Forsyningstilsynet

The Danish Electricity and Natural Gas Markets 2023

National Report

Den 25. September 2024

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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 2023, at the wholesale and retail levels as well as the grid on DSO and TSO level. 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 as well as transition to a climate-neutral economy.

The electricity prices in the two Danish bidding zones decreased significantly in 2023. This was caused by a combination of decreasing price of gas and low European electricity demand. The price of electricity fell by a total of 60.3 pct. in DK1 and 61.3 pct. in DK2. However, the electricity price continued to remain well above the historical average from 2016 to 2020. In 2023, Denmark also experienced a record number of hours with negative prices, due to the continued expansion of renewable energy in 2023, with particularly large increases in total solar production. In 2023, there were a total of 281 negative hours in DK1 and 231 negative hours in DK2.

In 2023, Danish electricity consumption increased slightly compared to 2022 but remains below the level from 2021. With a net import of 3.1 TWh electricity, Denmark remained reliant on imports from particularly Sweden and Norway. The average available capacity for trade on the cross-zonal transmission lines in 2023 was 81.1 pct. for export and 85.5 pct. for import.

Baltic Pipe significantly boosted Denmark's gas imports and exports in 2023, transforming the country into a key transit hub. Notably, Denmark's gas exports reached 8.2 bcm in 2023 compared to total gas consumption 1.9 bcm. Additionally, the share of biomethane in Denmark's gas consumption reached 0.60 bcm, accounting for 32 pct. of the nation's total gas usage.

Carsten Smidt
Director General
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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, district heating, and waste. 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 the *Article 59 of the Electricity Directive* and the *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 electricity market come from DUR's comprehensive report on the development of the Danish wholesale electricity[1] market published in July 2024.

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 2023. Link (in Danish)

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: "Important Events in the Danish Wholesale Electricity Market in 2023" Subsection 2.2 and Table 2: "Important Events in the Danish Wholesale Gas Market in 2023"
2.1. Evaluation of the market development and regulation	Subsection 2.1.1 and subsection 2.1.1.4 for the Wholesale Electricity Market: Focus Areas for 2024 Subsection 2.1.2 and Box 1: Retail Electricity Market: Focus Areas for 2024 Subsection 2.2.1 and Box 2: Wholesale Gas Market: Focus Areas for 2024 Subsection 2.2.2 and Box 3: Retail Gas Market: Focus Areas for 2024
2.2. Report on the implementation of the Clean Energy Package	Subsection 2.3.
3. The Electricity Market	Subsection 3.1.
3.1. Network regulation and technical functioning	Subsections 3.1. and 3.3
3.2. Competition and market functioning	Subsection 3.1.
4. The Gas Market	Subsection 3.2.
4.1. Network regulation	Subsections 3.2 and 3.3
4.2. Competition and market functioning	Subsection 3.2
4.3. Security of Supply	Subsection 3.3

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 in 2023 was 32.6 TWh which is a decrease of 7.1 pct. compared to 2022. 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. 2023 was a historic year for solar production with solar accounting for roughly 10 pct. of the total production. This is an increase of around 4 pct. point compared to 2022.

For the Danish wholesale electricity market, consumption increased slightly in 2023 compared to 2022. The total consumption was 36.1 TWh which is an increase of 1.7 pct. compared to 2022. The consumption, however, remains below the level for 2021. This low level of consumption is attributed to the continued high price level, as well as greater awareness of and efficiency in energy usage following the historic high energy prices in 2022. The consumption, nonetheless, was historically high during the winter. This can be linked to cold temperatures as well as an expanded deployment of heat pumps. The temperatures in the fourth quarter 2023 were, on average, 15.5 pct. below their fourth quarter average in 2022. The number of heat pumps used in buildings have increased by 26.2 pct. in 2023 compared to 2022.[2]

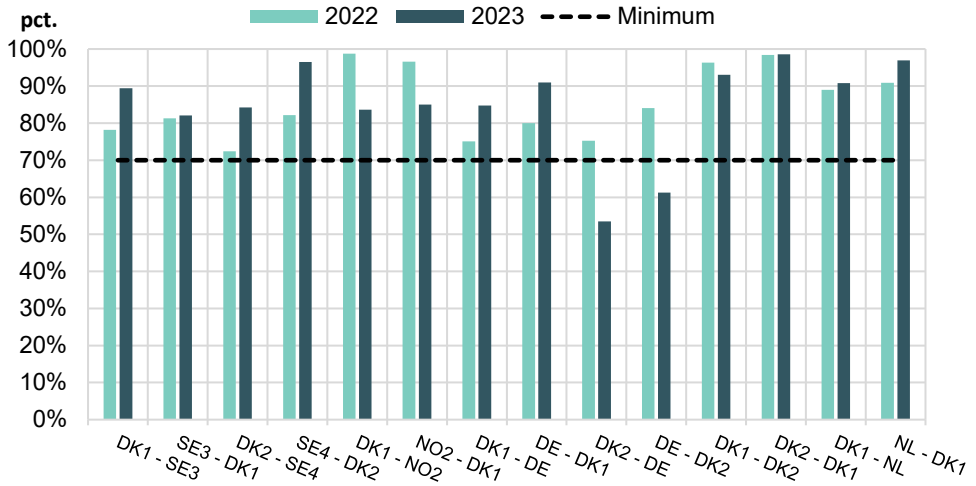
The Danish net imports in 2023 were 3.1 TWh. Denmark has been a net importer since 2021. Net imports increased by a total of 129.5 pct. compared to 2022. Denmark imported electricity mostly from Sweden (9.4 TWh) and exported mostly to Germany (9.0 TWh).

2.1.1.2 Cross-zonal transmission lines

In 2023, an average of 81.1 pct. of the nominal capacity was available for trade on the cross-zonal transmission lines in the export direction. In the import direction, it was 85.5 pct. Figure 1 presents 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.

[2] Source: Newsletter No. 101 from Statistics Denmark, 23 March 2023. Link (in Danish)

FIGURE 1 | **AVAILABLE CAPACITY FOR TRADE, MEASURED AS A PERCENTAGE OF THE NOMINAL TRANSMISSION CAPACITY FOR 2022-2023**



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 dotted line indicates the minimum requirement of 70 pct. capacity according to the 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. From 2 May 2023, countertrade performed in the balancing timeframe (special regulation) was gradually moved from the regulating power market to the intraday market. On 1 July 2023, all structural countertrade was

handled in the intraday market. Downregulation accounted for 1.1 TWh, while 2.6 TWh was traded on the intraday market in 2023.

2.1.1.3 Prices

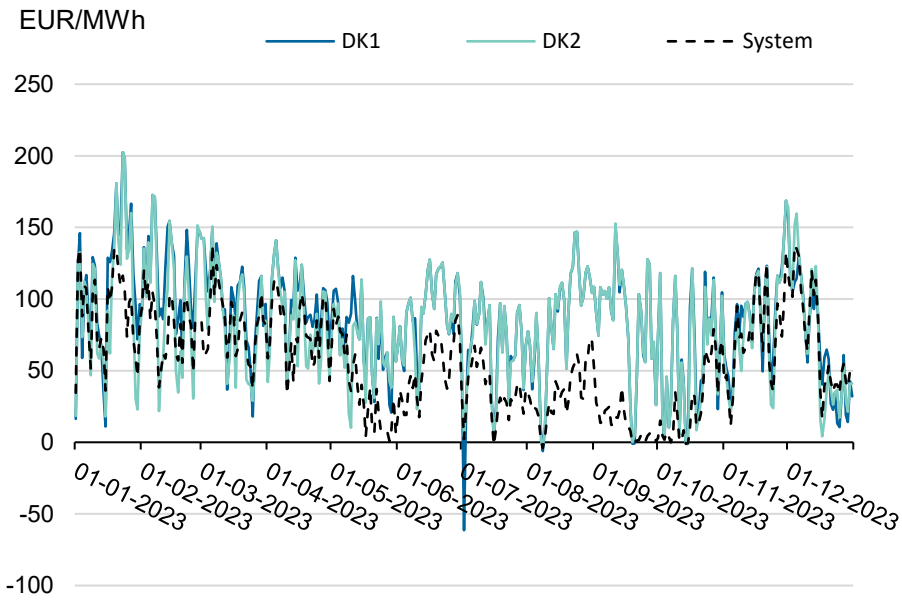
The average hourly prices in the day-ahead market in 2023 for DK1 and DK2 were 86.8 and 81.3 EUR/MWh, respectively cf. Figure 2. This amounts to a price decrease of 60.3 pct. In DK1 and 61.3 pct. in DK2. The average price, however, continues to be above the historical average. The price has increased by 62.2 pct. in DK1 and 56.8 pct. in DK2 compared the historical average from the period between 2016 and 2020. 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 2023 was 56.4 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.

