



Danish
Utility Regulator

The Danish Electricity and Natural Gas Markets 2021

NATIONAL REPORT

AUGUST 2022

**DANISH UTILITY
REGULATOR**
Torvegade 10
DK-3300 Frederiksværk

Tel. +45 4171 5400

Digital Post:
Send via virk.dk
Send via borger.dk
post@forsyningstilsynet.dk

FOREWORD

The Danish Utility Regulator (DUR) is the regulatory authority in Denmark for the markets for electricity, natural gas and district heating. The National Report summarises the main developments in the Danish electricity and gas markets during 2021, 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.

During the year, DUR has updated the Danish electricity price comparison tool elpris.dk in cooperation with external stakeholders and electricity suppliers, launching an updated and improved platform for energy consumers in January 2022. In 2022, DUR will continue the work in order to ensure that elpris.dk continues to be a price comparison tool that supports the green transition and encourages customers to participate and be more active in the retail market.

In 2021, Denmark was a net importer of electricity with a total of 4.5 TWh. The average available capacity for trade on the cross-zonal transmission lines in 2021 was 82 pct. for export and 85 pct. for import. DUR has three major focus areas for the future market monitoring: utilisation of the Danish transmission lines, the market for automatic reserves in DK1, and the market for manual reserves in DK2.

Due to the temporary shutdown of the Tyra platform in the North Sea in 2019, Denmark was a net-importer of gas in 2021. Gas prices reached record levels and experienced significant volatility, especially in the last three months of the year. DUR focuses its monitoring for 2022 on the impacts of the shutdown of the Tyra platform and opening of Baltic Pipe. DUR will also focus on the utilisation of the Ellund interconnection point between Denmark and Germany and monitor if significant and systematic transportation of gas against price signals is occurring.

2021 was an extraordinary year due to the high energy prices on both electricity and gas, especially in the last quarter of the year. The year also started on the same basis as 2020 with the COVID-19 pandemic forcing our staff to work from home in the first half of 2021.

Carsten Smidt
Director General
Danish Utility Regulator (DUR)

Contents

FOREWORD	2
1. NOTE ON THE STRUCTURE OF THIS REPORT	5
2. COMPETITION AND MARKET FUNCTIONING	7
2.1 ELECTRICITY	7
2.1.1 WHOLESALE ELECTRICITY MARKET	7
2.1.1.1 PRODUCTION, CONSUMPTION, AND NET IMPORTS	7
2.1.1.2 CROSS-ZONAL TRANSMISSION LINES	7
2.1.1.3 PRICES	9
2.1.1.4 FOCUS AREAS FOR 2022	11
2.1.1.5 IMPORTANT EVENTS IN 2021	12
2.1.2 RETAIL ELECTRICITY MARKET	13
2.1.2.1 RETAIL ELECTRICITY PRICES	13
2.1.2.2 MARKET COMPETITION	15
2.1.2.3 FOCUS AREAS FOR 2022	17
2.2 GAS	18
2.2.1 WHOLESALE GAS MARKET	18
2.2.1.1 IMPORT AND EXPORT	19
2.2.1.2 PRODUCTION AND CONSUMPTION	19
2.2.1.3 UTILISATION OF GAS STORAGES	20
2.2.1.4 TRADING AND MARKET	21
2.2.1.5 UTILISATION OF ELLUND	22
2.2.1.6 REGULATORY DEVELOPMENT	23
2.2.1.6 FOCUS AREAS FOR 2022	24
2.2.1.5 IMPORTANT EVENTS IN 2021	25
2.2.2 RETAIL GAS MARKET	26
2.2.2.1 RETAIL GAS PRICES	26
2.2.2.2 MARKET COMPETITION	26
2.2.2.3 FOCUS AREAS FOR 2022	27
2.3 IMPLEMENTATION OF THE CLEAN ENERGY PACKAGE	28
3. NETWORK REGULATION AND TECHNICAL FUNCTIONING	28
3.1 ELECTRICITY	28
3.1.1 UNBUNDLING OF DSO	28
3.1.2 TRANSMISSION AND DISTRIBUTION TARIFFS, CONNECTION, AND ACCESS TO NETWORKS	29
3.1.3 IMPLEMENTATION OF NETWORK CODES AND GUIDELINES, CROSS-BORDER ISSUES, AND CM	30
3.1.4 ELECTRICITY SMART METERS	34
3.2 GAS	34

3.2.1 UNBUNDLING OF DSO	34
3.2.2 BALANCING SERVICES.....	35
3.2.3 MONITORING AND REVIEWING THE ACCESS CONDITIONS FOR STORAGE, LINE-PACK, AND OTHER ANCILLARY SERVICES	36
3.2.4 MODEL CRITERIA FOR ACCESS TO STORAGE	36
3.2.5 NETWORK AND TARIFFS FOR CONNECTION AND ACCESS	36
3.2.6 CROSS-BORDER INFRASTRUCTURE, ALLOCATION, AND CM.....	38
3.3 ELECTRICITY AND GAS.....	38
3.3.1 DESIGNATION AND CERTIFICATION OF TSO.....	38
3.3.2 SECURITY AND RELIABILITY STANDARDS.....	38
3.3.3 MONITORING TIME FOR CONNECTION AND REPAIR	39
3.3.4 COORDINATION AND COOPERATION.....	39
3.3.5 MONITORING TSO INVESTMENT PLANS	40
3.3.6 SECURITY OF SUPPLY	40
3.3.7 CONSUMER PROTECTION AND DISPUTE SETTLEMENT.....	41

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 and 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 text on the functioning of the wholesale gas and electricity markets comes from DUR comprehensive reports on the development of the Danish wholesale electricity¹ and gas markets², which were published in June 2022, 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 similarity between this and the structure of the present report.

¹ Danish Utility Regulator: Market Report 2021: [The Danish Wholesale Electricity Market - Summary](#)

² Danish Utility Regulator: Market Report 2021: [The Danish Wholesale Gas Market - Summary](#)

The following table clarifies the similarity:

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 2020" Subsection 2.2 and Table 2: "Main Events in the Danish Wholesale Gas Market in 2020"
2.1. Evaluation of the market development and regulation	Subsection 2.1.1 and Box 1: Wholesale Electricity Market: Focus Areas in 2021 Subsection 2.1.2 and Box 2: Retail Electricity Market: Focus Areas in 2021 Subsection 2.2.1 and Box 3: Wholesale Gas Market: Focus Areas in 2021 Subsection 2.2.2 and Box 4: Retail Gas Market: Focus Areas in 2021
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 was 32.6 TWh in 2021, which is an increase of 16.8 pct. compared to 2020. 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.

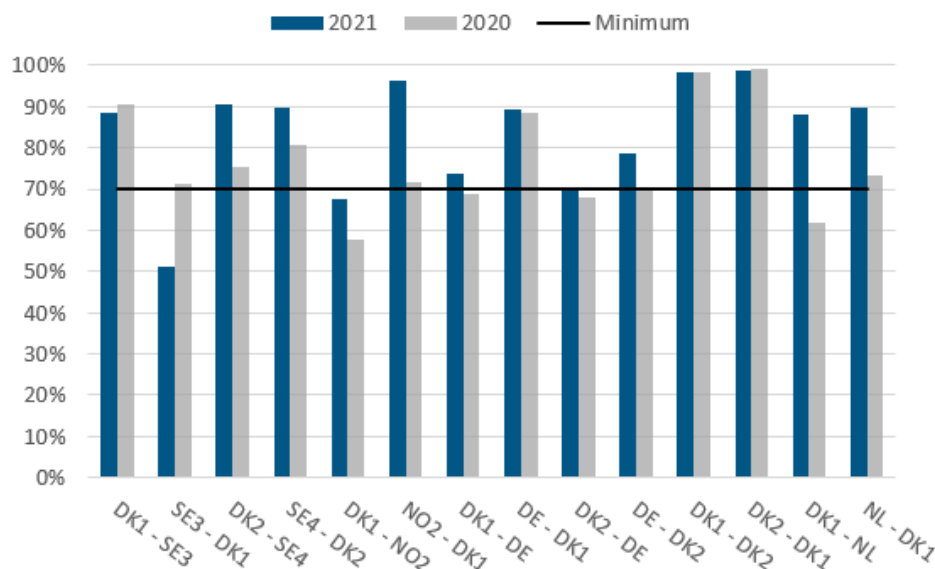
The Danish electricity consumption was 36.6 TWh in 2021, which is an increase of 7.5 pct. compared to 2020. The electricity consumption is larger in the winter than in the summer because of the increased need for heating and light. The largest monthly consumption was in December (3.5 TWh) while the lowest was in July (2.7 TWh).

Denmark was a net importer of electricity with a total of 4.5 TWh in 2021 and has been a net importer since 2011. Net imports have decreased 26 pct. in comparison to 2020. Denmark imported most electricity from Norway (7.9 TWh) and exported most to Germany (8.2 TWh).

2.1.1.2 CROSS-ZONAL TRANSMISSION LINES

The average available capacity for trade on the cross-zonal transmission lines in 2021 was 82 pct. of the nominal capacity, in the export direction. In the import direction, it was 85 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 2021



Source: Energinet and Nord Pool.

