, DUR approved, as per request of Energinet, CCR Hansa TSOs' amendment proposal on the CCR Hansa methodology on fallback procedures pursuant to *Article 44 of the CACM Regulation* with the objective to include the bidding zone border SE4-DE/LU in that methodology.

On 23 September, DUR approved, as per request of Energinet, CCR Hansa TSOs' amendment proposal on the CCR Hansa methodology on sharing of costs for redispatch and countertrade pursuant to *Article 74 of the CACM Regulation* with the objective to include the bidding zone border SE4-DE/LU in that methodology.

In 2022, DUR took several key actions in respect of the scope of *Commission Regulation (EU) 2016/1719 of 26 September 2016 establishing a guideline on forward capacity allocation (the FCA Regulation)*:

DUR conducted an analysis of the hedging markets in DK2 pursuant to *Article 30(2) of the FCA Regulation*. Based on the analysis, DUR adopted a decision that there was insufficient hedging opportunities and Energinet should find a way to improve liquidity

that was not based on long-term transmission rights (LTTRs) under *Article 30(5)(b) of the FCA Regulation*.

Key actions under the EB Regulation in 2022:
In 2022, DUR took several key actions in respect of the scope of *Commission Regulation (EU) 2017/2195 of 23 November 2017 establishing a guideline on electricity balancing (the EB Regulation)*:

On 31 May, DUR approved, as per request of Energinet, FCR Cooperation TSOs' amendment proposal on the FCR Cooperation methodology on procurement and exchanging of FCR in the geographical scope of the FCR Cooperation, within SA CE, pursuant to *Article 33(1) of the EB Regulation*.

On 31 May, DUR approved, as per request of Energinet, amendment proposal by Energinet and the Swedish TSO, Svenska kraftnät, on procurement and exchanging of FCR in the bidding zone DK2 and in Sweden, within the geographical scope of SA Nordic, pursuant to *Article 33(1) of the EB Regulation*.

On 29 June, DUR mandated that Energinet cease publishing data for special regulation monthly, broken down by technology.

On 12 October, DUR approved Energinet's request for a derogations pursuant to *Article 62 of the EB Regulation* from Energinet's 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 was extended to 24 July 2024.

On 28 October, DUR approved pursuant to *Article 18 of the EB Regulation* Energinet's amendment proposal on national terms and conditions for balance responsible parties to use 15 minutes imbalance settlement period instead of 60 minutes imbalance settlement period.

On 7 December, the Nordic aFRR capacity market went live based on ACER decisions 19 to 22/2020.

Key actions under FCA GL[14] during 2022:
On 17. Maj 2022, DUR conducted an analysis of the hedging markets in DK2 under *article 30 (2)*.

On 14 December 2022, DUR made a decision that the Danish TSO Energinet should find a way to improve liquidity that wasn't based on LTTRs under *article 30 (5)(b)*. The decision is made based on the previous analysis that there was insufficient hedging opportunities.

[14] *Commission Regulation (EU) 2016/1719 of 26 September 2016* establishing a guideline on forward capacity allocation.

Key actions under SO GL[15] during 2022:

- On 8 April 2021, the Nordic TSOs (including Energinet) submitted an amended methodology for ramping restrictions for active power output in the Nordic synchronous area in accordance with Article 137(3) and (4). On 7 October 2021, the Nordic NRAs issued a request for amendments, and on 7 December 2021, DUR received an amended proposal, which was approved by DUR on 7 February 2022.

- On 9 April 2021, Energinet submitted a proposal for an amended structure of the DK-DE-LUX LFC block in accordance with Article 141(2). The amendment implies a reconfiguration, whereupon the DKW monitoring area is separated from the TenneT TSO GmbH LFC area and becomes an LFC area of its own as part of the DE-DA-LUX LFC block. On 11 February 2022, the NRAs of the synchronous area Continental Europe jointly issued a position paper on approval, and on 30 June 2022, DUR approved the amended structure.

Key actions under ER NC during 2022[16]:
There have been no key actions under ER NC during 2022.

