Danish
Utility Regulator

Market Report 2020
The Danish Wholesale Gas Market

ENGLISH SUMMARY OF "MARKEDSRAPPORT FOR 2020, ENGROSMARKEDET FOR GAS"

JUNE 2021

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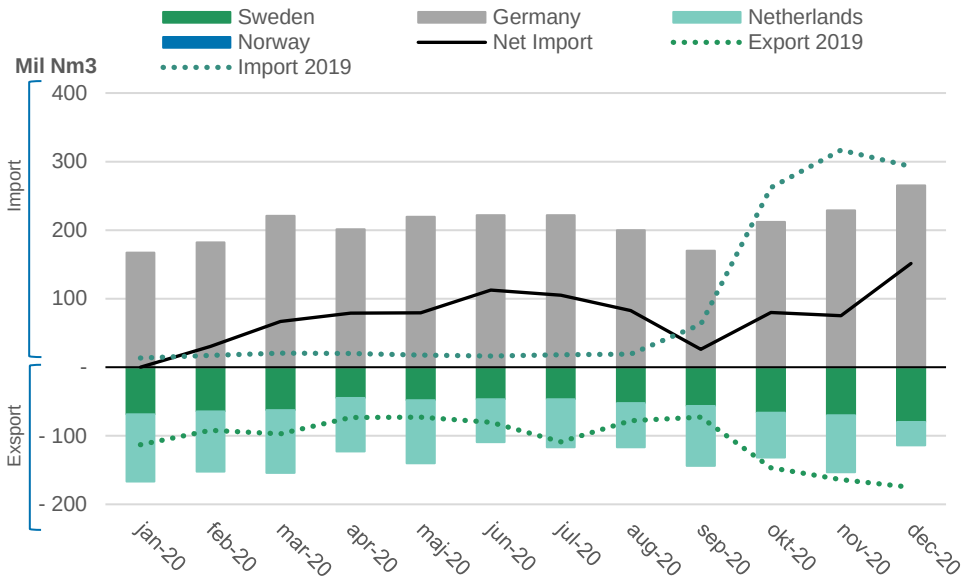
SUMMARY[1]

Denmark has been a net exporter of natural gas since 1984, but due to the temporary shutdown of the Tyra-platform in 2019, Denmark went from being a self-sufficient export nation to importing the majority of its gas consumption. Denmark was therefore a net importer of gas through the year of 2020, cf. figure 1.

FIGURE 1 | **IMPORT AND EXPORT PER COUNTRY FOR 2020**



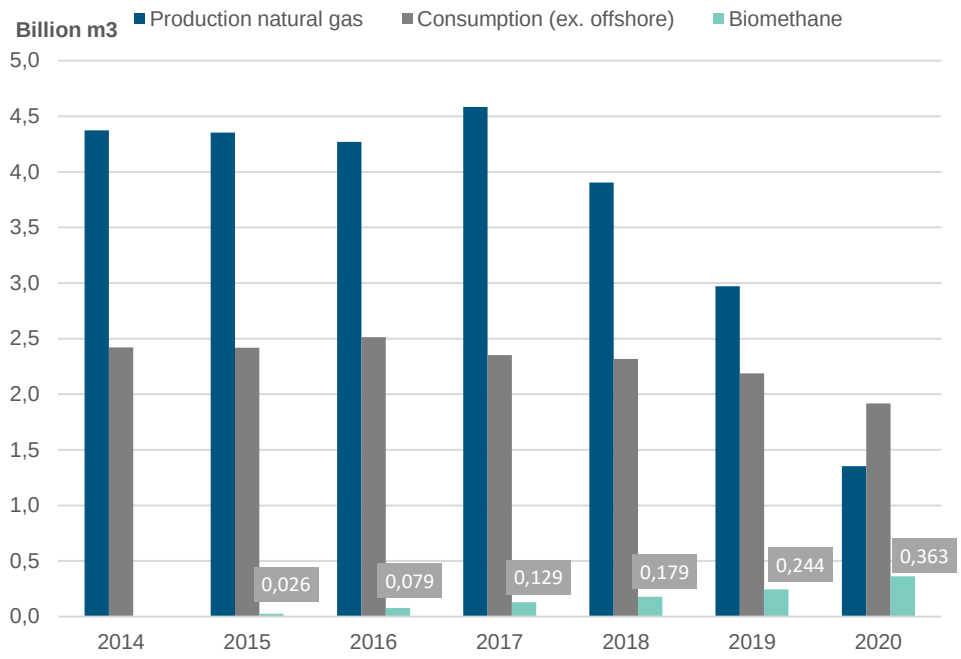
Source: The Danish Utility Regulator based on data from the Danish Energy Agency.
Note: Import from Norway are from Trym field, which is connected to the Danish system and currently shut down.