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

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

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

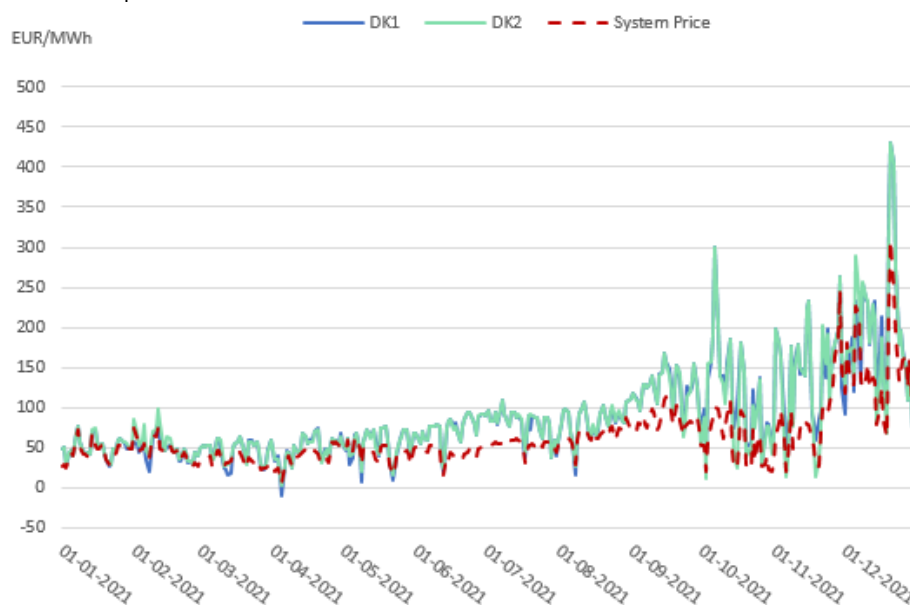
The calculated capacities for cross-border trade in this report are not calculated following ACER's recommendation. Instead, the capacities are calculated as the average available capacity compared to the nominal capacity. Therefore, DUR has not in this report evaluated whether Energinet or other TSOs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

On the border between DK1 and Germany, TenneT and Energinet performed countertrade to ensure system security in Germany when the trading capacity is higher than the physical capacity on the DK1-Germany border. The countertrade amounted to 5 TWh in 2021. TenneT uses countertrade to ensure system security.

2.1.1.3 PRICES

The average hourly prices in the day-ahead market in 2021 for DK1 and DK2 were 88 EUR/MWh in both bidding zones, cf. figure 2. This amounts to a price increase of 252 pct. in DK1 and 209 pct. in DK2. The system price, which is a fictitious day-ahead price that would have occurred if the Nordic countries were one bidding zone without any limits on its transmission capacity, was 62 EUR/MWh. As Denmark is located between the Nordic region's hydropower-based and the Central European thermal and renewable-based electricity generation, it effectively acts as a transit country between two different generation mixes.

FIGURE 2 | DAILY PRICE DEVELOPMENT OF THE DAY-AHEAD MARKET IN 2021



Source: Energinet

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

The price of electricity in Denmark is affected by the prices of fuel, CO₂ and by the filling ratio of the Nordic hydro reservoirs. The price of gas increased sharply during 2021, which is the main driver of the increasing prices in 2021.

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 intraday price was 84 EUR/MWh in DK1 and 86 EUR/MWh in DK2.

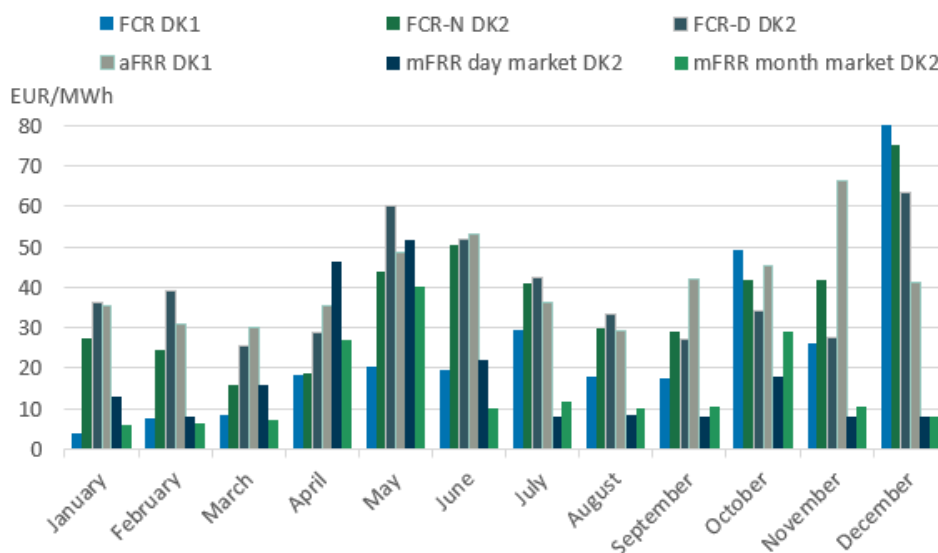
The Danish TSO, Energinet, purchases reserve capacity and reserve energy to balance the system before the operating hour. Energinet spend €183 million on reserves in 2021.

In 2021, the market for manual frequency restoration reserves (mFRR) were split into a daily and monthly auction. In total, Energinet spend €88 million on mFRR in 2021.

In December 2021, only one market participant submitted bids in the monthly auction for automatic frequency restoration reserves (aFRR). In January 2022 the price of aFRR reached a historical high price of 146 EUR/MWh. As a result of the low liquidity in the market, Energinet changed from monthly to weekly auctions.

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 2021



Source: Based on data from Energinet.

2.1.1.4 FOCUS AREAS FOR 2022

Considering the recent developments in the Danish wholesale electricity market as well as ongoing regulatory changes, DUR will in 2022 focus its market monitoring efforts on specific areas (see Box 1 with DUR focus areas for monitoring of the Danish wholesale electricity market).

The first focus point is the trade capacity on the transmission lines to and from DK1 and DK2. DUR will have an increased focus on the transmission lines between Denmark and Sweden as a result of the Swedish TSO's, Svenska Kraftnät, application for derogation for the 70 pct. requirement.

DUR will also monitor the market for aFRR in DK1. This is due to the low liquidity in the market and the change from monthly to weekly auctions.

Finally, DUR will focus on the market for mFRR due to the split into a daily and a monthly auction.

BOX 1 | FOCUS AREAS FOR 2022³

DUR focus areas for future market monitoring in wholesale electricity markets are the Danish transmission lines, the market for automatic reserves in DK1 and the market for manual reserves in DK2.

DUR market monitoring in 2021 will continue to focus on the trading capacity on the interconnectors between Denmark and the neighbouring countries. The market monitoring will also follow the development of application for derogation for the 70 pct. requirement from Svenska Kraftnät.

DUR market monitoring in 2022 will continue to follow the market for manual frequency restoration reserves in DK2.

In 2022, DUR will have an increased focus on the market for automatic frequency restoration reserves in DK1 due to low liquidity.

³ 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 published in December 2021. [Link](#) (in Danish).

2.1.1.5 IMPORTANT EVENTS IN 2021

In 2021, there has been several important events in the Danish wholesale electricity market. Table 1 summarizes these events and regulatory changes and developments in the Danish wholesale electricity markets, which have taken place in 2021.

TABLE 1 | **IMPORTANT EVENTS FOR THE DANISH ELECTRICITY MARKET IN 2021**

1 February 2021	Denmark enters into joint Nordic balance settlement. Read more here .
12 March 2021	DUR approves Energinet's request for an exemption from implementing 15-minute imbalance settlement. Read more here .
18 March 2021	DUR launches anthology series on better regulation in the energy sector. Read more here .
30 June 2021	DUR decides on Energinet's methodology for trading with local flexibility for handling local bottlenecks in the electricity transmission network. Read more here .
27 July 2021	ACER publishes a Framework Guideline prior to the creation of a network code for cybersecurity regarding cross-border electricity flows. Read more here .
22 September 2021	DUR approves Energinet's method for regulated price for system services. Read more here .
12 October 2021	DUR approves Energinet's proposal for rules for TSO settlement of intentional and unintentional exchanges of energy within the continental European synchronous area.
25 October 2021	DUR approves Energinet's changed terms and conditions for balance responsible parties. The notification is a consequence of the EU regulation laying down guidelines for balancing electricity. Read more here .
15 November 2021	ACER publishes preliminary analysis of the high energy prices and the current market design. The final analysis will be published during 2022. Read more here .
16 November 2021	DUR expresses disagreement towards new Swedish derogation from capacity requirements for transmission connections. The derogation will mean that Svenska Kraftnät is exempt from giving at least 70 pct. of the available transmission capacity to the market in 2022 when it will affect system security. Read more here .
19 November 2021	NordREG hosts a seminar on developments in the Nordic wholesale and transmission market. Read more here .
30 November 2021	Energinet, Statnett, Svenska Kraftnät and Fingrid decide to establish Nordic RCC A/S to coordinate the operational planning of the overall Nordic electricity system. Read more here .
10 December 2021	DUR and the other Nordic regulators host a virtual seminar on transparency and integrity in the energy markets. Read more here .
10 December 2021	DUR approves Energinet's method Cost Plus. Read more here .
14 December 2021	DUR approves Energinet's method for supplying capacity reserves from fluctuating renewable energy sources. Read more here .
17 December 2021	ACER publishes amendments to the guidelines for capacity allocation and management of capacity constraints (CACM 2.0). Read more here .