Several factors affect the price of electricity in Denmark: weather conditions, the prices of fuel and CO_2, and the filling ratio of the Nordic hydro reservoirs. The price decreases in 2023 can be linked to a less tightened global natural gas market with high gas storage levels throughout the year in Denmark. Electricity demand in the European Union declined by a further 3.2 pct. in 2023, following a decline of 3.1 pct. in 2022[3]. This put further downward pressure on prices. Finally, the expansion of renewables lead to a number of hours with low prices. The calendar year 2023 saw a record number of hours with negative prices, with 281 hours in DK1 and 231 hours in DK2.

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 85.9 EUR/MWh in DK1 and 82.7 EUR/MWh in DK2 in 2023.

[3] IEA: Electricity 2024. Link

FIGURE 2 | **DAILY PRICE DEVELOPMENT OF THE DAY-AHEAD MARKET IN 2023**

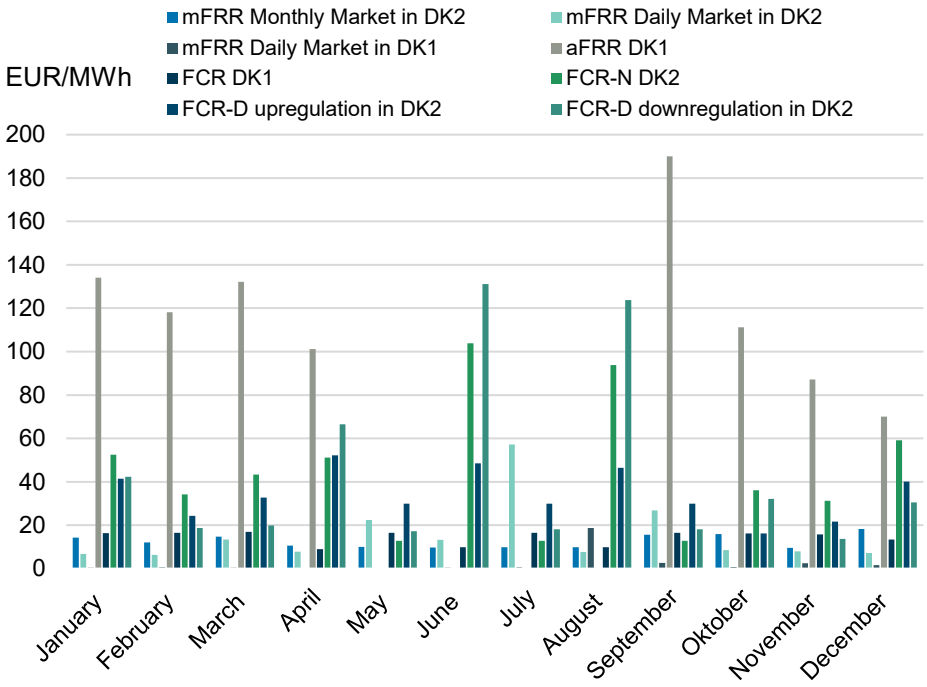


Source: Energinet
Note: The development in day-ahead prices for West Denmark, East Denmark, and the system price.

The Danish TSO, Energinet, purchases reserve capacity and reserve energy to balance the system before the operation hour. The largest reserve capacity market in 2023 was the aFRR market in DK1, in which Energinet purchased reserve capacity for 55.5 mio. EUR. In general, reserves became less expensive than in 2022. The average monthly price of the FCR reserve in DK1 peaked in March with an average price of 16.9 EUR/MWh, cf. Figure 3. The peak price was 492.2 EUR/MWh in 2023. The price decrease was due to a new market condition that applied from 7 September. This new market condition meant that Energinet was no longer obligated to have a share of the total FCR demand in Denmark. This resulted in increased FCR capacity at more competitive prices than the Danish prices. Energinet had previously purchased FCR in DK1 on a Nordic market on condition that 7 MW should be located in West Denmark.

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 2023**



Source: Energinet

Note: The figure shows an overview of reserve capacity prices by type of reserve capacity.

2.1.1.4 Focus areas for 2024[4]

Considering the recent developments in the Danish wholesale electricity market as well as ongoing regulatory changes, DUR will in 2024 focus its market monitoring efforts on specific areas.

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 2024, market surveillance will also intensify focus on the reserve market, as there are specific challenges in certain markets regarding low liquidity.

Market surveillance will in 2024 focus on consequences of the Nordic flow-based market coupling on the Danish wholesale electricity market. The go-live is expected to be in October 2024.

[4] Besides the annual focus areas, DUR also publishes a comprehensive annual work plan for the upcoming three years regarding both electricity, gas, district heating, and waste. The latest work plan for the period between 2024 and 2026 was published in December 2023. Link (in Danish).

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.

2.1.1.5 Important events in 2023

In 2023, there have 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 2023.

TABLE 1 | **IMPORTANT EVENTS IN THE DANISH ELECTRICITY MARKET IN 2023**

1 January 2023	The Danish distribution system operators (DSOs) can now choose to implement Tariff Model 3.0, which allows for increased time differentiation in tariff sizes. Find out more here.
1 January 2023	The tax on electricity is reduced to the EU minimum rate (0.8 cents per kWh) for six months. Find out more here.
2 May 2023	From this date, special regulation could gradually be moved from the regulating power market to the intraday market. Find out more here.
29 June 2023	DUR approves Energinet's reported method, which introduces an mFRR energy price every 15 minutes, forming the basis for an imbalance price every 15 minutes that market participants will be settled against. This is part of the transition to first a Nordic mFRR energy activation market and subsequently the European platform for the exchange of manually activated balancing energy, MARI. Find out more here.
2 July 2023	All structural countertrade has been moved from the regulatory power market to the intraday market. Find out more here.
12 July 2023	The Nordic regulators (NordREG) approved, as part of the implementation of flow-based, that 6 months of external parallel runs (EPR) could commence. Find out more here.
23 October 2023	DUR approves Energinet's method for market-based allocation of transfer capacity for the exchange of mFRR and aFRR balancing capacity in the Nordic capacity market. Find out more here.
29 December 2023	Go-live for the Viking Link transmission cable between Western Denmark and the United Kingdom. Find out more here.