The production of natural gas in Denmark was 1.35 billion m^3 in 2020, which is 54 pct. lower than in 2019 and a decrease of 65 pct. compared to 2018. A large part of the production is transported directly to the Netherlands through the offshore pipeline Tyra Vest-F3. The production of bio-methane gas continued to increase and reached 363 million m^3 in 2020, cf. figure 2. The bio-methane gas production share of natural gas consumption was 19 pct. in 2020, which is 8 percentage points higher than the year before.

The Danish gas consumption was 1.92 billion m^3. The consumption has been decreasing since 2016 and reached its lowest level since 2002 in 2020, cf. figure 2. The Danish gas consumption is affected by temperature levels. The year 2020 was on average warmer than the previous years, and the weather was therefore an instrumental factor in explaining the decrease in consumption.

[1] This is a summary in English of the annual market monitoring report of the Danish wholesale gas market: *Markedsrapport for 2020, Engrosmarkedet for Gas* published by the Danish Utility Regulator. The report is available here.

FIGURE 2 | **ANNUAL PRODUCTION AND CONSUMPTION, 2014-2020**



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.

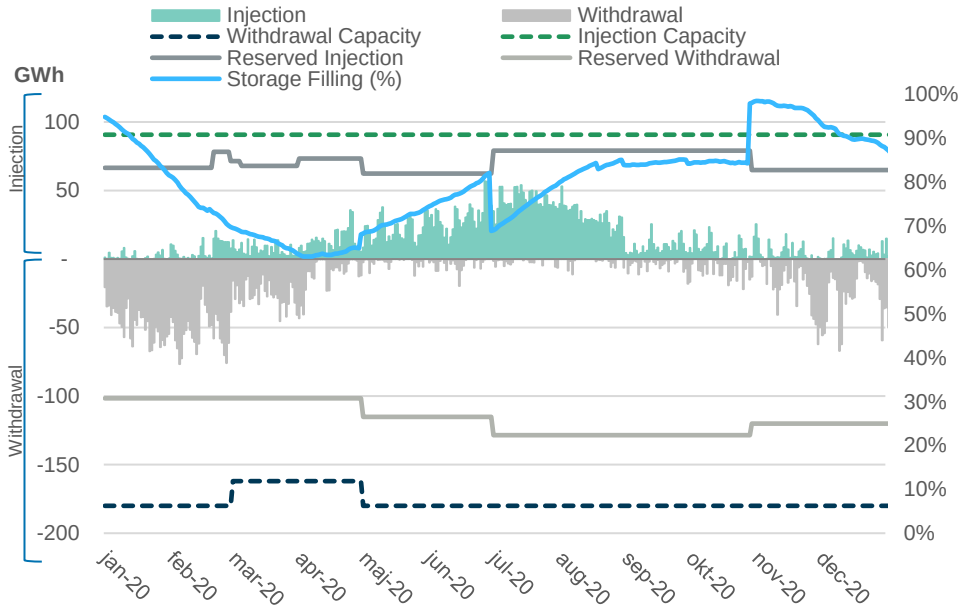
Nonetheless, the total import was 2.51 billion m^3 in 2020, which is a 133 pct. increase compared to the year before. The drastic increase was due to the temporary shutdown of the Tyra-platform. The import of natural gas was bigger than the Danish gas consumption, which, i.a., is due to the fact that a part of the import is transported to Sweden and injected into gas storages.

The German TSO, Gasunie Deutschland (GUD), reduced the southbound German capacity at the Ellund interconnection point from 3.6 GWh/h to 0 GWh/h on the 1st of January 2020. The reduction did not have a practical impact throughout the year because Denmark was a net import of natural gas in 2020. The reduction of capacity at Ellund may be an issue for future export of natural gas from the North Sea to Germany as the lack of export opportunities will negatively impact the functionality of the Danish wholesale gas market and the market integration between Denmark and the Northwestern Europe. A project proposal submitted by Energinet and the German TSO's, GUD and Open Grid Europe, entail a project for incremental capacity of 2.5 GWh/h southbound firm capacity from 2027 at Ellund. It is a premise for the participation of Energinet in the project proposal, that a partly re-establishment of the firm capacity must take place already from 2022. The Danish Utility Regulator and the German regulator, Bundesnetzagentur, has approved the project proposal in a coordinated decision. In addition, the Danish Utility Regulator and the Bundesnetzagentur has agreed to monitor the re-establishment of firm capacity from 2022 onwards.