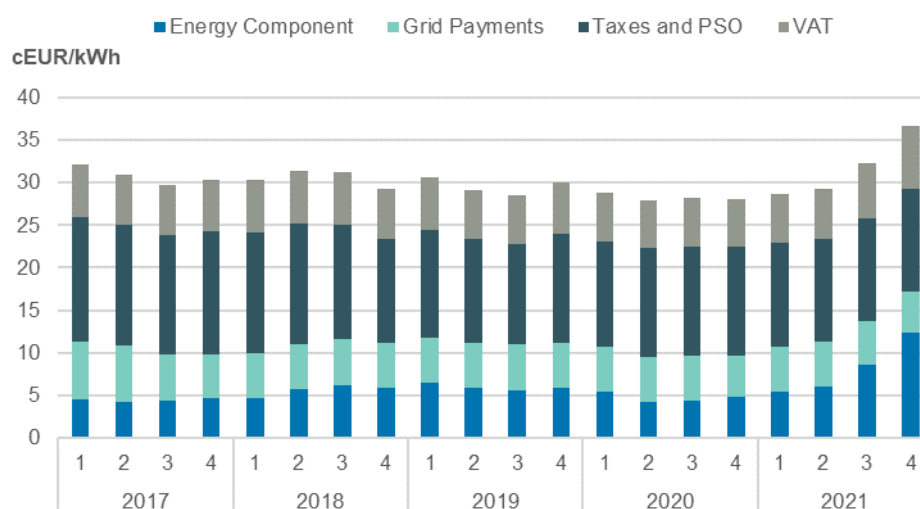
2.1.2 RETAIL ELECTRICITY MARKET

2.1.2.1 RETAIL ELECTRICITY PRICES

DUR publishes different types of electricity price statistics, including an annual report concerning retail prices for household and non-household customers with a consumption of up to 100,000 kWh/year. The purpose of this report is to increase transparency and customer awareness with regard to products and prices in the Danish retail market for electricity, thereby enabling customers to make an informed decision about which product to choose. The report for 2021 has not yet been published.

In 2021, the average total electricity price for Danish household customers was 31.68 cEUR/kWh, which is an increase of 12 percent compared to 2020, when the price was 28.28 cEUR/kWh, cf. figure 4.

FIGURE 4 | RETAIL ELECTRICITY PRICE FOR HOUSEHOLD CUSTOMERS, 2017-2021

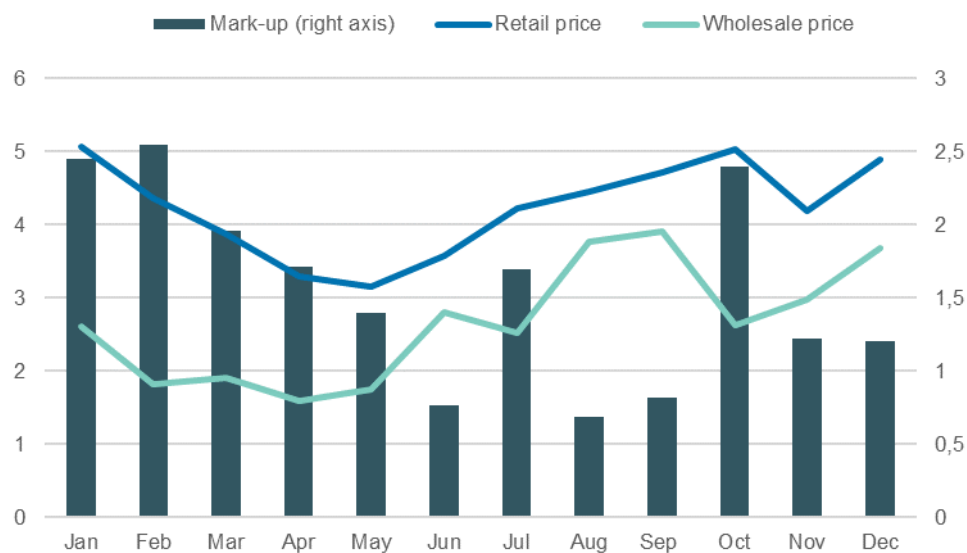


Source: The Danish Utility Regulator

Note: The calculations are based on an annual household consumption of 4,000 kWh.

Throughout 2021 there were moderate variations in the relationship between the retail price for variable electricity products and the wholesale price, cf. figure 5. For instance, the difference between retail and wholesale prices was larger in January, February, March, April and October, than the remainder of the year. As such, no close correlation is observed, indicating that customers on variable products might not receive price signals that correspond to the price in the wholesale market.

FIGURE 5 | CORRELATION BETWEEN RETAIL AND WHOLESALE ELECTRICITY PRICES FOR 2021



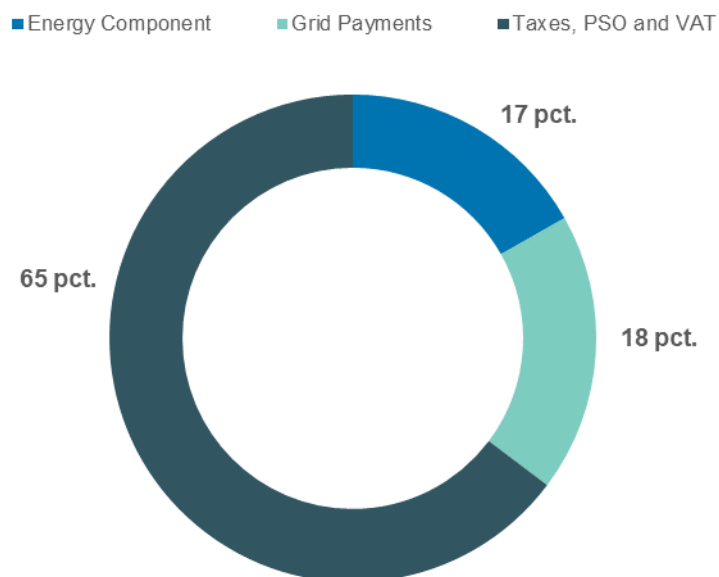
Source: The Danish Utility Regulator

In 2021, the average price that household customers paid for electricity could be broken down to 17 percent energy component payments, 18 percent grid payments⁴ and 65 percent taxes, Public Service Obligation (PSO)⁵ and value-added tax (VAT) payments, cf. figure 6. Taxes, PSO and VAT payments is by far the most predominant price element and is not exposed to competition.

⁴ Grid payments cover DSO grid tariffs, DSO subscription fees, TSO grid, and system tariffs.

⁵ PSO is an abbreviation for Public Service Obligation. PSO finances subsidies for renewable energy production and development. In 2017, the gradual phasing-out of PSO began. By 1 January 2022 PSO will be phased out completely.

FIGURE 6 | **BREAKDOWN OF TOTAL ELECTRICITY PRICES FOR HOUSEHOLD CUSTOMERS, 2021**



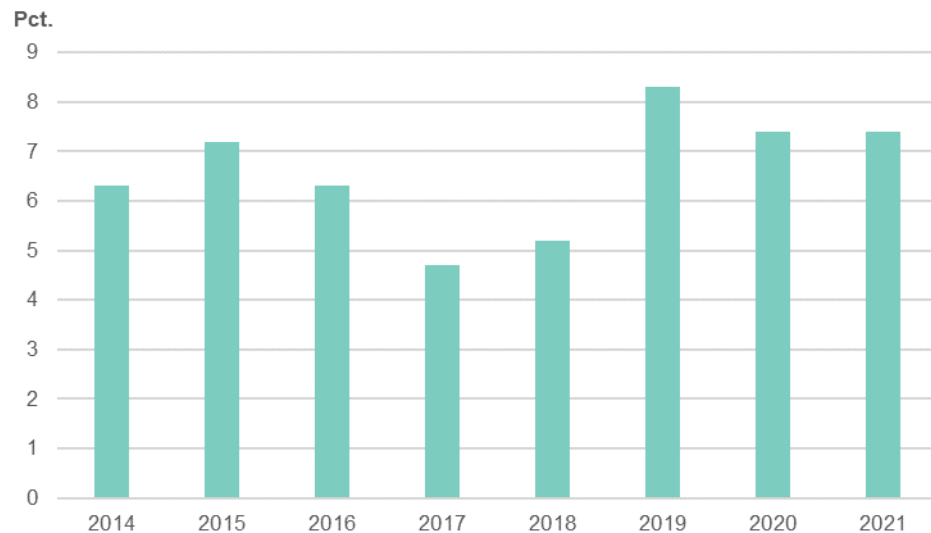
Source: The Danish Utility Regulator

Note: The calculations are based on an annual consumption of 4,000 kWh.

2.1.2.2 MARKET COMPETITION

In 2021, there were 57 electricity suppliers from among which consumers could choose. Despite potential savings, the external switching rate (for household and non-household customers with an annual consumption of up to 100,000 kWh), whereby customers switch to a different supplier, has remained more or less constant since 2014, cf. figure 7. In 2021, however, the switching rate was 7.36 percent, compared to 7.4 percent in 2020.⁶

⁶ Source: Energinet, Datahub, Markedsrapport nr. 12 2021, read more [here](#)

FIGURE 7 | ELECTRICITY SUPPLIER SWITCHING RATES, 2014-2021

Source: Energinet

In 2021, DUR prepared for the new supervisory tasks regarding Executive Order 2648 of 28 December 2021 ('Elleveringsbekendtgørelsen'). It specifically concerns the duties and legal obligations related to the supply of electricity to consumers, including several legal obligations for electricity suppliers aimed at securing a number of fundamental consumer rights for electricity consumers. The Executive Order contains – among other things – specific requirements pertaining to the content of contracts related to the delivery of electricity, changes to the terms and conditions for the contract, and Statutory requirements for advance notice prior to changes to contractual terms.