3.1.4 ELECTRICITY SMART METERS

Legal basis: Annex II

Pursuant to *Executive Order no. 477 of 2023* on smart meters and metering of end-use consumption of electricity, the DSOs were obliged to install smart meters in the homes and businesses of all consumers in Denmark. The legal requirements of smart meter functionalities are, among others, registration of metering data every 15 minutes, data storage and transmission of the data to the DSO. The DSO report the metering data to the Danish DataHub for billing purposes.

[15] *Commission Regulation (EU) 2017/1485 of 2 August 2017* establishing a guideline on electricity transmission system operation.

[16] *Commission Regulation (EU) 2017/2196 of 24 November 2017* establishing a network code on electricity emergency and restoration.

3.2 GAS

3.2.1 UNBUNDLING OF DSO

Legal basis: Articles 26 and 41(1) (f)

The unbundling requirements in *Article 26 of the Gas Directive 2009/73*[17] regarding vertically integrated gas distribution system operators (DSO) are transposed into provisions in the *Danish Gas Supply Act and in Executive Order no. 979 of 2011*.

These legal acts define a number of obligations the DSOs have to fulfil in order to ensure that they operate without being affected by the commercial interests of other vertically integrated associated companies.

DSOs are also required to ensure that their communication and identity strategies do not create confusion about their own distinct identity.

DSOs are obliged to submit a compliance programme annually to DUR, as well as a report describing the measures carried out to ensure their fulfilment of the unbundling requirements, cf. *Article 26(2) (d)*, whereby DUR monitors DSOs' compliance with the rules.

In addition to the unbundling requirements, the DSO license itself provides for certain limitations in terms of which activities the DSO may engage in.

In 2020, there was only one gas DSO in Denmark - Evida A/S[18]. The gas DSO was then unbundled and owned by Energinet. As of January 2021, the Danish Ministry of Finance took over the ownership of Evida.

3.2.2 BALANCING SERVICES

Legal basis: Article 41(6) (b) in Directive 2009/73 of 13 July 2009 concerning common rules for the internal market in natural gas

The European network code on balancing (NC BAL)[19] required national implementation by 1 November 2015.

The network code was implemented in Denmark on 1 October 2014 (early implementation), introducing market-based balancing. The gas exchange EEX serves as the trading platform for the within-day product (title product) for daily balancing.

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[17] *Directive 2009/73/EC of the European Parliament and of the Council of 13 July 2009 concerning common rules for the internal market in natural gas and repealing Directive 2003/55/EC.*

[18] Strictly speaking, there are actually three DSOs in Denmark: Evida Nord, Evida Syd and Evida Fyn. All of them are, however, owned by Evida A/S. See Table 2.

[19] *Commission Regulation (EU) No 312/2014 of 26 March 2014* establishing a Network Code on Gas Balancing of Transmission Networks

The balancing zone in Denmark is a Joint Balancing Zone (JBZ) with Sweden. The main purpose of a JBZ is to enhance the efficiency of cross-border trade between the Swedish and Danish markets and to harmonise balancing procedures. Establishing a borderless Danish-Swedish balancing zone is expected to improve competition in the overall region. The creation of one JBZ for Sweden and Denmark will simplify balancing, increase the security of supply and possibly attract more gas traders to the joint market.

On 24 September 2021, Energinet and Swedegas, i.e. the Swedish gas TSO, forwarded a joint evaluation of the JBZ to the Danish and Swedish regulators. The regulators have held a public hearing of the evaluation and received two responses. DUR and Swedish Energy Markets Inspectorate (Ei), i.e. Swedish regulator, find it positive that the market participants have been encouraged by Energinet and Swedegas to express their opinion. However, DUR and Ei agreed that the analysed time-period had been too short to fully capture the effects of the implementation of the JBZ. Therefore, the regulators have requested that another evaluation of the JBZ be conducted after Baltic Pipe being in operation for one winter.

On 6 December 2021, DUR (and Ei in parallel) approved a new balancing methodology for the Danish-Swedish JBZ. The new methodology took effect from 1 October 2022 and introduced within-day obligations along with the underlying data model and the concepts of Smoothing and No Punishment Principle. The necessity for these changes stemmed from the establishment of the Baltic Pipe, which will greatly multiply the flows of gas through the JBZ.