In 2020, 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.

Gas Storage Denmark's two storage facilities had a total available storage capacity of 10,458 GWh in 2020, which is a decrease of 1.7 pct. compared to 2019. The decrease is in spite of the successful extension of technical storage capacity. The gas storage has been re-filled with imported German natural gas throughout 2020. The German gas has a lower calorific value than natural gas from the North Sea, which is one of the reasons behind the decrease in total available storage capacity. The storage capacity was sold out in 2020 at an average price of 5.14 EUR/MWh, which is 26 pct. higher than in 2019. The gas storage capacity utilisation was at a very high level throughout the year and was never below 60 pct., cf. figure 3. This is mainly due to the relatively warm weather throughout the year. The utilisation of the gas storages is also affected by the price development in the gas market.

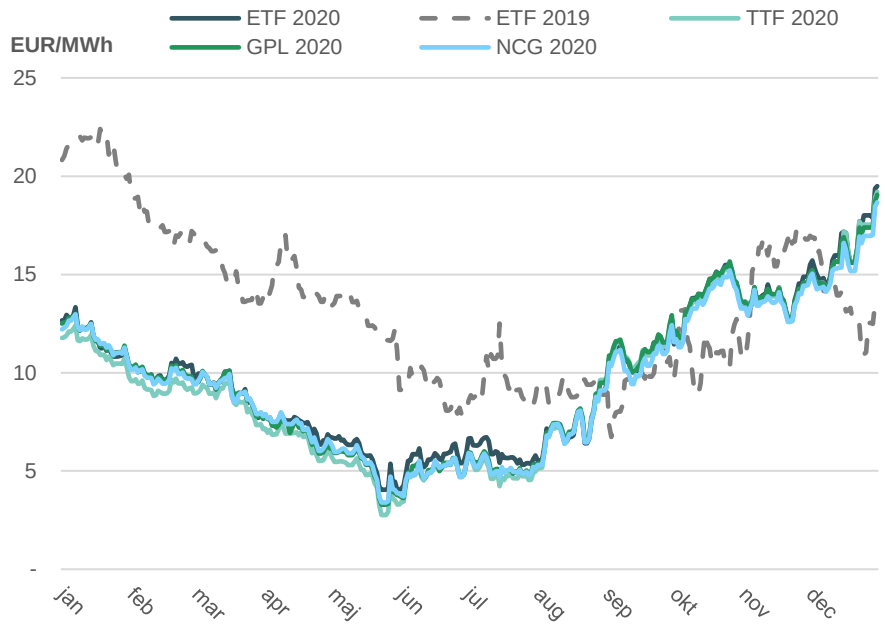
FIGURE 1 | **STORAGE FILLING, INJECTION AND WITHDRAWAL FOR 2020**



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

The average spot price in 2020 was 9.82 EUR/MWh, which is 26 pct. lower than in 2019. On the 30th of May 2020, the lowest spot price on EEX ETF was registered at 4.03 EUR/MWh. This is the lowest daily spot price since 2008. Throughout 2020 the spot prices in Denmark have generally been at a higher level than the German gas markets with an average price spread of 0.27 EUR/MWh, cf. figure 4.