2.1.2.3 FOCUS AREAS FOR 2022

DUR has focus areas which are decided annually for the monitoring of the retail electricity market in Denmark. In 2021, DUR focused on monitoring and updating the price comparison tool, elpris.dk.

BOX 2 | RETAIL ELECTRICITY: FOCUS AREAS IN 2022⁷

In 2022, DUR will continue the supervision of Executive Order no. 2648 of 2021 in order to ensure that suppliers meet the new obligations for electricity suppliers.

In 2021, DUR updated the price comparison tool elpris.dk with external stakeholders and electricity suppliers, launching an updated and improved platform for energy consumers in January 2022. In 2022, DUR will continue the monitoring and supervision of elpris.dk, in order to ensure that elpris.dk continues to be a price comparison tool that will support the green transition and encourage customers to participate and be more active market actors in line with the Electricity Directive.

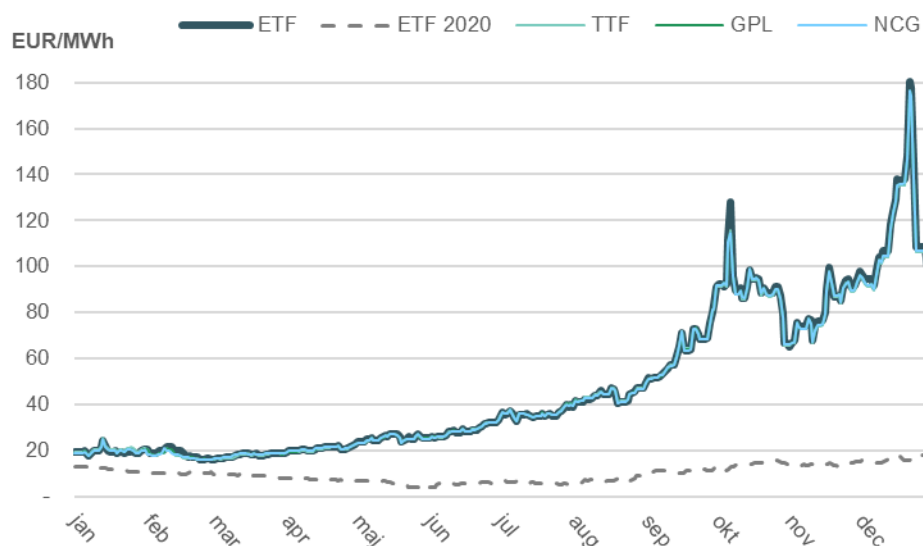
⁷ Besides the annual focus areas, DUR also publish a comprehensive annual work plan for the upcoming three years regarding both electricity, gas, and district heating. The latest work plan was published in December 2021. [Link](#) (in Danish).

2.2 GAS

2.2.1 WHOLESALE GAS MARKET

During 2021 the price development on the Danish gas market was characterised by significant volatility and a historical high price level. The average spot price was 376 pct. higher than in 2020 with a price record on 24 December 2021 at 180.18 EUR/MWh, cf. figure 8.

FIGURE 8 | PRICE DEVELOPMENT FOR DAY-AHEAD IN DENMARK, THE NETHERLANDS AND GERMANY FOR 2021



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 Gaspool and NetConnect Germany. EGSI is calculated for each delivery day as a volume weighted average of day and weekend contracts with delivery the actual day.

Remark: On 1 October 2021 the two German markets, GPL and NCG was merged into THE, why the two price curves are identical after that date.

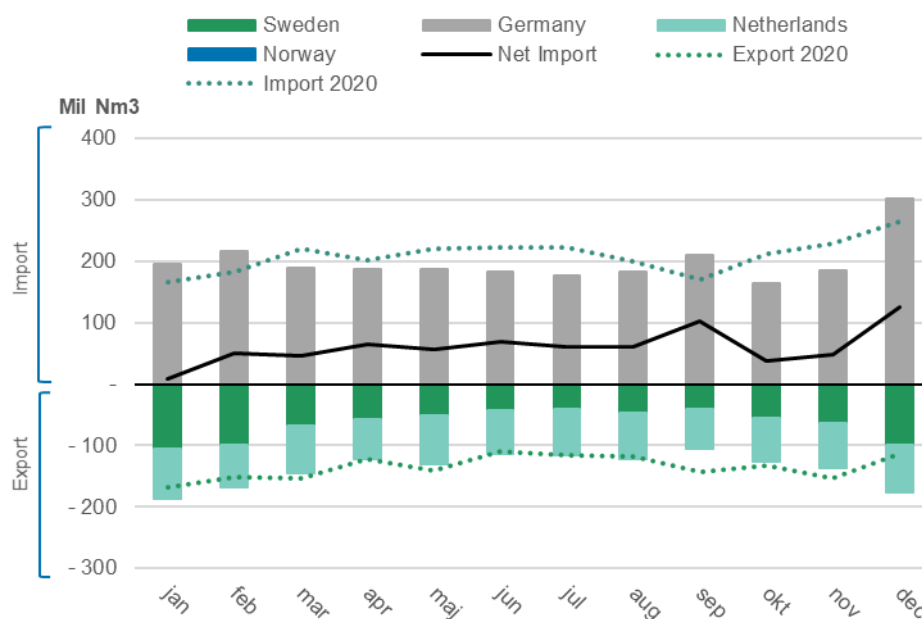
The gas market was especially characterised by significant volatility and price records during the last three months of 2021. The average price for Q4 2021 was over 550 pct. higher than the same period the year before. In December, the price volatility was especially unusual as the daily price fluctuations were between -36 and 32 EUR/MWh. In comparison, the daily price fluctuation in this period is normally between -1.5 and 1.5 EUR/MWh.

The lowest price in 2021 was observed in February. It is very unusual that the lowest price is in the winter period, where the demand on gas is at its highest.

2.2.1.1 IMPORT AND EXPORT

In 2021, Denmark was a net importer of gas. 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 total level of import was 2.4 bcm, which was 5 pct. lower than in 2020. The Danish produced gas was primarily exported to the Netherlands. The import of natural gas was higher than the Danish gas consumption, which is due to the fact that a part of the import is transported to Sweden or injected into Danish gas storages.

FIGURE 9 | IMPORT AND EXPORT PER COUNTRY, 2021



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

Note: Import from Norway are from Trym field, which is connected to the Danish system and currently shutdown.

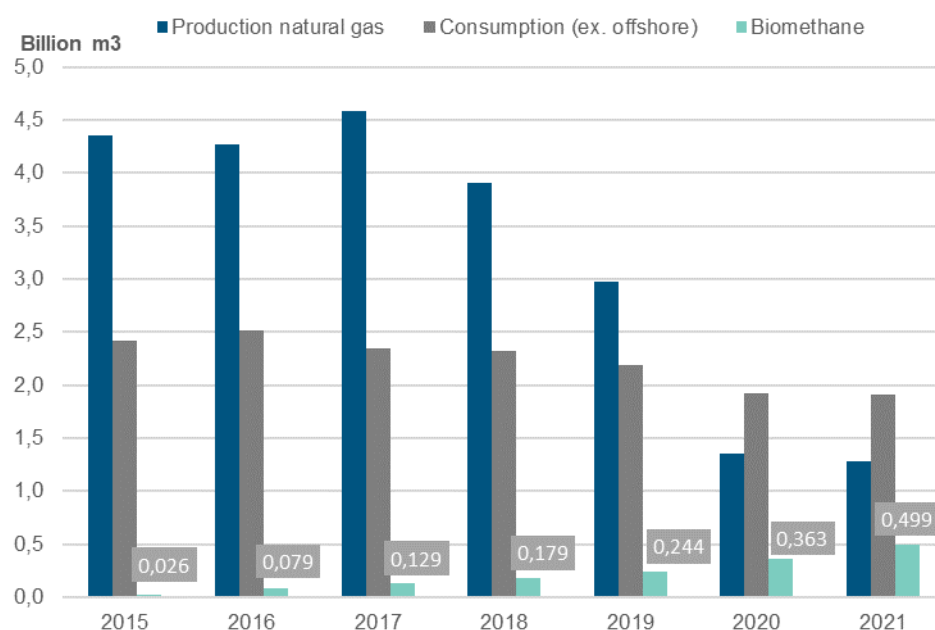
2.2.1.2 PRODUCTION AND CONSUMPTION

The production of natural gas was 1.3 bcm which was a decrease of 5 pct. compared to the previous year, and 57 pct. decrease compared to 2019, cf. figure 10. Due to the temporary shutdown of Tyra, this production is 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 continued its significant increase, and reached a record-high level of production in 2021 at 0.5 bcm. In 2021, the biomethane share of Danish gas consumption was 26 pct., compared to only 1 pct. in 2015.

The Danish gas consumption has been decreasing since 2016, but was 1.9 bcm in 2021. This is the same level as in 2020. The gas consumption is especially influenced by the weather and temperature. The first quarter of 2021 was colder than normal, which means that the consumption in this period was higher than on average.

FIGURE 10 | **ANNUAL PRODUCTION AND CONSUMPTION, 2015-2021**



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

In 2021, 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 fully supply the Danish-Swedish market. If so, the Danish gas storage must secure the remaining demand.