3.2.3 MONITORING AND REVIEWING THE ACCESS CONDITIONS FOR STORAGE, LINE-PACK, AND OTHER ANCILLARY SERVICES

Legal basis: Article 41(1) (s) (n) and (6)

According to the *Danish Gas Supply Act*, there is given negotiated access, e.g. auction, to storage and line-pack in Denmark. There is no price regulation under the *Danish Gas Supply Act*, but DUR still has a legal obligation to ensure that third party access to storage is provided in a manner that is transparent, non-discriminatory, and objective – including the way in which tariffs are set.

The Danish storage company, Gas Storage Denmark, is a wholly owned subsidiary of the Energinet Group and operates two physical storage facilities in Denmark with a combined storage capacity of approximately 10 TWh in 2022. The two storage facilities are operated as a single virtual commercial storage point and Gas Storage Denmark sells its storage capacity on a first-come-first-served basis and via auctioning.

Storage capacity was sold at an average price of EUR 6.47 EUR/MWh in 2022.

3.2.4 MODEL CRITERIA FOR ACCESS TO STORAGE

Legal basis: Article 41(1) (t)

Gas Storage Denmark is a monopolist in the Danish storage market. However, the negotiated regime for access to storage has so far been maintained, as there is no indica-

tion that the monopoly situation in the Danish storage market can be abused in a competitive market with flexible import pipeline capacity from Germany and increased short-term trading opportunities for market participants.

During the Tyra platform rebuild (September 2019 – Winter 2023/2024), the storage facilities will have a critical role in supporting the Danish gas market. It is because the significant decrease in the volumes of gas from the North Sea will make Denmark totally dependent on imports from Germany.

DUR monitors the criteria supporting the choice of negotiated access. Competition, access conditions or product choices/prices should not develop in a way that does not reflect expected market behavior. If it rather seems to reflect the monopoly situation in the Danish storage market, DUR will approach the legislator to discuss whether the access regime should continue to be negotiated or whether it should be changed to a regulated access regime.

3.2.5 NETWORK AND TARIFFS FOR CONNECTION AND ACCESS

Legal basis: Article 41(1) and (6)

In relation to transmission:
Denmark has no LNG (Liquefied Natural Gas) terminals and consequently, the following applies only to gas transmission.

On 12 May 2022, DUR partially approved the notified tariff methodology continuing, among others, uniform tariffs (postage stamp method).

On 30 September 2022, DUR approved an add-on to the tariff methodology for the service of supplying gas in a state of “Emergency”. The approval introduced a non-transmission tariff paid by non-protected gas consumers.

In relation to distribution:
There has been no new regulation on tariffs for access or connection fees in 2022.

On 25 February 2021, DUR approved a temporary methodology submitted by the Danish DSOs allowing exempting some consumers from the disconnection fee. On 28 January 2022, DUR approved a modified version of this, after which consumers must make a de minimis declaration when applying for exemption.

On 8 August 2022 DUR approved the terms and conditions of distribution services. On 19 December 2022, DUR approved an amended version of this, as well as new terms and conditions for the retailers for access to the distribution network.

To prevent cross subsidisation between distribution and supply activities, the companies must comply with the rules regarding entity unbundling, accounting unbundling, and management unbundling.

DUR approves the companies' tariff methodology and the methodology for setting connection charges. According to the *Danish Gas Supply Act*, the methodologies must ensure that tariffs and other payments are set on a fair, objective, transparent, and non-discriminatory basis and that they are based on necessary costs, whereby every group of consumers pays the costs to which they give rise.

According to the approved methodology, the distribution tariffs are set as volume charges and are independent of distance. The methodology ensures that all consumers pay a high tariff for the first cubic metres delivered and a lower tariff for volumes that exceed certain intervals.

The distribution tariff methodology was approved in 2005. As far as DUR is informed, the Danish Gas DSOs (presently three companies with a planned merger by 1 January 2025) work on a revised methodology for distribution tariffs to be submitted for approval at DUR prior to 1 January 2025.

DUR annually checks the cost data of DSOs in connection with the determination of the revenue caps (necessary costs). The revenue caps are based on the DSOs' annual accounts as audited by a certified accountant and subsequently submitted to DUR.

The applied benchmarking model used by DUR has been unchanged since the introduction of revenue cap regulation in 2005. The benchmarking model calculates sector-specific marginal cost (OPEX) for predefined output. The model then compares realised OPEX for each regulated company with a calculated OPEX for the same company, using the sector-specific marginal costs.