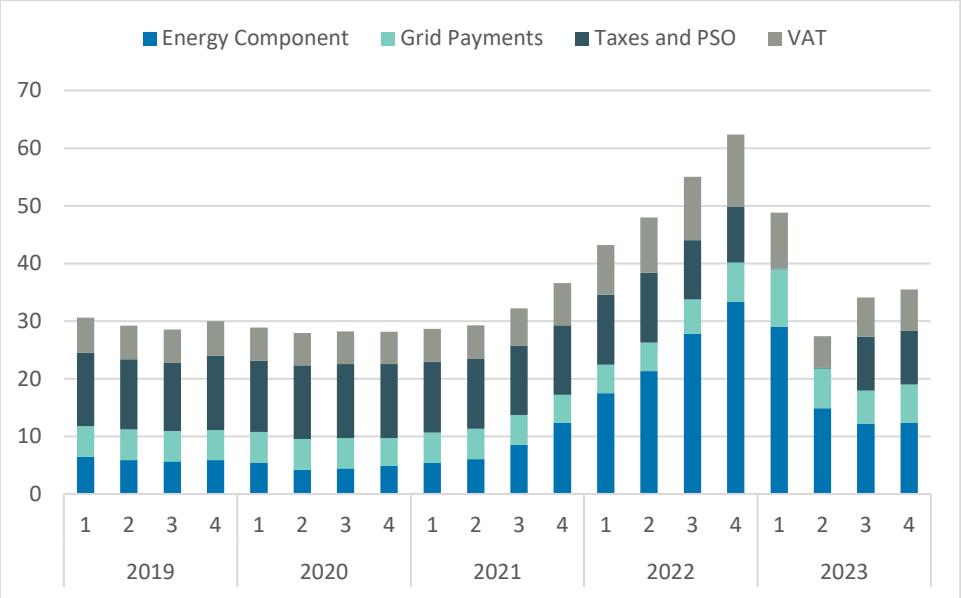
2.1.2 Retail electricity market

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 enabling consumers to make an informed decision about what product(s) to choose. The report for 2023 is not yet available as of September 2024.

In 2023, the average total electricity price for Danish household consumers was 36.4 cEUR/kWh. It is a 30 pct. reduction, compared to 2022, when the price was 52.1 cEUR/kWh, cf. Figure 4

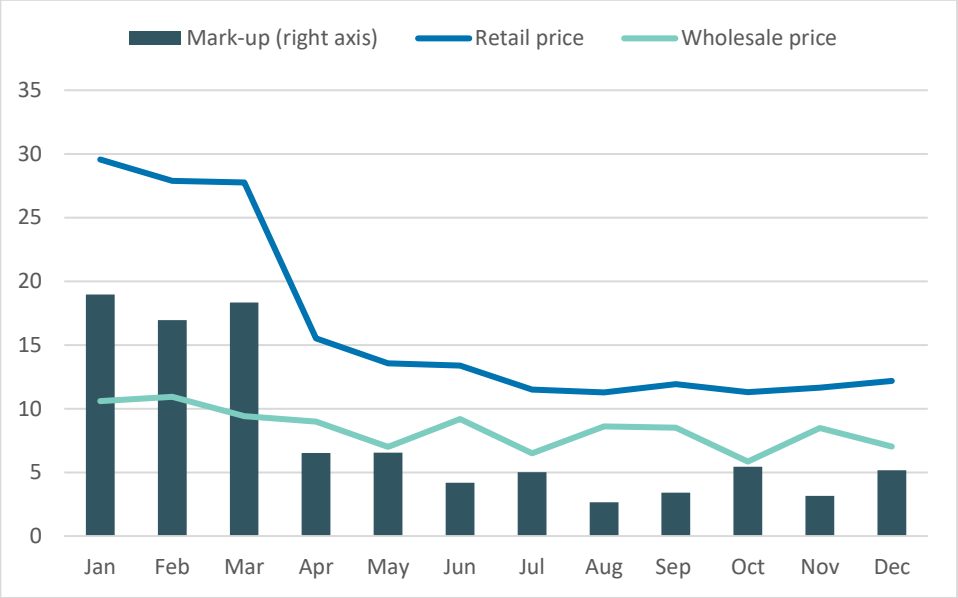
FIGURE 4 | **RETAIL ELECTRICITY PRICE FOR HOUSEHOLD CONSUMERS, 2019-2023**



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

The energy markets experienced volatile changes throughout 2022, leading to a decoupling of the retail price of variable electricity products from the wholesale price. In 2023, the relationship between the retail price of variable electricity products and the wholesale price stabilized, returning to the pre-2022 levels, cf. Figure 5. This has also led to reduced mark-ups since April.

FIGURE 5 | **CORRELATION BETWEEN RETAIL AND WHOLESALE ELECTRICITY PRICES FOR 2023**

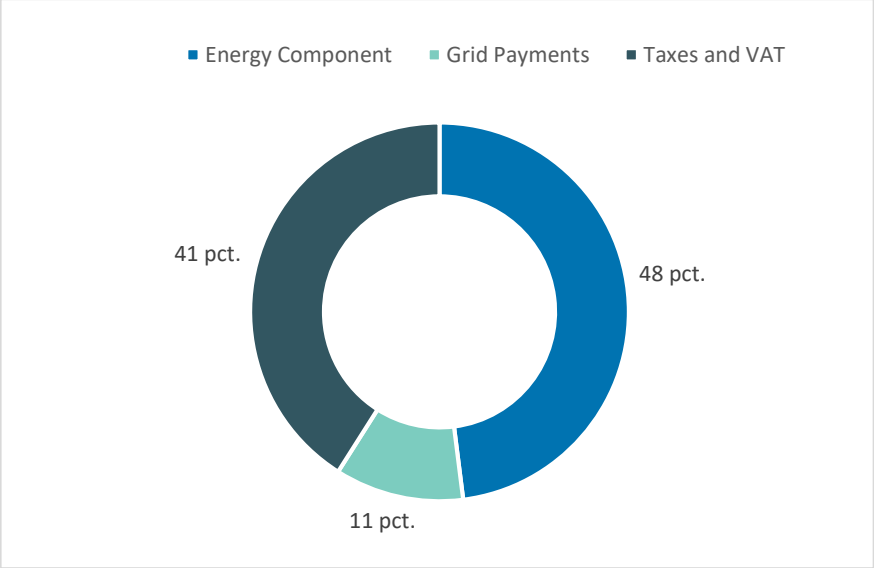


Source: The Danish Utility Regulator

In 2023, the average price paid by household consumers for electricity comprised 48 pct. energy component payments, 11 pct. grid payments[5], and 41 pct. taxes, including value-added tax (VAT) payments, cf. Figure 6. Taxes and VAT payments were replaced by the energy component parts as the predominant price elements in 2023. The Danish energy tax (*elafgift*), which forms part of the electricity price payable by household consumers, was reinstated in full on 1 July 2023 after the expiration of an interim reduction. The interim measure was introduced to provide relief to household consumers affected by the increase in energy prices.

[5] Grid payments cover DSO grid tariffs, DSO subscription fees, TSO grid, and system tariffs.

FIGURE 6 | **BREAKDOWN OF TOTAL ELECTRICITY PRICES FOR HOUSEHOLD CONSUMERS, 2023**



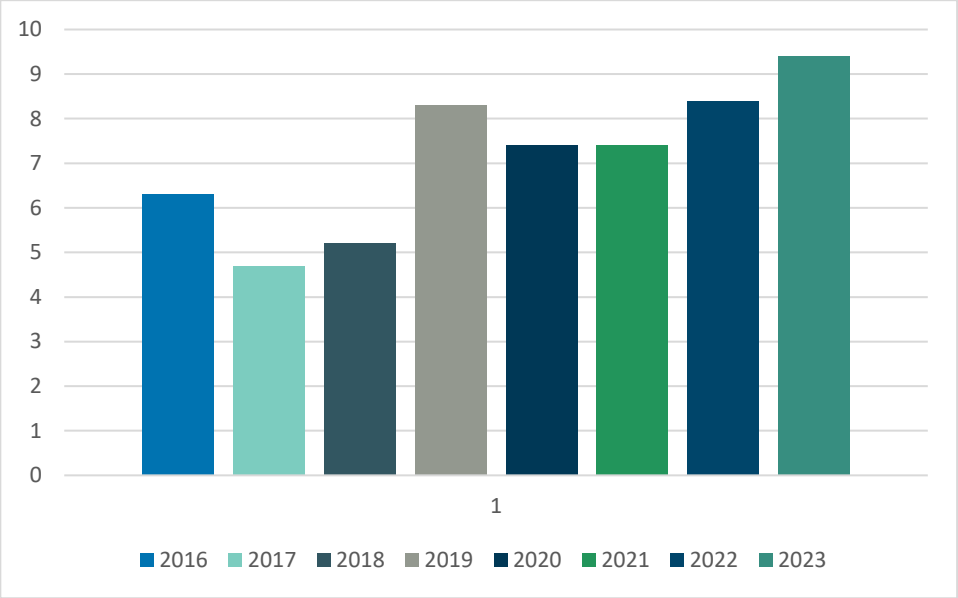
Source: The Danish Utility Regulator
The calculations are based on 4,000 kWh as an annual household consumption.