FIGURE 2 | **PRICE DEVELOPMENT FOR DAY-AHEAD IN DENMARK, NETHERLANDS AND GERMANY FOR 2020**

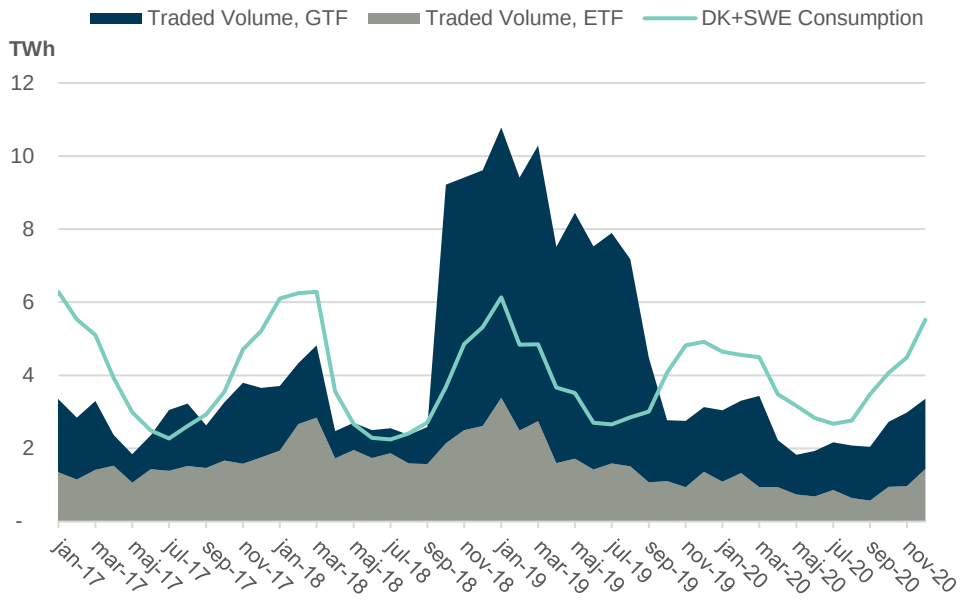


Kilde: The Danish Utility Regulator based on data from PEGAS and EEX.
Note: Spot prices on the day-ahead market is estimated by the European Gas Spot Index (EGSI) for the Danish Exchange Transfer Facility, the Dutch Title Transfer Facility, and the German Gaspool and NetConnect Germany. EGSI is estimated for each delivery day as a volume weighted average of day and weekend contracts with delivery the actual day.

In 2020, 11 TWh was delivered at ETF, which is the delivery point for gas traded at the exchange EEX. There was delivery of 20 TWh at GTF, which is the delivery point for bilateral gas contracts. In 2019, 21 and 61 TWh were delivered at ETF and GTF, respectively. The decrease is mainly due to the temporary shutdown of the Tyra-platform, cf. figure 5.

During the temporary shutdown of the Tyra-platform, the Danish Utility Regulator has an increased focus on the utilisation of the Ellund interconnection point. The continuous analysis and monitoring shows that there has been systematic flows of small volumes against price signals. During large parts of 2020, there has been un-utilised transportation capacity at Ellund, which indicates that market participants had the opportunity of utilizing the difference in prices between the Danish and German markets.

FIGURE 3 | **TRADED VOLUME AT ETF AND GTF FOR 2017-2020**



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

The Danish Utility Regulator also examines the development in market concentration on the Danish gas market. This is estimated by the Herfindahl-Hirschman Index (HHI) and is used as an indicator for 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 the buyer-side in 2020, while it has increased for seller-side. The HHI was below 2,000 on the buyer-side, which corresponds to the average level in the past 10 years, when 2019 is ignored, where the HHI was extraordinarily high. In 2020, the HHI for the seller-side at GTF was almost at 2,700, which is the highest level since 2014.

The year 2020 was unusual for the Danish society due to the COVID-19 epidemic. Based on available data, it is not possible to demonstrate that the epidemic had a real impact on the Danish wholesale gas market. However, the extent of the epidemic did mean that Total E&P Danmark A/S announced that the commencement of production from the Tyra-platform is postponed by 11 months till the 1st of June 2023.

The Danish Utility Regulator published one major decision during the year. In July, the Danish Utility Regulator approved an amendment to the Energinet's balancing model. The amendment changed the method for setting balancing prices when the gas price is negative, thus upholding the market participants' incentives to balance the system.

Additionally, the Danish Utility Regulator 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 the Danish Utility Regulator and the Danish Energy Board of Appeal. In July 2020, the Danish Utility Regulator decided to re-examine the original complaint and additional complaints regarding the tariff level in the Danish offshore system. The complaints are expected to be considered parallel. The Danish Utility Regulator expects to publish decisions on the complaints within the first six months of 2022.

FOCUS AREAS FOR 2021

The Danish Utility Regulator has a number of focus areas for the wholesale gas market in 2021. The focus areas are unaltered compared to 2020 as the supply and market conditions are unchanged. The market impact from the temporary shutdown of the Tyra-platform is a pivotal point for the focus areas in 2021, cf. box 1. The focus areas are expected to change fundamentally after the commissioning of the Baltic Pipe and the commencement of the Tyra-platform in the 4th quarter of 2022 and 2nd quarter of 2023, respectively.

BOX 1 | **FOCUS AREAS FOR 2021**

The Danish Utility Regulator market monitoring for 2021 will be strongly focused on the shutdown of the Tyra platform from September 2019 to June 2023.

The market monitoring will especially focus on the Ellund interconnection point between Denmark and Germany. Denmark became an import country with only one primary supply route from the fall of 2019. The Danish Utility Regulator will continue to analyse and monitor whether significant or systematic transport of gas against price signals is occurring and whether capacity at the Ellund connection is utilised efficiently.