The model has been applied to set efficiency requirements for the 2018-2021 regulatory period.

3.2.6 CROSS-BORDER INFRASTRUCTURE, ALLOCATION, AND CM

Legal basis: Article 41(6) (c), (8), (9), (10), and (12)

There were no congestion events in the Danish transmission system in 2022, and the Danish Congestion Management Procedure (CMP) instruments were not used.

During the temporary shutdown of the Tyra platform from September 2019 to Winter 2023/2024, Denmark and Sweden are supplied almost entirely from Germany. As a result, the interconnection point at Ellund may become a bottleneck during cold winter months. However, it is unlikely that CMP instruments will be activated on the Danish side, as the import capacity on the Danish side exceeds the export capacity on the German side. In the long term, it is very unlikely that congestion will occur in the Danish gas transmission system despite that the Danish gas consumption is expected to fall. It is because that the commissioning of Baltic Pipe in 2022 will increase the flow of natural gas in the Danish system.

Baltic Pipe commenced on 1 October 2022 and with full capacity from 30 November 2022.

3.3 ELECTRICITY AND GAS

3.3.1 DESIGNATION AND CERTIFICATION OF TSO

Legal basis: Electricity Directive, Article 52; Gas Directive, Article 10

DUR certified the Danish transmission system operator (TSO) for electricity and gas (Energinet) as ownership unbundled in February 2012.

During 2021, Energinet made several changes to its organisation. Besides selling the Danish gas distribution, Evida, to the Danish Ministry of Finance, Energinet divided itself into the below mentioned subsidiaries:

- System Operator (for both electricity and gas)
- Electricity Transmission Operator
- Gas Transmission Operator
- Gas Storage Denmark
- Datahub

The new organisation of the Energinet Group did not affect the certification of the company.

A new economic regulation of Energinet was implemented 1 January 2023; however, the new regulation does not apply to Gas System Operator, Electricity System Operator, and Datahub. A new economic regulation for above-mentioned subsidiaries is expected to apply from 2024 and onwards.

3.3.2 SECURITY AND RELIABILITY STANDARDS

Legal basis: Electricity Directive, Article 59(1) (m); Gas Directive Article 41(1) (h)

There are several arrangements in Denmark, which support the security and reliability of the electricity and gas system. Energinet provides information on its activities relating to:

- Performance of scheduled maintenance works
- Revision of maintenance systems or procedures
- Reporting of incidents in the transmission network due to third party interference
- Provision of data to ENTSO-E and ENTSO-G for preparation of e.g. ENTSO-E Winter and Summer Outlook Reports
- Monthly reports for operations and projects
- Provision of plant maintenance reports created in SAP, the ERP system used by Energinet Asset Management system at Energinet in accordance with the PAS55 standard

There have been no changes to these standards and activities in 2022.

3.3.3 MONITORING TIME FOR CONNECTION AND REPAIR

Legal basis: Electricity Directive, Article 59(1) (q); Gas Directive, Article 41(1) (m)

DUR holds quarterly meetings with Energinet on regulatory issues, including monitoring tasks. DUR also requests annual written reports from Energinet on connection and repair.

DUR monitors the time taken by the DSOs to make connections and repairs, based on annual reports from the Green Power Denmark. The annual benchmarking of DSOs includes the duration and frequency of interruptions.

3.3.4 COORDINATION AND COOPERATION

Legal basis: Electricity Directive, Article 59(1) (f)
Gas Directive, Article 41(1) (c)

In accordance with *Article 59(1) (f)*, DUR cooperates with ACER and other national regulatory authorities (NRAs) on cross-border issues, in particular through participation in the work of ACER's Board of Regulators pursuant to *Article 21 of Regulation (EU) 2019/942*. Furthermore, DUR cooperates with the other Nordic regulators within Nordic Energy Regulators (NordREG).

On 1 July 2022, the Nordic Regional Coordination (RCC) was established in Copenhagen as one of six regional centres in Europe with the aim of optimising the operation of the European electricity system, both in terms of security and capacity utilisation. The establishment of the RCC is a part of the implementation of EU legislation based on the Clean Energy Package.