2.1.2.2 Market competition

In 2023, there were approximately 56 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 9.4 pct. in 2023 compared to 8.4 pct. in 2022, i.e. an increase of approximately 1 pct.[6]

[6] Energinet, Datahub, Detailmarkedsrapporten. Link (in Danish)

FIGURE 7 | **ELECTRICITY SUPPLIER SWITCHING RATES, 2016-2023**



Source: Energinet

In 2023, DUR continued the implementation and performance of the supervisory tasks arising out of the *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 also completed a review of whether suppliers issue final invoices in a timely manner to consumers who change suppliers, including whether prepayments and excess payments are repaid to consumers no later than the time of forwarding the final invoice. Findings indicated that there is room for improvement of suppliers' practices, and DUR has published an advisory paper aimed at raising consumer awareness and supplier compliance with the regulatory framework. DUR launched an updated and revised version of the comparison tool, *elpris.dk*, in January 2022. A further update of the comparison tool is currently in the development stages. Implementation and launch of the updated comparison tool is planned for Q3 and Q4 2024.

2.1.2.3 Focus areas for 2024

DUR has focus areas that are determined annually for the monitoring of the retail electricity market in Denmark. In 2023, DUR monitored whether electricity suppliers had been reporting and updating to the price comparison tool, *elpris.dk*, continuously and correctly. DUR will continue and strengthen our efforts to reduce non-compliance by electricity suppliers with their obligations to publish and update product information on their webpages and report and update product information on *elpris.dk* in 2024. DUR has decided to suspend work on a combined comparison price tool for electricity and gas for the time being. Instead, DUR will be focusing on improving and updating the price comparison tool for electricity, *elpris.dk*. DUR will also focus on the implementation of the Electricity Market Directive and the consequential need to update the regulatory framework governing the retail electricity market.

BOX 1 | **RETAIL ELECTRICITY: FOCUS AREAS FOR 2024**[7]

In 2024, DUR will continue and strengthen the supervision of the Executive Order No. 2648 of 2021 to ensure continued and improved 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.

Instead of continuing work on a combined price comparison tool comprising gas as well as electricity, DUR will be focusing on improving the price comparison tool for the electricity retail market. This will include improvements to the actual comparison tool itself as well as clarification and updating of the regulatory framework, including the executive order governing electricity suppliers' reporting of standard prices, tariffs, discounts, and terms on elpris.dk (Executive Order No.1279 of 2016).

[7] Besides the annual focus areas, DUR also publishes a comprehensive annual work plan for the upcoming three years regarding both electricity, gas, district heating, and waste. The latest work plan was publish in December 2023. Link (in Danish).

2.2 Gas

2.2.1 Wholesale gas market

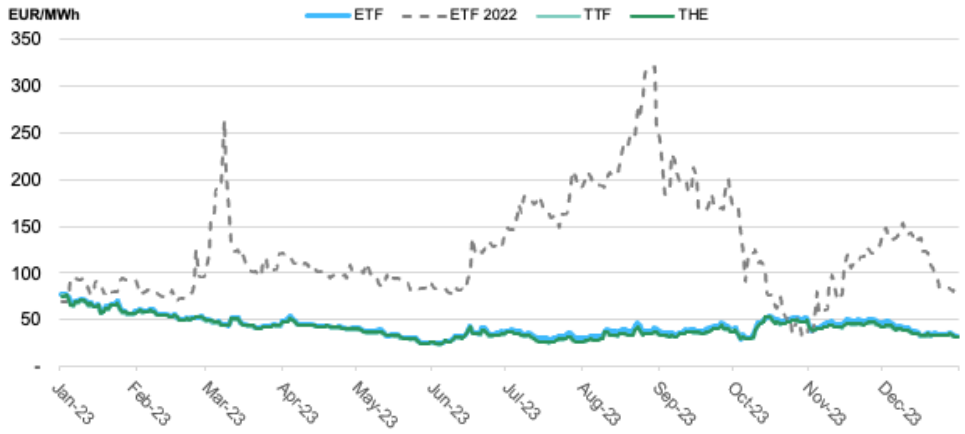
On 1 January 2023, the day-ahead price started at 77.30 EUR/MWh. Since the beginning of the year, the price gradually fell, and on 4 June, it was 24.33 EUR/MWh before it began to rise again.

In the first quarter of 2023, the average price for day-ahead ETF was 55.58 EUR/MWh. In the second and third quarters, the average prices were 36.75 EUR/MWh and 36.34 EUR/MWh, respectively. In the fourth quarter, the average price rose again to 43.18 EUR/MWh.

The Danish spot prices generally closely follow the price developments of other Northwestern European gas markets. It is noted that the Danish delivery points ETF and GTF are small markets compared to the German (THE) and Dutch (TTF) markets.

Figure 8 shows the price development for day-ahead gas in Denmark (ETF), the Netherlands (TTF), and Germany (THE) throughout 2023. In contrast to 2022, the prices remained relatively steady, averaging between 43 EUR/MWh and 77 EUR/MWh, with the ETF and TTF showing very similar trends, and the THE following closely.

FIGURE 8 | **PRICE DEVELOPMENT FOR DAY-AHEAD IN DENMARK, THE NETHERLANDS, AND GERMANY, 2023**

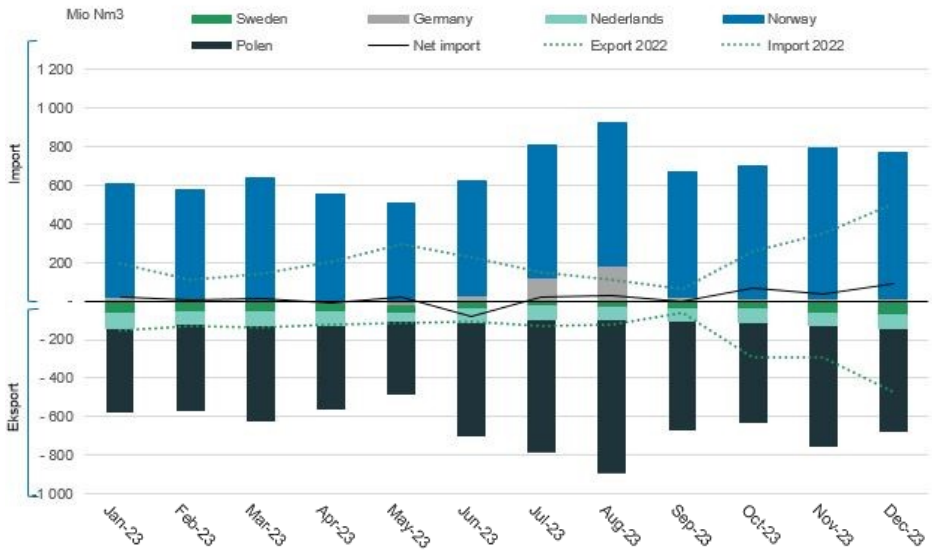


Source: The Danish Utility Regulator based on data EEX.
Note: Spot prices on the day-ahead market is the European Gas Spot Index (EGSI) for the Danish Exchange Transfer Facility, the Dutch Title Transfer Facility, and the German Trading Hub Europe. EGSI is calculated for each delivery day as a volume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

2.2.1.1 Import and export

Denmark continued to be a net importer of gas in 2023, importing 8,165 million m³, an increase of 217 pct. The explanation for this enormous increase is that Denmark has become a transit country. Through the Baltic Pipe, Denmark facilitates gas trade flowing from Norway to Poland. Figure 9 illustrates import and export per country for 2023.