In addition, the Danish Utility Regulator will closely follow the development of the process to re-establish German import capacity at Ellund after the commencement of production from the Tyra-platform.

The Danish Utility Regulator's market monitoring will follow the price developments in the Danish gas market. In addition, the Danish Utility Regulator will focus on market dynamics, trade behaviour and market concentration during this period.

The utilisation of the Danish gas storage facilities will be monitored as their efficient and appropriate utilisation is central to the supply situation during the coming years. The Danish Utility Regulator is responsible for the oversight of the terms for access to storage capacity, as well as other obligations according to the European gas regulation

IMPORTANT EVENTS IN 2020

The temporary shutdown of the Tyra platform in 2019 and the following years have great impact on the Danish wholesale gas market. As in previous years, this year has also been eventful for the wholesale market in Denmark. The Danish Western High Court ruling in the tariff offshore-case is among the events which occurred in the Danish gas market in 2020, cf. table 1.

TABLE 1 | **IMPORTANT EVENTS FOR THE DANISH WHOLESALE GAS MARKET, 2019-2020**

21 September 2019	The Tyra-platform shuts down export and production temporarily. Denmark/Sweden will until then be supplied through the Ellund IP and from the Syd-Arne-field and biogas production, read more here.
29 April 2020	The Danish Utility Regulator publishes a report regarding Economic Regulation and Green Transition. The Danish Utility Regulator assesses i.a. that only the gas distribution network should be covered by economic regulation, while other instruments shall be used regarding gas production. Read more here.
16 April 2020	The Danish Western High Court rules in 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 invalidates the previous decisions. The Danish Utility Regulator assesses next steps. Read more here.
30 May 2020	The EEX ETF spot price falls to 4.03 EUR/MWh and thus reaches a price level lower than the lowest spot price in 2019.
22 June 2020	A majority of the Danish Parliament agrees on a climate deal which among other things focuses on promoting biogas and investments in Power-to-X and CCS. Read more here.
8 July 2020	The Danish Utility Regulator decides to re-examine the complaints regarding the setting of tariffs for transportation in the offshore system. The Danish Utility Regulator expects that the related complaints may be considered in parallel and that decisions may also be taken in parallel. Read more here.
17 July 2020	The Danish Utility Regulator decides to approve an addition to the balancing model. The addition changes the method for setting balancing prices at negative gas prices. The changes are necessary to maintain the net users' incentive to balance. Read more here.
2 September 2020	The Danish Utility Regulator publishes the annual National Report to the CEER. The report concerns among other things the monitoring of the gas market and regulatory development. Read more here.
1 October 2020	The Danish Energy Agency permits the operation of North Stream 2. Read more here.
29 October 2020	Gas Storage Denmark announces that the total technical storage capacity has increased to 10,465 GWh. This was due to an expansion of the aquifer storage facilities at Stenlille where they utilized the low spot prices to inject additional gas through a period of 120 days. Read more here.
2 November 2020	Energinet sells Evida to the Danish Ministry of Finance at a price of 4.2 billion DKK. Evida is the national gas distribution company and is a result of the consolidation of former Dansk Gasdistribution and HMN GasNet. Read more here.
6 November 2020	Total E&P Danmark A/S announces in a REMIT message that commencement of operation of the Tyra-platform has been postponed to 1st June 2023 due to COVID-19. Read more here (ID: 2980).
11 November 2020	The Danish Ministry of Climate, Energy, and Utilities/The Danish Energy Agency initiates a public consultation on "*Lov om ændring af lov om naturgasforsyning, lov om fremme af vedvarende energi og forskellige andre love*". The purpose of the draft legislation is among other things to ensure an improved support for the development of Power-to-X and biogas.
5 December 2020	A majority in the Danish Parliament decides to end Danish oil and gas production in the North Sea from 2050. It is also decided to cancel the 8th licensing round. The cancellation happened after Total withdrew from the licensing round on the 4th of October 2020. Read more here.
16 December 2020	The Danish Utility Regulator and the Energimarknadsinspektionen postpone the assessment of the Danish-Swedish wholesale gas market. This is due to the considerable changes the gas market is facing. It is postponed until the recommencement of operation of the Tyra-platform. Read more here.

Sources: The Danish Utility Regulator based on own decisions; The Danish Ministry of Climate, Energy, and Utilities; The Danish Ministry of Finance; Energinet; The Danish Energy Agency; EEX; gasmarketmessage.dk; Gas Storage Denmark