The RCC is owned by the four Nordic TSOs – Energinet (Denmark), Fingrid (Finland), Statnet (Norway) and Svenska Kraftnät (Sweden) – and will coordinate the operational planning of the entire Nordic power system.

The Nordic RCC will continue and expand activities, which has so far been carried out by the Nordic Regional Safety Coordinator (RSC) since 2017.

In accordance with *Article 41(1) (c)*, DUR cooperates with ACER and other NRAs on cross-border issues, in particular through participation in the work of ACER's Board of Regulators, the ACER Gas Working Group, and ACER Task Forces.

DUR has continuous cross-border cooperation with Sweden to ensure an efficient supply of gas to Sweden including a well-functioning JBZ, as Sweden has no indigenous gas production and no substantial gas storage or LNG facilities. Sweden depends entirely on Danish gas supplies for its annual domestic consumption of approximately 1 billion cubic metres per year. Security of supply is therefore a subject that requires continuous cooperation between the Danish and Swedish authorities and system operators. DEA is responsible for the security of supply in Denmark.

3.3.5 MONITORING TSO INVESTMENT PLANS

Legal basis: Electricity Directive, Article 59(1) (k), (l)
Gas Directive, Article 41(1) (g)

The regulatory authority regarding the Danish TSO's (Energinet) investments is divided between DEA and DUR.

DEA is responsible for the approval of Energinet's investment plans and for approval of actual investments.

DUR is responsible for the monitoring of Energinet's investment plans in the context of compliance with the community-wide ten-year network development plan (TYNDP). The community-wide TYNDP comprises projects of common interest (PCI projects), as well as other cross-border investment projects by Energinet. Energinet is responsible for preparing investment plans (transmission) and for submitting the plans to the Danish Ministry of Climate, Energy and Utilities (owner of Energinet) and to DUR for monitoring compliance and compatibility with the European TYNDP.

The monitoring process has revealed no discrepancies between Energinet's plans and the community-wide TYNDP.

3.3.6 SECURITY OF SUPPLY

Electricity

DEA is responsible for regulatory tasks relating to security of supply, including monitoring, planning and approving new grids of more than 100 kV.

In general, Denmark has a high degree of security of supply in the electricity sector. In 2021, the average consumer had 20 minutes of interruption, which corresponds to the average over the last 10 years. 20 minutes of interruption corresponds to having electricity in your power plug on average 99.996 pct. of the time.[20]

DEA is the competent authority for security of supply, including the monitoring of national networks, planning and approval of major infrastructure investments, etc.

Natural gas

DEA is responsible for regulatory tasks relating to security of supply. DUR is responsible for approving methodology according to relevant law and market monitoring.

In 2022, there were no disruptions to the physical supply of natural gas to the Danish (and Swedish) gas market and therefore no national declarations of early warnings, alerts or emergencies.

The Tyra platform in the Danish North Sea was closed down on 21 September 2019 for a substantial rebuild programme. The Baltic Pipe, commenced 1 October 2022, will supply Denmark and Poland with up to 10 bcm of Norwegian gas and transform Denmark

[20] Energinet: *Redegørelse for elforsyningssikkerhed 2022*, link

from its original status as an exporting gas country to a transit country. During the rebuild, almost all gas for the Danish and Swedish markets will have to be imported from Germany via the Ellund interconnection point. This, together with the total Danish storage capacity and national production of biomethane, will even be sufficient to cover shorter periods of extremely high demand or extreme temperatures.

The Danish and Swedish supply situation would only be endangered by the platform shutdown in the event of prolonged cold winter spells or disruptions in supply of gas on a European level. The Danish TSO, Energinet, has therefore increased its reserves for emergency volumes and withdrawal capacity in the Danish gas storage facilities during the period.

Due to the uncertain supply of gas in 2022, Energinet also increased the procurement of filling restrictions from gas storage consumers. Filling restrictions oblige the specific storage consumer to withhold gas in storage in a specific period of time.