FIGURE 9 | **IMPORT AND EXPORT PER COUNTRY, 2023**



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

The opening of the Baltic Pipe means that Denmark has become a transit country for gas. Approximately 80 pct. of the capacity in the Baltic Pipe is reserved for the next 15 years to transport gas from Norway to Poland through Denmark. All net-users in the Danish transmission system, however, have the opportunity to purchase the remaining available capacity in the pipeline and, for example, supply Danish consumers with gas from Norway.

The commissioning of the Baltic Pipe has improved Danish supply security as it has opened up the supply of gas from new markets. The total gas import from Germany was 435 million m³ in 2023, corresponding to a decrease of 76.4 pct. compared to 2022. Effective as of 1 October 2022, Germany has introduced a neutrality charge of 1.86 EUR/MWh on gas, which means that gas exported out of Germany is subject to a penalty charge. Therefore, the reduced import of gas from Germany is good news for Danish consumers.

2.2.1.2 Production and consumption

Denmark's production of natural gas takes place in the Danish part of the North Sea, where 17 fields produced gas until 21 September 2019. Since then, the Tyra rig has been closed due to renovation and modernisation. The Tyra rig reopened on 22 March 2024.

Since 2019, Denmark has only had 10 active gas fields in operation. Due to the shut-down of the Tyra rig, most of the gas has been exported to the Netherlands through the offshore pipelines Tyra West-F3 and NOGAT in 2023.

Figure 10 shows gas production and consumption over time since 2015. Gas production from 2015-2019 ranged between 4 and 4.5 billion m³ per year. In 2018 and 2019, gas production fell to 3.90 and 2.57 billion m³, respectively. Natural gas production was 1,265 million m³ in 2023. This is the lowest recorded level since 1985. Production in 2023 is 5 pct. lower than in 2022 and 15 pct. lower than in 2021.

There has been a significant increase in the production of biomethane in Denmark in recent years, with production rising from 26 million m³ in 2015 to 603 million m³ in 2023. The share of biomethane production in Danish natural gas production was 31 pct. in 2023. This is 5 pct. higher than in 2022 and 21 pct. higher than in 2021. At the same time, biomethane production accounted for 32.4 pct. of total Danish gas consumption in 2023.

FIGURE 10 | **ANNUAL GAS PRODUCTION AND CONSUMPTION, 2015-2023**

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

Note: Bio-natural gas is upgraded biogas that can be injected into the gas grid and traded on the gas market.

2.2.1.3 Utilisation of gas storages

Gas Storage Denmark's two storage facilities had a total available storage capacity of 9.940 TWh in storage from 1 January 2023 to 31 March 2023, after which it fell to 9.175 TWh for the rest of 2023. The storage capacity was sold out in 2023.

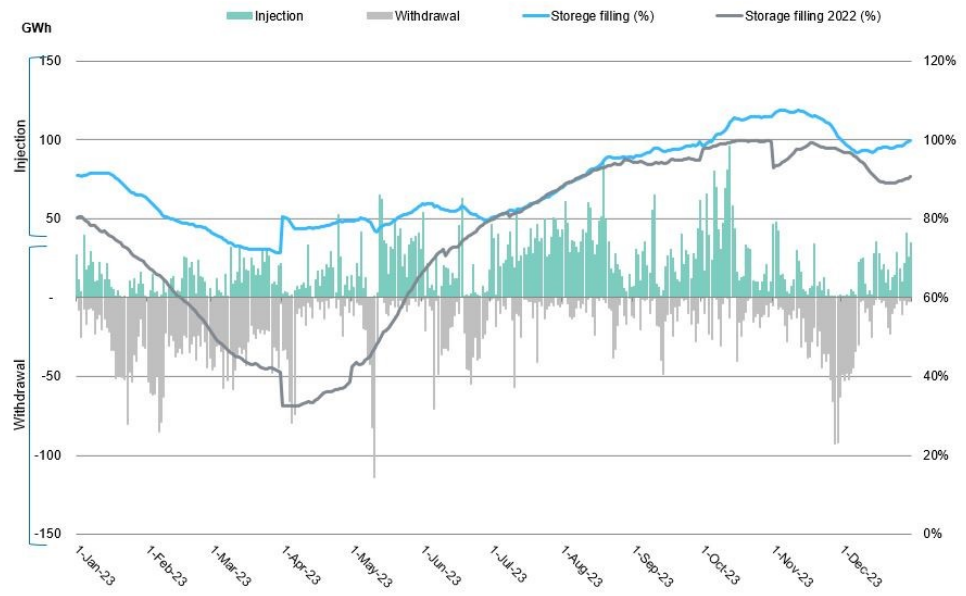
The Danish heating season for gas normally begins around 1 October and continues until 31 March. In the first winter months of 2023, the Danish gas storage facilities got depleted relatively slowly, partly due to a mild winter, which led to a reduction in the demand for gas, especially for heating.

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.

Particularly during the period when the Tyra rig has been shut down due to an extensive renovation and modernisation, the Danish gas storage facilities have played a central role in ensuring the security of supply for the country. The Baltic Pipe opened in 2022 and has resulted in a reduced imports of gas from Germany, where Denmark mainly imported gas from through the Ellund connection.

In Figure 11, the graph illustrates that gas withdrawals exceed injections during the winter months from January to March, and again from mid-November to December. Conversely, gas is replenished in storage during the summer months, ensuring that Denmark meets EU regulations.

FIGURE 11 | **STORAGE FILLING, INJECTION AND WITHDRAWAL, 2023**



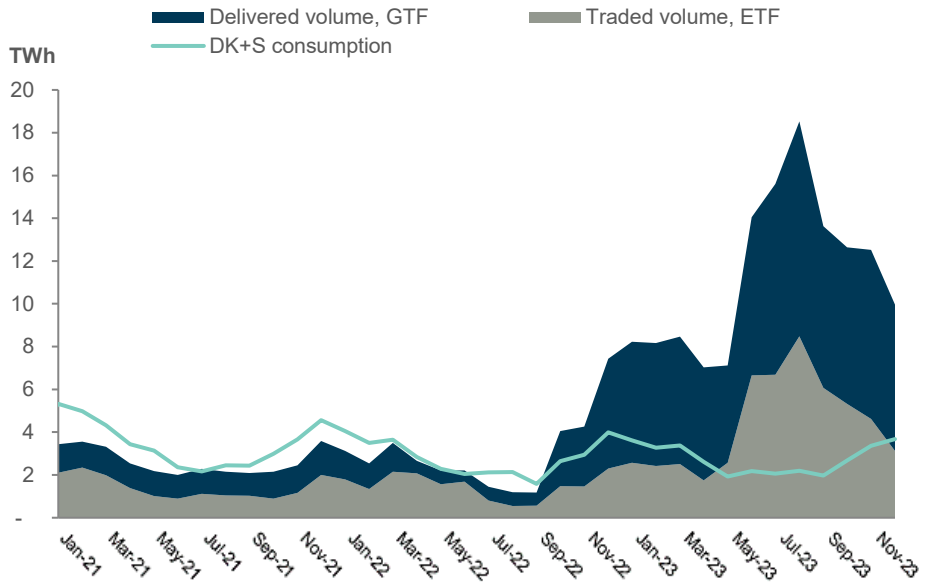
Source: The Danish Utility Regulator based on data from Gas Storage Denmark

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 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 2023, 53 TWh was traded on ETF, while 83 TWh was delivered through GTF, as shown in Figure 12. GTF served as the primary delivery point that year, due to increased volumes facilitated by the Baltic Pipe.

