



Forsyningstilsynet

# Market report 2018

## The Danish wholesale gas market

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ENGLISH SUMMARY

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## FOCUS AREAS FOR THE DANISH UTILITY REGULATOR IN 2019

The Danish Utility Regulator's (DUR's) market monitoring for 2019 and the coming years will follow the shutdown of the Tyra Platform from September 2019 to July 2022 closely.

The utilisation of the Danish gas storage facilities will be monitored as efficient and appropriate utilisation is central for the supply situation during the next three years. The DUR is responsible for the oversight of the terms and access of the storage company as well as other obligations according to the European gas regulation.

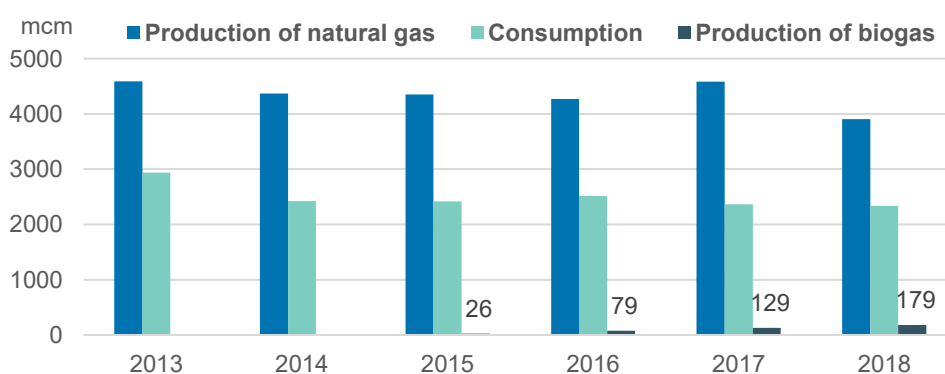
The market monitoring will especially be focused on the Ellund connection between Denmark and Germany. The DUR will continue to analyse whether significant or systematic transport of gas against the price signals is taking place.

The price development will be monitored during the period 2019-2022 where Denmark will have one primary supply route. Furthermore, the DUR will monitor whether the market dynamics, trade behaviour and market concentration change during this period.

## SUMMARY

Denmark is a self-sufficient gas producing country and the production of natural gas in 2018 amounted to 3.9 billion cubic meter (bcm). This is 15% lower than the production in 2017 and the lowest level in five years. The production of biogas has increased significantly during the same period and reached a level equivalent to 9% of the Danish gas consumption in December 2018, cf. figure 1.

FIGURE 1 | GAS PRODUCTION AND CONSUMPTION, 2013-2018



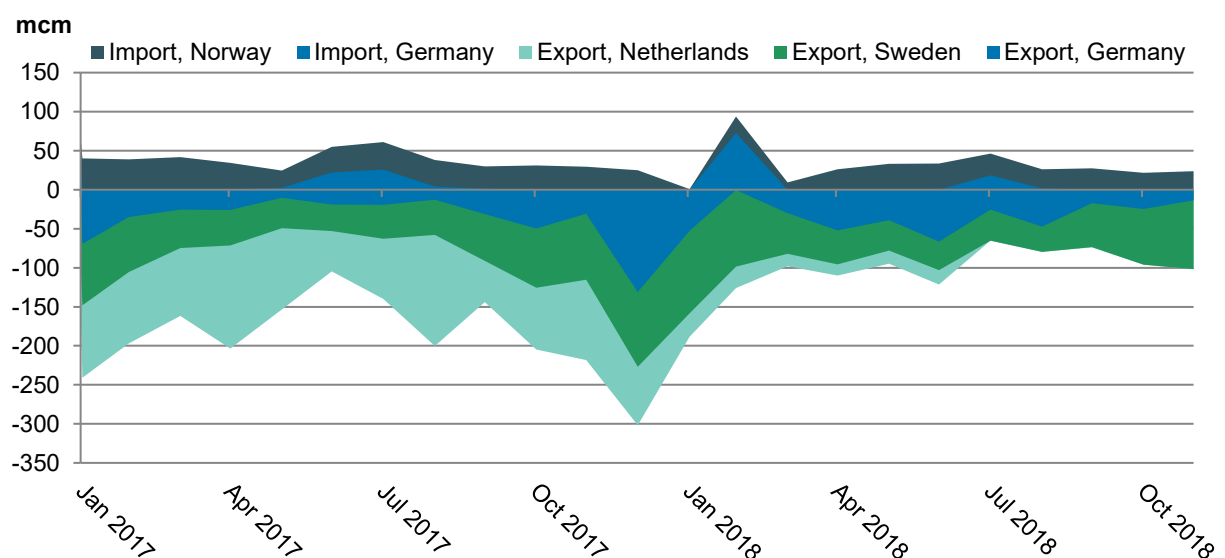
Source: The Danish Utility Regulator based on data from the Danish Energy Agency and Energinet