3.3.7 CONSUMER PROTECTION AND DISPUTE SETTLEMENT

Legal basis: Electricity Directive, Articles 10, 14, 18, and 59, and Annex I
Gas Directive, Articles 3 and 41(1), and Annex I

Contract information (Electricity and Gas):
The minimum requirements regarding compulsory information in an electricity or gas supply contract are as follows:

- The identity, address, and contact details of the supplier.
- The payment arrangements, delivery, performance, and the period during which the supplier undertakes to deliver the services.
- Duration of the contract, where applicable, or, if the contract is of indeterminate duration or is to be extended automatically, the conditions for contract termination.
- Where information about up-to-date applicable prices, fees, and tariffs is available.
- Whether the consumer can continue the contractual relationship with the supplier at a different delivery address and the terms for this.
- The supplier's deadline for final settlement.
- Information about from whom compensation and other remedies can be claimed for non-compliance with the contract, including, but not limited to, inaccurate and delayed billing.
- Information about complaints procedures and complaints handling.
- The terms of the contract must be fair, transparent and easily understandable, and must be provided to the consumer before entering into the contract.

The information requirements regarding electricity supply contracts in the *Electricity Directive 2019/944*[21] are implemented in *Executive Order no. 2648 of 2021 on electricity supply (Elleveringsbekendtgørelsen)*. Likewise, the requirements regarding information in a gas supply contract in Annex I of the *Gas Directive 2009/73* are implemented in *Executive Order no. 340 of 2023 on gas supply (Gasleveringsbekendtgørelsen)*. Both

[21] *Directive 2019/944/EC* of the European Parliament and of the Council of 5 June 2019 concerning common rules for the internal market in electricity and amending *Directive 2012/27/EC*.

Executive Orders, issued by DEA, contain express references to the information requirements contained in the *Danish Consumer Contracts Act no. 1457 of 2013 (Forbrugeraftaleloven)*.[22]

Billing information (electricity and gas)
Suppliers are required to provide an itemised bill free of charge to the consumer, at the consumer's request.

DUR monitors gas and electricity suppliers' compliance with the legal requirements concerning billing information[23]. Furthermore, *Executive Order no. 734 of 2022*[24] *on energy companies' and building owners' duty of disclosure to end-consumers* also applies to electricity and gas billing.

Billing information (electricity)
Suppliers are responsible for all communication with consumers, including billing, following the implementation of the supplier-centric model in the Danish electricity market.

The legal minimum information requirements for electricity bills include:

- The total payment and consumption (kWh) in the billing period.
- Type of price (e.g. fixed or variable price) and the name of the product.
- Subscription fee to the supplier and the DSO.
- The total price in øre/kWh covering payment for electricity supplied, as well as grid and system services (transmission and distribution), and taxes including VAT during the billing period[25].
- The consumer's right to receive an itemised bill free of charge.

The itemised bill is intended to increase consumer awareness without overloading consumers with information, by giving an overview of the most significant price information, thereby facilitating consumers' active participation in the retail market.

The billing information requirements were updated by *Executive Order no. 1696 of 2020*.

Billing information (gas)
The requirements concerning gas billing information in Annex I of the *Gas Directive 2009/73* are implemented in *Executive Order no. 937 of 2006 on gas billing*, and updated by *Executive Order no. 209 of 2023*.

[22] *The Danish Consumer Contracts Act no. 1457 of 2013* is non-energy-specific legislation, which regulates e.g. the minimum requirements regarding a trader's duty to disclose information before concluding a contract with a consumer. Pursuant to *Executive Order no. 2648 of 2021 on electricity supply* and *no. 340 of 2023 on gas supply*, these requirements also apply to the compulsory information to be provided to a consumer in an electricity or gas supply contract.

[23] For electricity: See *Executive order no 1696 of 2020*. For gas: see *Executive order no. 209 of 2023*.

[24] *Energioplysningsbekendtgørelsen* (retsinformation.dk)

[25] One øre is equivalent to DKK 0.01.

Effective as of 1 July 2023, the option to issue a combined gas bill will cease to be available as part of the new market scheme for gas. After the date, gas consumers will receive separate bills from their gas supplier and their gas distribution system operator.

Consumer's access to consumption data (electricity)

DataHub is an IT platform established and operated by Energinet. It handles data communication and business processes between market participants in the Danish electricity market.