FIGURE 12 | **TRADED VOLUME AT ETF AND GTF, 2021-2023**



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 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. DUR monitors the development.

2.2.1.5 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 the 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 Q2 and Q3 2024.

2.2.1.6 Focus areas for 2024

DUR will focus on several key areas within the wholesale gas market in 2024. Following the commissioning of the Baltic Pipe at full capacity on 1 November 2022, DUR will closely monitor how this new pipeline system impacts the Danish gas market. Additionally, DUR will assess how shippers make use of the new opportunities for gas imports and exports, focusing on the broader integration of the Danish gas system with neighbouring markets.

Given the ongoing uncertainty around Europe's security of supply due to reduced imports of Russian gas and the increased reliance on LNG, the Danish gas storages remain crucial. DUR will continue to monitor their utilisation to ensure that they are used efficiently, benefiting both Danish consumers and companies.

The Ellund interconnection point between Denmark and Germany is essential for the integration of Denmark into the broader North-West European gas market. DUR will maintain a focus on the efficient and appropriate utilisation of the Ellund interconnection point to support effective price setting and the flow of gas into and out of Denmark, cf. box 2

BOX 2 | **WHOLESALE GAS: FOCUS AREAS FOR 2024**[8]

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.

Security of supply is still an important matter, thus the Danish gas storages plays an important role in the Danish gas system. DUR will monitor the utilisation of the storages to ensure an efficient use which benefits both Danish consumers and companies.

2.2.1.7 Important events in 2023

In 2023, 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 IN THE DANISH GAS MARKET IN 2023**

19 December 2022	The Council Regulation (EU) on strengthening solidarity through better coordination of gas purchases, reliable price benchmarks, and cross-border gas exchange enters into force. Read more here.
22 December 2022	The Council Regulation (EU) establishes a market repair mechanism to protect EU citizens and the economy from extremely high prices. The regulation aims to prevent unreasonable increases in energy prices. Read more here.
28 December 2022	Amendment to the Act on Gas Supply, the Act on Energinet, and the Act on Electricity Supply enters into force. Read more here.
3 March 2023	DUR approved the method for capacity conversion in the gas transmission system. Read more here.
31 March 2023	The EU Commission sets the technical details for the application of the market repair mechanism to derivatives linked to virtual trading points in the Union, except for TTF. The regulation aims to ensure stability and transparency in the energy markets. Read more here.
1 June 2023	Germany raises the gas storage neutrality charge to 1.45 EUR/MWh.
24 August 2023	The EU Council adopts an extension of the target for a voluntary reduction of 15 pct. in gas consumption for member states from 1 April 2023, to 31 March 2024. If a "Union alert" is triggered, the reduction

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

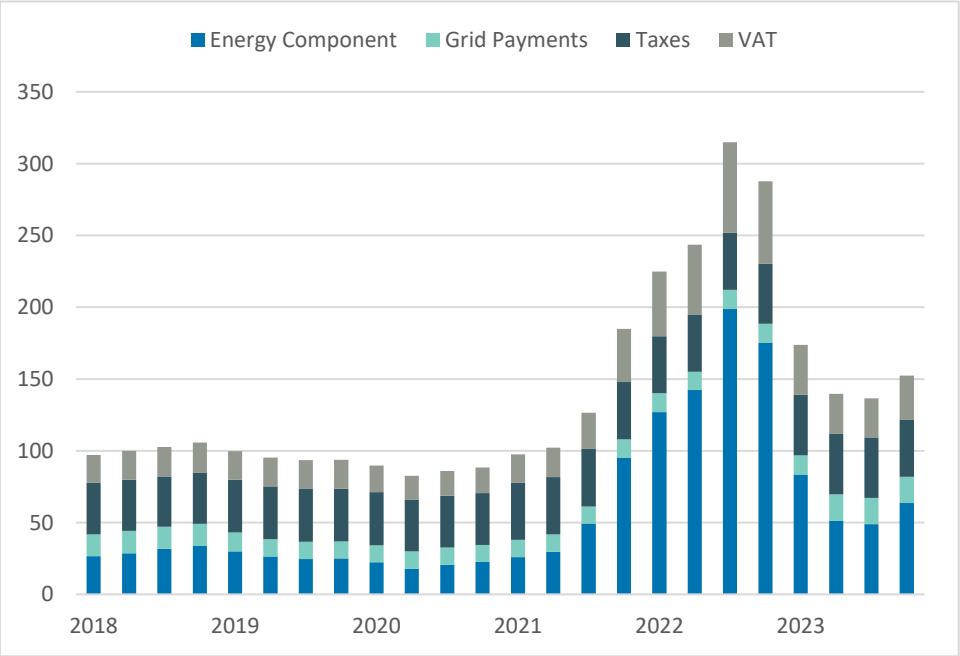
	becomes mandatory. The target is intended to help EU achieve its gas storage goals and prepare for the next winter. Read more here.
24 August 2023	Evida connects biogas plant No. 57. Read more here.
19 December 2023	A political agreement has been reached in the EU Council on to extend three emergency regulations to ensure energy supply and protect EU citizens from high energy prices resulting from Russia's invasion of Ukraine. The extensions include measures for solidarity, acceleration of renewable energy, and protection against extreme gas prices. The agreement now applies until 2024 and 2025. Read more here.

2.2.2 Retail gas market

2.2.2.1 Retail gas prices

In 2023, the average total gas price for retail consumers (both household and non-household) was 150.6 cEUR/m^3, which is a decrease by 44 pct. compared to 2022, when the price was 267.7 cEUR/m^3, cf. FIgure 13. This decrease is mainly due to the change in the energy component price. There was a slight increase in the payments to the grid companies, while the remaining price elements saw almost no change (e.g. taxes and VAT).

FIGURE 13 | **RETAIL GAS PRICES FOR CONSUMERS, 2017-2023**



Source: The Danish Utility Regulator

2.2.2.2 Market competition

In 2023, there were thirteen suppliers offering natural gas products to the approximately 360,000 gas retail consumers in Denmark. As of 1 April 2023, the Danish gas retail market adopted a structure mirroring that of the electricity retail market. This means, for example, that consumers must actively choose a gas supplier, who will then be obliged to supply gas to them, and that a default supplier is no longer appointed by the Danish Energy Agency (DEA). If a gas supplier goes bankrupt, their retail customers will automatically be transferred to another supplier by the relevant DSO.

Consumers can choose between three types of gas products, i.e. universal service obligation products, basic products[9], and market-based products. Most retail consumers (approximately 94 pct.) in Denmark have a market-based product.[10]

Following the introduction of a new structure for the gas retail market, DUR must determine the price for a product to which customers will be transferred in the event of their gas supplier's bankruptcy. The price must be determined and announced no later than 1 December each year.

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 3 contains a summary of the areas on which DUR will be focusing its monitoring efforts within the retail gas markets in 2024.

[9] 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 unless they choose a different supplier/product.

[10] 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.

2.2.2.3 Focus areas for 2024

BOX 3 | **RETAIL GAS MARKET: FOCUS AREAS FOR 2023**[11]

An amendment to the *Gas Supply Act* was passed by the Danish Parliament (*Folketinget*) in 2021. The amendment included implementation of a new retail market design mirroring the electricity retail market, i.e. a supplier-centric model with removal of the universal service obligation of licensed default suppliers. The key changes came into force on 1 April 2023, including four new and/or revised Executive Orders regulating the conduct of gas suppliers in the retail market.