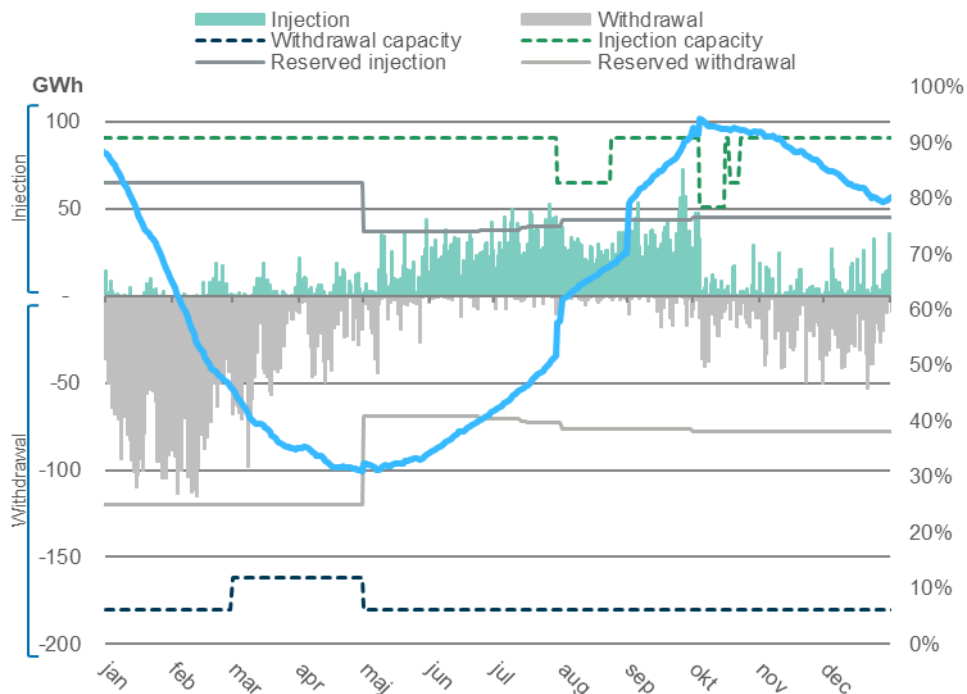
2.2.1.3 UTILISATION OF GAS STORAGES

Gas Storage Denmark's two storage facilities had a total available storage capacity of 9.4 TWh in 2021, which is a decrease of 10 pct. compared to 2020. The decrease is mainly driven by imports of German natural gas throughout 2021, because German gas has a lower calorific value than natural gas from the North Sea. The storage capacity also decreased because Gas Storage Denmark introduced an inverse storage product whereby storage capacity including physical gas is made available to the buyer at the beginning of the contract with an obligation to return the gas at the end of the contract.

The storage capacity was not sold out in 2021. The capacity was sold at an average price of 6.16 EUR/MWh, which is 20 pct. higher than in 2020 and 328 pct. higher than in 2018.

The gas storage capacity utilisation was at a very low level throughout the year and was close to 30 pct. in May, cf. figure 11. There was a concern throughout the year that the gas storage could be insufficiently filled for the winter season. DUR therefore strengthened the monitoring of the storage filling during spring and summer in order to be able to anticipate possible supply issues over the winter.

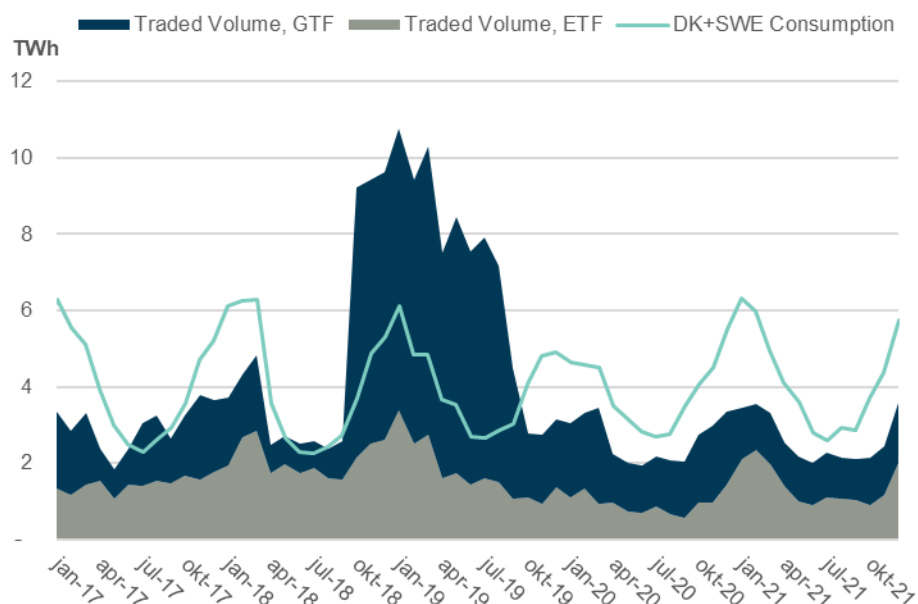
FIGURE 11 | **STORAGE FILLING, INJECTION, AND WITHDRAWAL, 2021**



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

2.2.1.4 TRADING AND MARKET

In 2021, 17 TWh was delivered at ETF, which is the delivery point for gas traded at the exchange EEX, while 15 TWh was delivered at GTF, which is the delivery point for bilateral gas contracts, cf. figure 12. This is the opposite of the year before, where GTF was the primary delivery point in Denmark.

FIGURE 12 | **TRADED VOLUME AT ETF AND GTF, 2017-2021**

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 0 corresponds to perfect competition. The market concentration for the wholesale market at GTF has significantly decreased on both the buyer and seller-side in 2021. On the other hand, the market concentration on ETF is increasing, where the level on the seller-side is on an undesirable level with risks of distortion of prices.

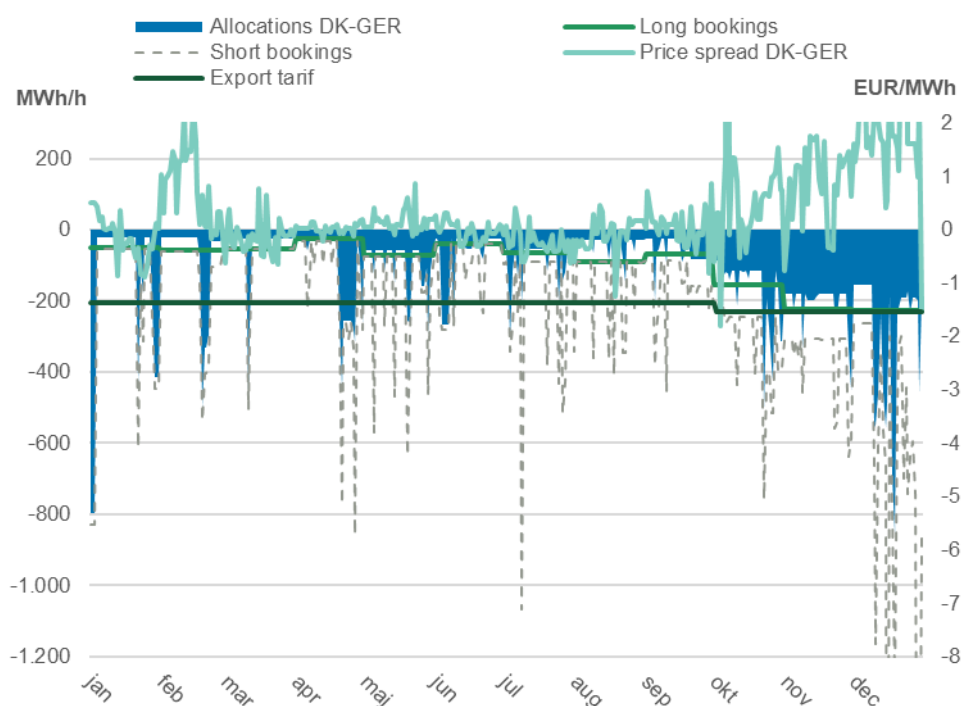
2.2.1.5 UTILISATION OF ELLUND

Due to the restoration of the Tyra platform, DUR has an increased focus on the Ellund interconnection point between Denmark and Germany.

In 2021, the ongoing market monitoring and analysis shows that there has been a partly systematic behaviour resulting in an increased degree of gas transportation against price signals, cf. figure 13. This behaviour results in shippers exporting gas from Denmark to Germany even though the price was lower in Germany. Shippers could instead have profited from selling the gas in Denmark and buying it in Germany. Also, during several periods of 2021, there has been un-utilised import capacity at Ellund, which indicates that shippers have not taken advantage of the difference in prices between the Danish and German markets.

Since such behaviour may be considered as irregular market behaviour which potentially may affect the price level on the Danish gas market, DUR is monitoring the development closely.

FIGURE 13 | **ALLOCATIONS AND EXPORTBOOKINGS AT ELLUND, 2021**



Source: The Danish Utility Regulator based on data from Energinet, Gasunie Deutschland, Open Grid Europe, and EEX.

2.2.1.6 REGULATORY DEVELOPMENT

DUR published two major decisions during the year. In April, DUR and the German Bundesnetzagentur approved in coordination the joint proposal from Energinet, Gasunie Deutschland and Open Grid Europe regarding incremental firm capacity at the Ellund interconnection point. In December, DUR approved the methodology from Energinet regarding changes to the balancing market. Due to the approval, within-day obligations will be implemented in Denmark from October 2022.

Additionally, DUR is considering 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 considered simultaneously. DUR expects to publish decisions on the complaints within the first six months of 2023.

2.2.1.6 FOCUS AREAS FOR 2022

DUR has a number of new focus areas for the wholesale gas market in 2022. The Baltic Pipe is expected to be commissioned on 1 October 2022. DUR will thus monitor how the pipeline will affect the Danish gas market. Due to the temporary shutdown of the Tyra platform, DUR still has an increased focus on the efficient and appropriate utilisation of the Ellund interconnection point, cf. box 3.