The Danish gas consumption has been relatively stable since 2014 and amounted to 2.3 bcm in 2018, cf. figure 1. Gas consumption is affected by low temperatures as more than half of the consumption is used by households for heating or for generation of power and district heating. Consumption increased in February and March 2018 when an unusual, Siberian cold spell hit Europe. The Danish Energy Agency estimates that the Danish gas consumption will decrease by 23% during the next ten years. The development will mainly be driven by lower consumption by households and generation of power and district heating.

During 2017 and 2018, the ownership structure in the Danish part of the North Sea has changed due to several acquisitions. The Danish Underground Consortium (DUC) and the upstream gas pipeline Tyra West-F3, which brings gas to the Netherlands, is now owned by the French energy company Total, the Norwegian oil and gas company Noreco and the Danish state-owned company Nordsøfonden.

Denmark was net exporting gas in 2018 but exported 37% less than last year. This was due to reduced export to the Netherlands from July 2018 when the Tyra West-F3 pipeline was closed for a period of 14 months. Import of gas mainly occurred in March when the cold spell hit Europe and demand increased, cf. figure 3. Initially, large amounts of gas were exported to Germany in spite of increased Danish gas demand, because the German gas prices exceeded the Danish balancing price. Therefore, the Danish gas transmission system operator, Energinet, declared Early Warning due to concerns about the supply situation. The Early Warning lasted 20 days.

FIGURE 2 | DANISH IMPORT AND EXPORT, 2017-2018



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

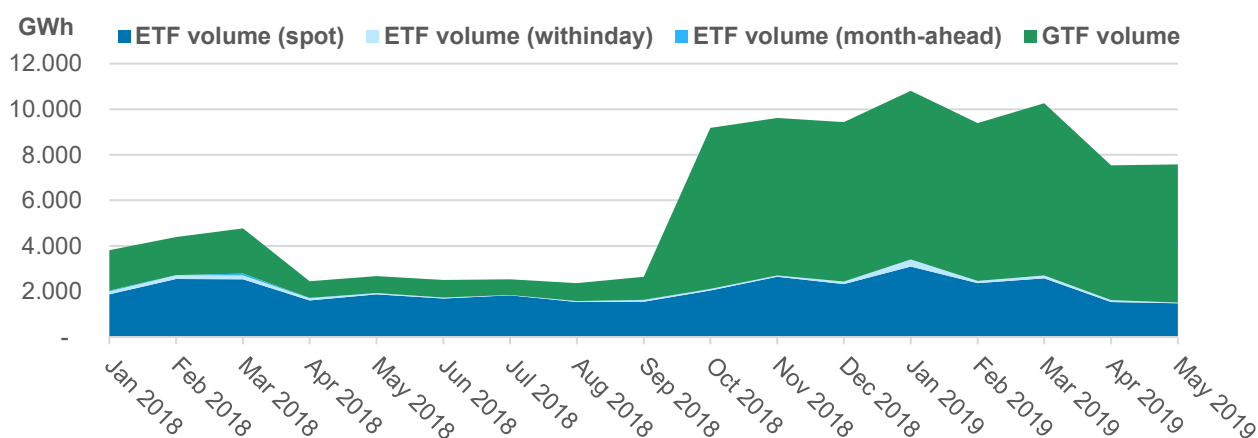
The Tyra platform, which processes 90% of the gas produced in the Danish part of the North Sea, will be shut down from 19<sup>th</sup> of September 2019 to 1<sup>st</sup> of July 2022 to be re-build. During this period, the Danish gas market will primarily be supplied with gas from Germany as well as smaller source as the South Arne field and biogas production. This will change the supply situation significantly, as Denmark will change from being a self-sufficient net exporter to having to import the majority of the gas from Germany.

At the Ellund connection between Denmark and Germany, gas was mainly exported to Germany in 2018. There was sufficient firm transmission capacity in both directions compared to the actual gas flows. About half of the Danish import capacity appears to be reserved on long contracts, while the Danish export capacity appears to be reserved on shorter contracts.

An analysis conducted by the Danish Utility Regulator compares the gas flows at Ellund with the price signals, composed of the price spreads and transportation costs, for the Danish and German markets. The analysis for 2018 showed no significant or systematic transportation against the price signals, which is a notable improvement compared to 2015 when the analysis was first conducted.