Overall, three types of data collated in the DataHub relate directly to consumers:

- Consumer-related master data (e.g. the consumer's name and address)
- Metering point-related master data (location address of the metering point, meter reading characteristics, meter reading frequency, settlement type, and metering point ID)
- Metering data (consumption data)

Consumers can access their data (i.e. consumer-related master data, metering point-related master data and metered (consumption) data) in the DataHub free of charge. Consumers can access the data either via supplier's website by using MitID[26] or the public website *Eloverblik.dk*, operated by Energinet. Data can be downloaded from *Eloverblik.dk* in an Excel file.

When a consumer enters into a supply contract, the supplier gains access to the consumer's data in the DataHub relevant for the supplier.

A third party, e.g. a potential supplier, the consumer does not have a contractual relationship with, can be authorised to access the consumer's data. The authorisation is part of the consumer-controlled access to data in the DataHub, whereby a consumer can grant data authorisation by using MitID on the *Eloverblik.dk* website. The consumer can withdraw the authorisation granted at any time.

Consumer's access to consumption data (gas)

Gas consumer's data is not collected in the DataHub, which only covers the electricity market. Gas consumers can typically access their consumption data, etc. via their gas supplier's website by using MitID.

Electricity comparison tool

Pursuant to the *Danish Electricity Supply Act*[27], DUR is responsible for establishing and operating an online comparison tool for electricity products offered to consumers with an annual consumption of up to 100,000 kWh.

In 2016, DUR established the public website and comparison tool, *elpris.dk*, and revised and updated it in January 2022. The overall purpose of *elpris.dk* is to increase transparency and consumer awareness with regard to products and prices in the Danish retail

[26] MitID is a secure login solution to the internet to be used in Denmark by all residents in the country.

[27] *Section 82 b(1) of the Danish Electricity Supply Act*.

market for electricity, thereby enabling consumers to make an informed decision about what product to choose.

Gas comparison tool

Information on all gas products and prices is available and comparable on the comparison tool, *gasprisguiden.dk*. Until the end of March 2023, Energinet ran the comparison tool, while DUR had the regulatory oversight of it. On 1 April 2023, DUR took over responsibility for a comparison tool for the gas market.

Electricity disconnection

DUR monitors the electricity disconnection rates in Denmark. In 2022, there were 0.62 pct. instances of electricity disconnection due to household consumers' non-payment of collateral.

In Denmark, electricity suppliers are not allowed to disconnect household consumers due to non-payment of consumed electricity. If a supplier has justified reasons to expect non-payment, the supplier can request security for the continued supply of electricity. The legal requirements regarding the minimum time between request for provision of security and disconnection depend on whether or not the household consumer is in arrears with payments to the supplier.

Consumer complaints handling

DUR does not handle complaints about disputes that arise from the contractual relationship between a consumer and a supplier. As a public authority, DUR has a duty to provide guidance about matters that fall within the scope of our authority to anyone who contacts us.

Consumer complaints can be submitted to the private Energy Supplies Complaint Board (Ankenævnet på Energiområdet). The Energy Supplies Complaint Board handles all household consumer complaints about purchase and delivery of electricity, heating and/or gas.

Before submitting a complaint, the consumer must have attempted to contact the supplier and sought to resolve the dispute bilaterally. Failing to do so will constitute grounds for the Board's refusal to take up the case.

When submitting a complaint to the Board, the consumer must pay a fee of DKK 160 (approximately EUR 22). The fee is refunded if the Board upholds the consumer's complaint. The energy company has to pay a fee of DKK 8,500 (approximately EUR 1,140) if the case is determined in favour of the consumer. If the case is closed with a settlement facilitated by the Secretariat of the Energy Supplies Complaint Board, the company must pay DKK 3,800 (approximately EUR 510).

The average complaint handling time in 2022 was approximately 2.6 months (78.8 days).

When the Board has reached a decision, it will be possible for either party to take the matter to the Danish court. Decisions of the Board are not binding or enforceable. Nev-

ertheless, there is a fairly high compliance rate for cases decided by the Board. According to the 2022 Annual Report from the Energy Supplies Complaint Board[28], energy companies in 2022 complied fully with the decisions of the Board in 60 per cent of cases, whilst there was passive compliance among 32% of the cases decided in the same period. In the remaining 8%, no conclusive information was received.

[28] More information regarding the Energy Supplies Complaint Board is available on the Board's website (in Danish only).