The focus areas are expected to change in 2023 when both the Baltic Pipe and Tyra platform are in full operational status. On 3 August 2022, the operator of the Tyra platform, TotalEnergies, announced a delay of the recommissioning of the platform from 1 June 2023 to Winter 2023/2024⁸.

BOX 3 | FOCUS AREAS FOR 2022⁹

DUR's market monitoring for the first 9 months of 2022 is largely related to the temporary shutdown of the Tyra platform in the period from September 2019 to Winter 2023/2024. The market monitoring will especially focus on the Ellund interconnection point between Denmark and Germany. Denmark has until 1 October 2022 only one primary supply route. DUR will continue to monitor and analyse whether significant and/or systematic transportation of gas against price signals is occurring and whether capacity at the Ellund connection is utilised efficiently.

DUR will closely monitor the effect on the Danish gas market of the commissioning of the Baltic Pipe in October 2022. In 2021, the gas market has been affected by unusual high wholesale prices and significant volatility. DUR's market monitoring will follow the price developments on both the Danish and the European gas market including the supply situation due to the Russian invasion of Ukraine.

In addition, DUR will focus on market dynamics, trade behaviour and market concentration during 2022. The utilisation of the Danish gas storage facilities will be monitored as their efficient and appropriate utilisation is central to the supply situation. DUR is responsible for the oversight of the terms for access to storage capacity, as well as other obligations according to the European gas regulation.

⁸ TotalEnergies: [Link](#)

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 published in December 2021. [Link](#) (in Danish).

2.2.1.5 IMPORTANT EVENTS IN 2021

The temporary shutdown of the Tyra platform has great impact on the Danish gas market. This year was exceptionally eventful where prices broke records several times.

TABLE 2 | IMPORTANT EVENTS FOR THE DANISH GAS MARKET IN 2021

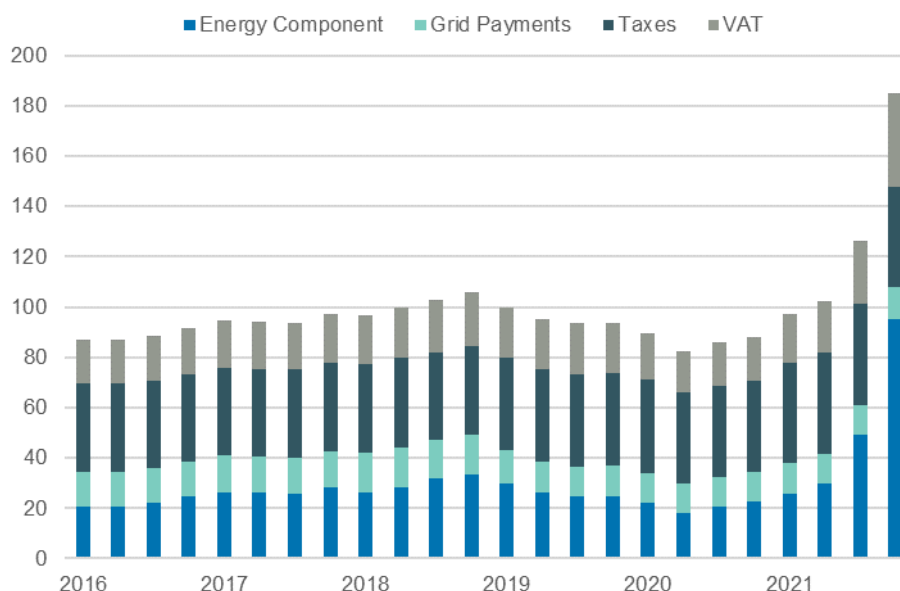
7 January 2021	Green gas certificates shall state if the gas is produced at production plants established with or without state aid. It follows from a new EU directive. Read more here .
29 March 2021	The Danish gas storages are quickly emptied, and is on this date at the lowest filling level since 2018 according to the Energy Data Service.
1 April 2021	A political majority approves the establishment of a new gas pipeline to Lolland and Falster. The pipeline is intended to supply Nordic Sugar with gas. The pipeline should further contribute to an increase in the production of biomethane. Read more here .
26 April 2021	DUR and the German BNetzA approves the joint proposal from Energinet, GUD, and OGE regarding incremental firm capacity at the IP Ellund. Read more here .
8 July 2021	The construction of the Baltic Pipe is temporarily paused due to a repeal by the DEFAB of the environmental permit issued by the DEPA. The appeals board did not find it sufficiently documented how the construction would affect different animal species. Read more here .
14 July 2021	The Climate Package "Fit-for-55" is presented by the European Commission. The purpose is to amend regulation so it is in accordance with the goal of a 55 percent reduction in emissions. Read more here .
25 August 2021	The commissioning of the pipeline Nord Stream II is expected to be postponed. A German Regional Higher Court has rejected an appeal from Nord Stream 2 AG, and demands that the pipeline has to fulfil EU Regulation regarding i.e. third party access. Read more here .
31 August 2021	DUR publishes the annual National Report. The report includes the market monitoring of the wholesale gas market and describes the regulatory development. Read more here .
24 September 2021	DUR and the Swedish Energy Market Inspectorate receive an evaluation of the Joint Balancing Zone from Energinet and Swedegas. DUR initiates a public consultation of the evaluation. Read more here .
1 October 2021	The two German market zones, Gaspool (GPL) and NetConnect Germany (NCG), are merged to the joint market zone Trading Hub Europe (THE). Read more here .
1 November 2021	Total E&P Danmark A/S announces in a REMIT message that the recommissioning of the Tyra platform is postponed from July 2022 to 1 June 2023 due to COVID-19.
17 November 2021	The German process for approval of the pipeline Nord Stream II is suspended due to doubts about the corporate structure. Read more here .
4 December 2021	A political majority decides to cancel the 8th tender process for the extraction of hydrocarbons in the North Sea, and implements a full stop for Danish production in 2050. Read more here .
6 December 2021	DUR approves the methodology from Energinet regarding changes to the balancing market. Due to the approval, within-day obligations will be implemented. Read more here .
12 December 2021	The German Government announces that in case of any escalation of the conflict between Ukraine and Russia the pipeline Nord Stream II will not be commissioned. Read more here .
15 December 2021	The Danish Government presents "Grøn Gasstrategi" and "Fremtidens Grønne Brændstoffer" which describe the role of gas during the green transition. Read more here .
15 December 2021	The European Commission presents its Hydrogen and Decarbonisation Package, which introduces regulation for a hydrogen market and how to reduce emissions from the gas sector. Read more here .
23 December 2021	An agreement is in place for a new model for tenders for biomethane. It has the intention of lowering the need for state aid while also contributing to the reduction of emissions. Read more here .
24 December 2021	The Danish wholesale gas price breaks a historical record on the EEX Exchange. The price increased to 180.18 EUR/MWh. For comparison, the price was 17.49 EUR/MWh the year before.

2.2.2 RETAIL GAS MARKET

2.2.2.1 RETAIL GAS PRICES

In 2021, the average total gas price for retail customers (both household and non-household) was 127.78 cEUR/m³, which is an increase of 47.82 percent compared to 2020, when the price was 86.44 cEUR/m³, cf. figure 14. 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 14 | RETAIL GAS PRICES FOR CUSTOMERS, 2016-2021



Source: The Danish Utility Regulator

2.2.2.2 MARKET COMPETITION

In 2021, there were ten suppliers offering natural gas products to the approximately 408,000 gas retail customers in Denmark. In 2021, one of the ten suppliers was licensed as the default supplier. The default supplier is obliged to supply gas to customers who have not actively chosen a supplier. The Danish Energy Agency grants the default supplier licences on the basis of a tender process, and the licences are granted for a three-year period, with the possibility of renewal.

Customers can choose from among three types of gas products, i.e. universal service obligation products, basic products¹⁰ and market-based products. Most retail customers (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 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 additional charge is determined in the tender process for obtaining the default supplier licence.

The consolidation of the gas distribution companies has led to changes in the fundamental conditions of the gas sector. These changes encourage a review of the existing legislation, including the regulation of the retail market within the gas sector. Box 4 summarises the areas on which DUR focuses its monitoring efforts within the retail gas markets in 2022.

2.2.2.3 FOCUS AREAS FOR 2022

BOX 4 | RETAIL GAS MARKET: FOCUS AREAS IN 2022¹²

An amendment to the Gas Supply Act was approved in 2021. The amendment will implement a new gas retail market design that mirrors the current electricity retail market design, i.e. a supplier-centric model with combined mandatory billing and removal of the universal service obligation of licensed default suppliers.

DUR will participate in the implementation of the new regulations as much as possible and this will be DUR main focus in terms of the gas retail market in the years to come.

¹⁰ After the expiry of the license, customers 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.

¹¹ Data is for the year 2017, since the data is no longer compiled by DUR.

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 published in December 2021. [Link](#) (in Danish).

2.3 IMPLEMENTATION OF THE CLEAN ENERGY PACKAGE

Legal basis: Electricity Directive, Article 59(1) (u)

The Danish Energy Agency 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 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 new Electricity Directive was adopted by the Danish Parliament and entered into force on 31 December 2020.

On 1 July 2022, the RCC was established in Copenhagen as one of 6 regional centres in Europe with the aim of optimizing 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 on the basis of 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 customers.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.

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.

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:

DUR approved Energinet's tariff methodology and the methodology for setting connection fees. 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 customers 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.