In 2024, DUR will continue to monitor the conduct and compliance of gas suppliers with their obligations under the regulatory framework. DUR assumed responsibility for the ownership and operation of *gasprisguiden.dk* (the comparison tool for the gas retail market) on 1 April 2023. DUR's primary focus areas in terms of the retail gas market will continue to include adjustments and upgrading of *gasprisguiden.dk*, as well as monitoring the continued compliance of gas suppliers with their obligations to publish correct price information on their websites as well as reporting the same to *gasprisguiden.dk*.

2.3 Contribution to Regulation on the internal market for electricity and the Electricity Directive

DUR has played an active role in contributing to the Electricity Regulation (EU) 2019/943 and Electricity Directive (EU) 2019/944. These contributions primarily focus on establishing a European framework that enhances flexibility in electricity consumption, aligning with Denmark's and the EU's energy and climate policy goals. Additionally, DUR has worked to ensure adequate hedging opportunities for market participants. These contributions mainly came through DUR's work with ACER and CEER and Nordic energy regulators' cooperation (NordReg).

In 2023, DUR held the NordREG presidency. DUR maintained its emphasis on the efficient implementation of terms and conditions related to balancing and system operation within the Nordic region.

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

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.[12]

The DSOs are obliged to complete an annual compliance program 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:

In June 2023, the NordREG Board established the Nordic Regional Coordination Centre Task force (NRCC TF). This Task Force has the responsibility to arrange a yearly oversight of the Nordic Regional Coordination Centre (NRCC). As 2023 was the first year of the NRCC TF, the focus area for the 2022-oversight was to evaluate the NRCC's annual report of 2022. The NRCC TF did not select any other topics for a more detailed oversight. In connection with the oversight of the NRCC, the NRCC TF published an annual report. The oversight of 2023 will commence in august 2024.

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

As of 30 June 2023, DUR conditionally approved Energinet's new method for a system tariff that Danish electricity customers pay to cover Energinet’s costs for ensuring security of supply in particular. The conditional part of the approval concerns the implementation of a reduced tariff for a new buyer category, “large customers”, which will include PtX manufacturers, very large industrial companies and data centers. According to the methodology, large consumers can obtain a reduced volume tariff for the part of their energy consumption that exceeds 100 GWh per year. Based on submitted data and Energinet's statement, DUR will assess whether DUR’s approval can be sustained in the future.

In February 2024, DUR made a new decision in relation to the conditional parts of the approval from June 2023. Energinet has appealed this decision to the Danish Energy Appeals Board, as Energinet claims that DUR with the decision from February 2024 has changed the original method for a system tariff. The appeal case is currently under processing.

From 1 January 2024, companies with their own electricity production must pay tariffs to Energinet corresponding to the full costs associated with the delivery of the electricity they receive from the grid. This is a new tariff on moment basis, which replaces an existing principle of net-fixing in tariffing. This new tariff on moment basis has now been approved after DUR being notified hereof by Energinet on 22 June 2022. Energinet has developed the methodology as part of Energient’s ongoing efforts to modernise the overall tariff design, among other things in light of the political agreement to abolish the PSO system by the end of 2021.

In August 2023, DUR has approved a pilot project for temporary connection of production facilities to the grid, which primarily are solar and wind farms. The pilot project was developed by Energinet, which with the method for the first time allows new production facilities to be temporarily connected directly to overhead lines. Temporary connection of new production facilities to the grid will be possible until the grid is sufficiently expanded for such new production facilities to be connected to a substation. DUR's approval of the pilot project is subject to conditions.

Specific to distribution:

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. DUR has since then received notification of deviations from “Tarifmodel 3.0”. In addition, a number of companies have not transitioned to “Tarifmodel 3.0” yet. DUR will publish a report on the topic during 2023/2024.

In December 2023, DUR takes note of Green Power Denmark's new guidance on connection with limited grid access for generation plants. In the future, an electricity producer on the distribution grid will have the opportunity to be connected to the electricity grid at a lower cost. This requires that the electricity producer in return accept that the grid operator can interrupt or reduce the electricity producer's deliveries instead of the grid operator having to expand or reinforce the grid. This model is included in Green Power Denmark's new industry guide for terms and conditions for grid connection with

limited grid access, which DUR has taken note of in December 2023. DUR taking note of an industry guideline means that individual grid companies can expect to have their use of e.g. limited grid access approved to the extent that their specific schemes are prepared in accordance with such industry guidelines.

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 the *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
- Internal Norgewegian bidding zones
- Norway (NO4) and Finland (FL)

- Norway (NO2) and Denmark (DK1)
  Norway 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)
- Norway (NO2) and the Netherlands (NL)
- Norway (NO2) 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 the *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 2023:
In 2023, DUR took key actions in respect of the scope of the *Commission Regulation (EU) 2015/1222 of 24 July 2015 establishing a guideline on capacity allocation and congestion management (the CACM Regulation)*:

On the 10 of August 2023, DUR approved Energinet's proposal on access rules for capacity trading on the electricity transmission interconnector between Denmark and the UK, Viking link.

On the 28 of November 2023, DUR approved the proposal by Energinet to issue LTTRs corresponding to 600 MW on the Viking Link transmission cable to provide market participants access to risk hedging in the UK forward market pursuant to the *Article 30 (6) of the FCA regulation*. The decision is made based on the previous analysis that there was insufficient hedging opportunities.

Key actions under the EB Regulation in 2023:
In 2023, DUR took key actions in respect of the scope of the *Commission Regulation (EU) 2017/2195 of 23 November 2017 establishing a guideline on electricity balancing (the EB Regulation)*:

On the 29 June, DUR approved Energinet's amended method that introduces an mFRR energy price every 15 minutes. The amended method forms the basis for an imbalance price every 15 minutes that market participants will be settled against. This is part of the

transition to first a Nordic mFRR energy activation market and subsequently the European platform for the exchange of manually activated balancing energy, MARI.

On 16 October, DUR approved, as per request of Energinet, a new Nordic capacity calculation method for the balancing timeframe pursuant to the *Article of 37(3) of the EB Regulation.* The new method is part of the transition to a flow-based method for capacity calculations in the Nordic electricity market.

On the 23 October, DUR approved Energinet's method for market-based allocation of transfer capacity for the exchange of mFRR and aFRR balancing capacity in the Nordic capacity market, pursuant to the *Article 5(3)* and the *Article 41(1) of the EB regulation.*

Key actions under SO GL[13] during 2023:

- As of 29 June 2022, the Nordic TSOs proposed amended dimensioning rules for FCR in the Nordic synchronous area (*SO GL Article 153*). DUR amended and approved the methodology 3 April 2023. The amended proposal facilitates for the division of the FCR-D into Dynamic FCR-D and Static FCR-D as defined in the amended Nordic synchronous area methodology for additional properties of the FCR in accordance with the *Article 154(2) of SO GL*.

- As of 29 June 2022, the Nordic TSOs proposed amended additional properties for FCR in the Nordic synchronous area (*SO GL Article 154(2)*). DUR amended and approved the methodology as of 3 April 2023. The amended proposal has introduced new requirements for FCR-N, as well as separating FCR-D into two new products, Dynamic FCR-D and Static FCR-D. In the proposed methodology, there are requirements to these products for both upwards and downwards regulation.

- As of 29 June 2022, the Nordic TSOs proposed amended dimensioning rules for FRR in the Nordic synchronous area (*SO GL Article 157(1) and (2)*). DUR amended and approved the methodology as of 13 April 2023. The amended proposal increases the level of detail, and improves transparency of the dimensioning process of FRR compared to the previous approved methodology, and describes a method to determine the ratio between aFRR and mFRR when dimensioning FRR.