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.

Specific to distribution:

DUR approves the companies' tariff methodology and the methodology of connection fees based, generally, on an industrywide tariff model developed by the Danish Energy Association (in 2022, the Danish Energy Association changed its name to Green Power Denmark) on behalf of the DSOs. Under the Danish Electricity Supply Act and the Electricity Market Regulation, 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 customers pays the costs to which they give rise.

The DSOs' cost data is checked annually 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.

A new regulation came into effect in 2018. It is based on five-year regulation periods with a revenue cap, based on 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 new 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)):

The basic principles of recovery of balancing costs and the principles for settlement of imbalances used by the Danish TSO were approved by DUR in 2012.

In parallel with the implementation of Commission Regulation (EU) 2017/2195 of 23 November 2017 establishing a guideline for electricity balancing (EB GL), the Nordic TSOs are developing a Nordic balancing model (NBM) for exchange of balancing capacity and energy and for imbalance netting. 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 basically recovered from the market participant causing the cost/imbalance, depending on whether the market participant is consumption-balance responsible or production-balance responsible. Consumption-balance settlement applies a one-price settlement principle, while production-balance settlement applies a two-price settlement principle, reflecting whether the production imbalance supports the system or not. The pricing principles incentivise the balancing responsible party to be in balance. An element of NBM is to move towards single pricing. The Nordic TSOs are coordinating their efforts in preparing terms and conditions for regulatory approval.

As a state-owned, non-profit company, the primary aim of the Danish TSO (Energinet) is to ensure open and effective operation and development of the overall infrastructure and to ensure open and equal access for all users of the network.

Key actions under EB GL during 2021:

In 2021, DUR made the following decisions pursuant to Commission Regulation (EU) 2017/2195 of 23 November 2017 establishing a guideline on electricity balancing (EBGL):

- On 12 March, DUR approved Energinet's request for a derogation from the deadline by which all TSOs shall apply an imbalance settlement period of 15 minutes. The new deadline is 22 May 2023. The original deadline was 18 December 2020.

- On 25 October, DUR approved the amendment submitted by Energinet Elsystemansvar A/S to the terms and conditions for balance responsible parties. After the amendment, the TSO will use one settlement price regardless of the direction of the imbalance.

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 (CCR): 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 in 2021 were determined through implicit auctions. Residual capacity that was not used in the day-ahead market was given to the intraday market.

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

Key actions under CACM GL during 2021:

On 29 December 2020, Energinet submitted the following proposal:

- Amended methodology for sharing of costs for redispatch and countertrade in CCR Hansa, which was approved by DUR on 15 March 2021.

On 17 February, Energinet submitted the following proposal:

- Amended capacity calculation methodology for day-ahead and intraday in CCR Hansa, which was approved by DUR on 17 May.

On 23 November, DUR decided on Nord Pool EMCO's request for cost recovery regarding costs to the single day-ahead coupling and single intraday coupling for 2017.

On 24 November. DUR decided on EPEX SPOT's request for cost recovery regarding costs to the single day-ahead coupling and single intraday coupling for 2017.

Key actions under FCA GL¹⁴ during 2020:

On March 16th, 2021, the TSO's of the Hansa Region submitted a proposal for a changed long-term capacity calculation methodology (LT CCM) in the Hansa Region.

- On September 22nd, 2021, DUR - in relation to Energinet - approved a revised version of the TSO's proposal for a changed LT CCM.

On the 25th of June, 2021, ENTSO-E – on behalf of all TSO's – submitted a proposal for amendment of the Harmonised Allocation Rules for Long-Term Transmission Rights (HAR).

- On November 29th, 2021, ACER approved a revised version of the TSOs' proposal for amendment of the HAR.

Key actions under SO GL¹⁵ during 2021:

- On 17 December 2019, Energinet submitted a proposal for additional properties for frequency containment reserves (FCR) in Continental Europe (CE) in accordance with Article 154(2). On 5 June 2020, the NRAs of CE jointly activated the process for amendments to Regulation 2019/942, Article 5(6). The NRAs of CE jointly issued a position paper on approval on 21 January 2021. On 30 June 2021, DUR approved the amended proposal from Energinet.
- On 19 December 2019, Energinet submitted a proposal for Regional Operation Security Coordination (ROSC) for CCR Nordic in accordance with Article 76. The Nordic NRAs issued a joint request for amendments on 11 June 2020. DUR received an amended proposal on 19 August 2020. The NRAs of CCR Nordic issued a position paper on approval of the CCR Nordic ROSC methodology on 21 September 2020. DUR approved the proposal on 8 January 2021.
- On 29 June 2020, Energinet submitted a proposal for additional properties for FCR in the Nordic synchronous area in accordance with Article 154(2). The NRAs of the Nordic synchronous area jointly issued a position paper on approval on 21 September 2020. DUR approved the proposal on 25 January 2021.
- On 30 October 2020, Energinet submitted a proposal on ramping restrictions for the Nordic NRAs in accordance with Article 137(3) and (4). The Nordic NRAs issued a joint position paper on approval on 5 November 2020. DUR approved the proposal on 12 April 2021.

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

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

- 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 14 April 2021, Energinet (as well as the other Nordic TSOs) submitted a proposal for a minimum activation period to be ensured by FCR providers on 15 minutes for FCR providing units with limited energy reservoirs in accordance with Article 156(10). The NRAs of the Nordic synchronous area jointly issued a position paper on approval on 17 September 2021. This was approved by DUR on 8 October 2021.

Key actions under ER NC during 2021¹⁶:

During 2021 DUR approved the following

- a) The terms and conditions to act as defence service providers on a contractual basis in accordance with Article 4 of Regulation 2017/2196 (ER GL).
- b) The terms and conditions to act as restoration service providers on a contractual basis in accordance with Article 4 of Regulation 2017/2196 (ER GL).
- c) The list of Significant Grid Users (SGUs¹⁷) responsible for implementing on their installations the measures that result from mandatory requirements set out in Regulations (EU) 2016/631, (EU) 2016/1388 and (EU) 2016/1447 and/or from national legislation, and the list of the measures to be implemented by these SGUs, identified by the TSOs under Article 11(4)(c) and 23(4)(c).
- d) The list of high-priority SGUs referred to in Articles 11(4)(d) and 23(4)(d), or the principles applied to define these, and the terms and conditions for disconnecting and re-energising the high-priority grid users, unless defined by the national legislation of Member States.
- e) The rules for suspension and restoration of market activities in accordance with Article 36(1).
- f) Specific rules for imbalance settlement and settlement of balancing energy in the event of suspension of market activities, in accordance with Article 39(1).
- g) The test plan in accordance with Article 43(2).

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

¹⁷ A significant grid user is a facility which has a significant impact on the grid. In this case, the impact is related to the implementation of mandatory requirements set out in the listed regulations.

- On 18 December 2018, Energinet submitted terms and conditions in accordance with Article 4(2) (a)-(f). On 15 January 2021, DUR approved these terms and conditions.
- On 17 December 2019, Energinet submitted a test plan. On 14 January 2021, DUR approved the test plan.

3.1.4 ELECTRICITY SMART METERS

Legal basis: Annex II

Pursuant to Executive Order no. 1358 of 2013 on smart meters and metering of end-consumption of electricity, the DSOs were obliged to install smart meters in the homes and businesses of all (100 percent) consumers in Denmark by no later than the end of 2020. The legal requirements of smart meter functionalities are, among other things, 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.

3.2 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 2009/73¹⁸ 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 act 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 licence itself provides for certain limitations in terms of which activities the DSO may engage in.

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.

In 2020, there was one gas DSO in Denmark - Evida A/S.¹⁹ The gas DSO was unbundled and owned by the Danish TSO, Energinet. The Danish Ministry of Finance took over the ownership of Evida as of 1 January 2021.

3.2.2 BALANCING SERVICES

Legal basis: Article 41(6) (b) and (8)

The European network code on balancing (NC BAL) 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.

The balancing zone in Denmark is a Joint Balancing Zone with Sweden. The main purpose of a Joint Balancing Zone 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 Joint Balancing Zone 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 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 Ei find it positive that the market participants have been encouraged by Energinet and Swedegas to express their opinion. However, DUR and Ei agree that the analysed time period has 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 is conducted after Baltic Pipe has been in operation for one winter.

On 6 December 2021, the Danish Utility Regulator (and the Swedish regulator in parallel) approved a new balancing methodology for the Danish-Swedish Joint Balancing Zone (JBZ). The new methodology will take effect from 1 October 2022 and will introduce within-day obligations along with the underlying data model and the concepts of Smoothing and No Punishment Principle. The necessity for these changes stems from the establishment of the Baltic Pipe, which will greatly multiply the flows of gas through the JBZ.

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.

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 Act, there is negotiated access to storage and line-pack in Denmark. There is no price regulation under the Danish Gas 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 the two Danish physical storage facilities, with a combined storage capacity of approximately 9.4 TWh in 2021. The two storage facilities are operated as one 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 6.16 EUR/MWh in 2021, which was approximately 20 percent higher than in 2020.

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), whereby the volumes of gas from the North Sea are reduced considerably, making Denmark totally dependent on imports from Germany, the storage facilities will have a critical role in supporting the Danish gas market.

DUR monitors the criteria supporting the choice of negotiated access. If competition, access conditions or product choices/prices should develop in a way that does not reflect expected market behaviour, but 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.