Key actions under ER NC during 2023[14]:
There have been no key actions under ER NC during 2023.

Key actions under DCC NC during 2023[15]:

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

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

[15] *Commission Regulation (EU) 2016/1388 of 17 August 2016* establishing a Network Code on Demand Connection.

As of 17 August 2023, Energinet proposed amendments to DUR's decision of 27 May 2019 on the national requirements determined according to the DCC NC. The amendment was to the requirements regarding reactive power (*article 15*), the devices and settings required (*article 16*), and the requirements of the performance of the recordings of transmission-connected demand facilities or transmission-connected distribution facilities (*article 21*). DUR approved the application 31 October 2023.

Key actions under RfG NC and HVDC NC during 2023[16]
There has been no changes to the requirements specified by the TSO to the RfG or the HVDC NC during 2023.

3.1.4 Electricity smart meters

Legal basis: Annex II

Pursuant to the *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.

3.1.5 'Green Addition' as compensation to the DSO

A political agreement reached on 10 June 2024, establishes that DSO electricity grid companies will receive an electrification surcharge to cover estimated additional costs of reinforcing and expanding the electricity distribution network.

This new surcharge, effective from 1 January 2025, will raise the revenue caps for grid companies, ensuring their financial capacity to maintain a robust electricity distribution network in support of the green transition.

The Danish Energy Agency will now be tasked with developing the analytical framework, allowing the minister to reassess the surcharge every five years. The first review is set for 2027, with any adjustments to take effect from 1 January 2028.

In 2024, DUR provided a recommendation on how the surcharge should be modelled and integrated into the economic regulation. While the recommendation has largely been followed, the parameters adopted in the model are more favourable to the DSO companies than those initially suggested by DUR.

[16] *Commission Regulation (EU) 2016/631 of 14 April 2016* establishing a network code on requirements for grid connection of generators and *Commission Regulation (EU) 2016/1447 of 26 August 2016* establishing a network code on requirements for grid connection of high voltage direct current systems and direct current-connected power park modules.

3.2 Gas[17]

3.2.1 Unbundling of DSO

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

The unbundling requirements in the *Article 26 of the Gas Directive 2009/73*[18] regarding vertically integrated gas distribution system operators (DSO) are transposed into provisions in the *Danish Gas Supply Act* and in the *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[19]. 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)

The European network code on balancing (NC BAL)[20] required national implementation by 1 November 2015.

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[17] The EU hydrogen and gas decarbonisation package was adopted in May 2024. It updates the rules on the EU natural gas market set out in the *Gas Directives 2009/73/EC* and the *Gas Regulation 715/2009* and introduces a new regulatory framework for dedicated hydrogen infrastructure. The revised gas market rules were published in the EU Official Journal on 15 July and entered into force on 5 August 2024. The revised gas directive will enter into force after its national implementation in the Member State at the earliest 5 August 2026. From 5 August 2024, the Danish Gas Supply Act will be the applicable act until the national implementation of the revised gas directive.

[18] *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*.

[19] 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.

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

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.

The balancing zone in Denmark is a Joint Balancing Zone (JBZ) with Sweden. The main purpose of 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 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 JBZ. Therefore, the regulators have requested that another evaluation of JBZ be conducted after the 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 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 9.4 TWh in 2023. 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 6.5 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 indication 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)

<u>In relation to transmission:</u>
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.

<u>In relation to distribution:</u>
DUR has approved a number of methodologies submitted by the three subsidiary companies of the distribution system operator Evida:

- On 31 March 2023, DUR approved a methodology for the calculation of a number of prices and fees covered by the three subsidiary companies
- On 31 March 2023, DUR approved a methodology setting the rules for gas distribution
- On 31 March 2023, DUR approved a methodology amending the conditions of gas distribution
- On 31 May 2023, DUR approved a methodology setting the conditions for a connection to the distribution system

Further, DUR in 2023 have guided Evida prior to Evida's submission of a general tariff methodology replacing the current methodology from 2004 by 1 January 2025. At the time of writing, DUR is assessing Evida's general tariff methodology.

3.2.6 Cross-border infrastructure, allocation, and CM

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

In 2023, he Danish Congestion Management Procedure (CMP) instruments were not used, although there were several events of contractual congestion at the Entry North Sea Point, which connects the Danish transmission system with the Norwegian upstream system. The Danish TSO, Energinet, has informed that net users in these cases used interrubtible overnomination to acquire capacity. Energinet has not been able to provide further information about the events. DUR has highlighted that Energinet are obliged to provide this kind of information and will continue to monitor the situation. On 27 June 2023, Energinet further applied for method approval of CMP instruments.at Interconnection Point Faxe, which connects Denmark with the Polish transmission system. DUR has not yet published a decision.

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 2025 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 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 2022, the average consumer had 24 minutes of interruption. 24 minutes of interruption corresponds to having electricity in your power plug on average 99.995 pct. of the time.[21]

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 Tyra platform restarted in March 2024, but is not yet running at full capacity. The Baltic Pipe, commenced 1 October 2022, will supply Denmark and Poland with up to 10 bcm of Norwegian gas and transform Denmark from

[21] Energinet: *Redegørelse for elforsyningssikkerhed 2023*, Link (in Danish)

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*[22] were 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* were implemented in *Executive Order No. 340 of 2023 on gas supply (Gasleveringsbekendtgørelsen)*. Both

[22] *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)*.[23]

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[24]. Furthermore, *Executive Order No. 734 of 2022*[25] *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[26].
- 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 information requirements relating to gas bills contained in Annex I to *Gas Directive 2009/73* were implemented in *Executive Order No. 937 of 2006 on gas billing*, and updated by *Executive Order No. 209 of 2023*.

[23] *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 Orders 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.

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

[25] *Energioplysningsbekendtgørelsen* (retsinformation.dk)

[26] One øre is equivalent to DKK 0.01.

Effective as of 1 July 2023, the option to issue a combined gas bill ceased to be available. The abandonment of combined gas bills followed on from the introduction of a new market scheme for gas in Denmark. Gas consumers now 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 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 DataHub free of charge. Consumers can access the data either via supplier's website by using MitID[27] 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 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 DataHub, whereby a consumer can grant data authorisation by using MitID on the *Eloverblik.dk* website. The consumer can withdraw an authorisation granted at any time.

Consumer's access to consumption data (gas)

Gas consumer's data is not collated in 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*[28], 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*, which was revised and updated in January 2022. Further adjustments and updating is planned in

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

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

2024. The overall purpose of *elpris.dk* is to increase transparency and consumer awareness with regard to products and prices in the Danish retail 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*. Energinet operated the comparison tool until 31 March 2023, while DUR had the regulatory oversight of it.

On 1 April 2023, DUR took over responsibility for the comparison tool for the gas market.

Danish gas suppliers have a legal obligation to ensure that relevant and correct information about all their products, including prices and delivery terms are available on their webpages. Gas suppliers are under an additional obligation to ensure that the same information is reported to and available on the price comparison tool.

Electricity disconnection

DUR monitors the electricity disconnection rates in Denmark. In 2023, there were 0.8 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 justifiable reasons for expecting non-payment, the supplier can request security for the continued supply of electricity. 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 (the "Board") handles all household consumer complaints about purchase and delivery of electricity, district 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 2023 was approximately 3.9 months (116.1 days).

When the Board has reached a decision, it will be possible for either party to take the matter to the Danish court. The decisions of the Board are not binding or enforceable. Nevertheless, there is a high compliance rate for cases decided by the Board. According to the 2023 Annual Report from the Energy Supplies Complaint Board[29], energy companies in 2023 complied fully with the decisions of the Board in 95.2 per cent of cases, whilst there was passive compliance in 4.8 per cent of the cases decided during the same period. The compliance rate in 2023 was significantly higher than in 2022 (60 per cent).

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