From 14 September to 28 September 2021, Energinet held a pre-consultation of a new tariff methodology. From 14 October to 14 December 2021, Energinet held a final consultation of a new tariff methodology. On 3 January 2022, Energinet notified to DUR a new tariff methodology for the notified regulatory period of five years (from 1 October 2022 to 30 September 2027). On 12 May 2022, DUR partially approved the notified tariff methodology continuing, among others, uniform tariffs (postage stamp method).

In relation to distribution:

There has been no new regulation on tariffs for access or connection fees in 2021.

On 25 February 2021, DUR approved a temporary methodology submitted by the Danish DSOs allowing some consumers to be exempted 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.

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 connection fees. According to the Gas Supply Act, the methodologies must ensure that tariffs and other payments are set on a fair, objective and non-discriminatory basis and that they are based on necessary costs whereby every group of customers 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 customers pay a high tariff for the first cubic metres delivered and a lower tariff for volumes that exceed certain intervals.

The methodology was approved in 2005 and has developed on a continuous basis, sometimes independently for each DSO.

The DSOs' cost data is checked annually 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)

No congestion was experienced in the Danish transmission system in 2021, 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, during which Denmark and Sweden are supplied almost entirely from Germany, the interconnection point at Ellund may become a bottleneck during cold winter months. But as the import capacity on the Danish side exceeds the export capacity on the German side it is unlikely that CMP instruments will be activated on the Danish side. In the long term it is very unlikely that congestion will occur in the Danish gas transmission system, as Danish gas consumption is expected to fall, while the commissioning of Baltic Pipe in 2022 will also increase the flow of natural gas in the Danish system.

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 has not impacted the certification of the company.

A new economic regulation of Energinet is currently being developed, together with a new process for approval of Energinet's grid planning and actual grid investments. The new economic regulation is expected to apply from 2023 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 supports 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 the last year.

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 Danish Energy Association (in 2022, the Danish Energy Association changed its name to 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 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 NordREG.

On July 1st 2022, the Nordic Regional Coordination (RCC) was established in Copenhagen as one of 6 regional centres in Europe with the aim of optimizing 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 on the basis of 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 the 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 Joint Balancing Zone, as Sweden has no indigenous gas production and no substantial gas storage or LNG facilities. Sweden depends entirely on Danish gas supplies for its national market's annual consumption of approximately 1 billion m³ per year. Security of supply is therefore a subject that requires continuous cooperation between the Danish and Swedish authorities and system operators. The Danish Energy Agency (DEA) is responsible for the security of supply in Denmark.

In 2020, DUR cooperated with the German NRA, Bundesnetzagentur, regarding the El-lund Interconnection Point (IP) between the two countries. DUR and Bundesnetzagentur has bilaterally agreed to monitor the structural efficiency of the border point, which has been an ongoing task throughout 2021.

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 the Danish Energy Agency (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 TYNDP, which 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) for approval, 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

The Danish Energy Agency (DEA), not DUR, 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 is the same level as

in 2020. 20 minutes of interruption corresponds to having electricity in your power plug on average 99.996 percent of the time.²⁰

The 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, not DUR, is responsible for regulatory tasks relating to security of supply. DUR is responsible for approving methodology according to relevant law and market monitoring.

In 2021, 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 is expected to commence on 1 October 2022. Baltic Pipe will supply Denmark and Poland with up to 10 bcm of Norwegian gas, and transform Denmark from its original status as an exporting gas country to a transit country. Until then, almost all gas for the Danish and Swedish markets will have to be imported from Germany via the Ellund interconnection point. Together with the total Danish storage capacity and national production of biomethane this will be sufficient to also 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.

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 the information that must be provided in an electricity or gas supply contract are:

- The identity, address and contact details of the supplier.
- The arrangements for payment, delivery, performance and the time 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 terminating the contract.
- Where information about up-to-date applicable prices and fees can be obtained.
- 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.

²⁰ Energinet: Redegørelse for elforsyningssikkerhed 2021, [link](#)

- Information about where compensation and other remedies for non-compliance can be claimed, if the contractual terms are not met, including inaccurate and delayed billing.
- Information on complaint handling and how to complain.
- The terms of the supply contract must be fair, transparent and easily understandable and be provided to the consumer before conclusion of the contract.

The requirements regarding information in an electricity supply contract in the Electricity Directive 2019/944²¹ are implemented in Executive Order no. 2648 of 2019 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. 1354 of 2014 on gas supply. Both Executive Orders, which are issued by the Danish Energy Agency, explicitly reference information requirements set in the Danish Consumer Contracts (Forbruger aftaleloven) Act no. 1457 of 2013.²²

Billing information (electricity and gas)

Suppliers are required to provide a specified bill free of charge to the consumer, at the consumer's request.

DUR monitors suppliers' compliance with the legal requirements concerning billing information. Furthermore, Executive Order no. 2251 of 2020²³ on energy companies' duty of disclosure to end-consumers also applies to electricity and gas billing.

Billing information (electricity)

Following the implementation of the supplier-centric model in the Danish electricity market, suppliers are responsible for all communication with consumers, including billing.

The minimum legal requirements regarding information in the electricity bill 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, grid and system services, PSO, taxes including VAT, supplied in the billing period²⁴.
- The consumer's right to receive a specified bill free of charge.

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.

²² The Danish Consumer Contracts Act no. 1457 of 2013 is non-energy-specific legislation, whereby among other things the minimum requirements regarding a trader's duty to disclose information before conclusion of a contract with a consumer are regulated. Pursuant to Executive Order no. 1233 of 2015 on electricity supply and no. 1354 of 2014 on gas supply, these requirements also apply to the information that must be provided to a consumer in an electricity or gas supply contract.

²³ <https://www.retsinformation.dk/eli/lt/2020/2251>

²⁴ One øre is equivalent to DKK 0.01.

The simplified 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 requirements regarding billing information on electricity billing was updated with 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.

Combined gas billing is not mandatory. As a consequence, customers will either receive one combined bill or a bill from both the gas supplier and the gas distribution system operator.

Customers' access to consumption data (electricity)

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

Overall, three types of data collected in the DataHub relate directly to customers:

- Customer-related master data (e.g. the customer'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)

Customers can access their data (i.e. customer-related master data, metering point-related master data and metered data) in the DataHub free of charge. Customers can access the data by using either the NemID²⁵ log-in function on the supplier's website or via the public website *Eloverblik.dk*, operated by Energinet. The data can be downloaded from *Eloverblik.dk* in an Excel file.

When a customer enters into a supply contract, the supplier obtains access to the customer's data in the DataHub, i.e. only the data relevant for the supplier.

A supplier with whom the customer does not have a contractual relationship (i.e. a potential supplier)/a third party can be authorised to access the customer's data. The authorisation is part of the customer-controlled access to data in the DataHub, whereby a customer can grant data authorisation by using the NemID function on the *Eloverblik.dk* website. The customer may withdraw the authorisation granted at any time.

Customers access to consumption data (gas)

²⁵ NemID is a common secure log-in solution to the internet, used in Denmark by all residents in the country.

Gas consumers' data is not collected in the DataHub, since the DataHub solely covers the electricity market. Gas consumers can typically access their consumption data, etc. by using the NemID login function on the gas supplier's website.

Electricity comparison tool

Pursuant to the Danish Electricity Supply Act²⁶, it is DUR's responsibility to establish and operate an online comparison tool for electricity products offered to customers with an annual consumption of up to 100,000 kWh.

The public website and *elpris.dk* comparison tool was established by DUR in 2016. The overall purpose of *elpris.dk* is to increase transparency and customer awareness with regard to products and prices in the Danish retail market for electricity, thereby enabling customers to make an informed decision about which product to choose.

Gas comparison tool

Information on all gas products and prices is available and comparable on the *gaspris-guiden.dk* comparison tool. DUR has regulatory oversight of the comparison tool, which is operated by the Danish TSO, Energinet. In 2023, DUR will take over the task of operating the comparison tool from Energinet.

Electricity disconnection rates

DUR monitors the electricity disconnection rates in Denmark. In 2021, there were 7.4 percent instances of electricity disconnection due to household customers' non-payment of collateral, i.e. not non-payment of consumed electricity.

In Denmark, electricity suppliers cannot disconnect household customers due to non-payment of consumed electricity. If the supplier has justified reasons to expect non-payment, the supplier can require security for the continued supply of electricity. The legal requirements regarding the minimum time between notification to provide security and disconnection depend on whether or not the household customer is in arrears with the supplier.

Consumer complaint 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 regarding matters that fall within the scope of our competence to anyone who contacts us.

Consumer complaints can be submitted to the Energy Supplies Complaint Board. The Energy Supplies Complaint Board handles all complaints from household consumers regarding the purchase and delivery of electricity, heating and/or gas.

²⁶ Section 82 b(1) of the Danish Electricity Supply Act.

Before submitting a complaint, the consumer must have attempted to contact the supplier and sought to resolve the dispute bilaterally. Otherwise, this constitutes grounds for the Board's refusal to take 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 contention. The energy company has to pay a fee of DKK 8,500 (approximately EUR 1,140) if the case is concluded in favour of the consumer. However, if the case ends in 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 processing time was approximately five to ten months in 2021.

When the Board has reached a decision, it will be possible for either party to bring the matter to court. Decisions of the Board are not binding or enforceable. Nevertheless, there is a high compliance percentage for cases decided by the Board. In 2021, energy companies complied with the decisions of the Board in 100 per cent of cases, according to the 2021 Annual Report from the Energy Supplies Complaint Board.²⁷

²⁷ More information regarding the Energy Supplies Complaint Board is available on the Board's [website](#) (in Danish only).