Gas Storage Denmark's two storage facilities, Lille Torup and Stenlille, had a combined capacity in 2018 of 858 million cubic meter (mcm) which was sold at an average price of 1.44 EUR/MWh. 2018 was a very unusual year due to the cold spell and Energinet's Early Warning declaration. The storage customers extracted gas amounting to the maximum capacity on four consecutive days and the storage facilities were only 12% full in the middle of April.

FIGURE 3 | TRADED VOLUME IN THE DANISH WHOLESALE GAS MARKET IN 2018



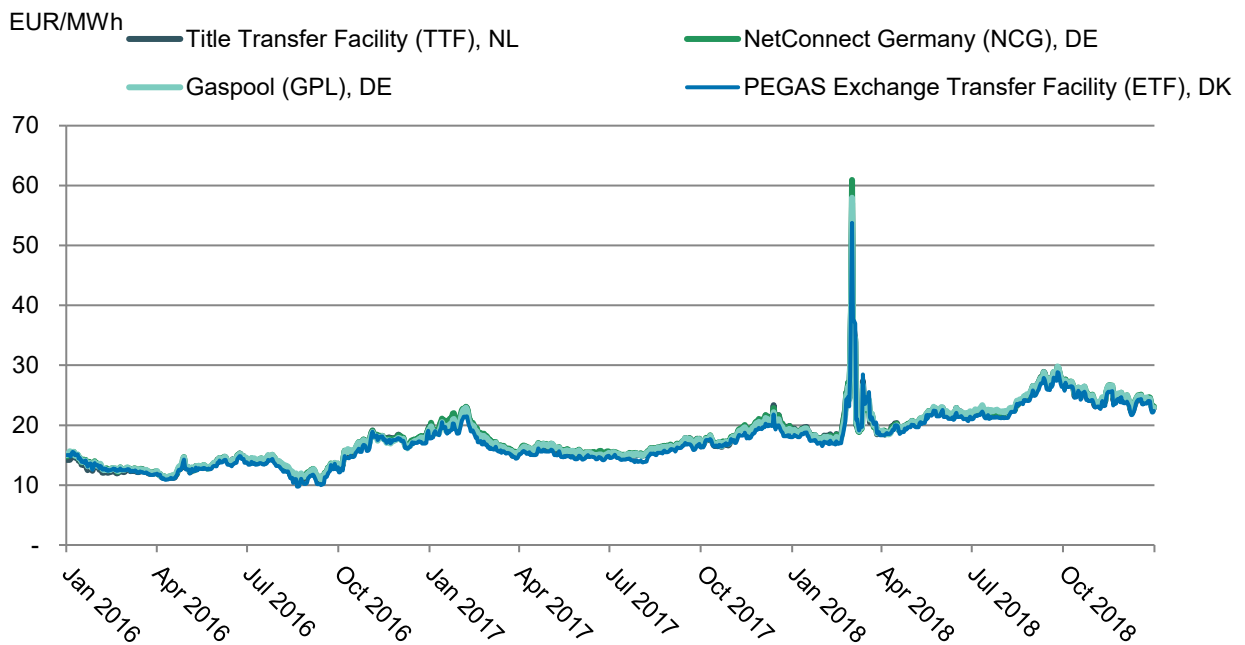
Source: The Danish Utility Regulator based on data from PEGAS ETF

The traded volume on the Danish gas exchange PEGAS ETF (formerly Gaspoint Nordic) amounted to 25 TWh in 2018, which is the highest amount since the establishment of the exchange in 2008. The majority of trade on the exchange was spot products. Withinday products amounted to 4% of the traded volume and 11% of all trades in

2018, while the share of month-ahead products was very limited in 2018. The share of gas traded on bilateral contracts and delivered on the virtual delivery point Gas Transfer Facility (GTF) increased sharply from October 2018, cf. figure 3.

In 2018, gas prices recovered to some extent from the price levels in 2016 and 2017. The average Danish spot price was 22.19 EUR/MWh, which is 26% higher than in 2017. The gas prices increased significantly in Denmark and the rest of North-western Europe in the end of February due to the unusually cold period. The prices in Denmark, Germany and the Netherlands peaked the 2<sup>nd</sup> March around 54-61 EUR/MWh before returning to a price level of 18-20 EUR/MWh in April, cf. figure 4.

FIGURE 4 | SPOT PRICE DEVELOPMENT, 2016-2018



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

Note: Spot prices are calculated as PEGAS' European Gas Spot Index (EGSI)

The Danish prices were generally lower than the German and Dutch prices in 2018 and the average price spread was roughly -0.65 EUR/MWh. However, in March 2018 during Energinet's declaration of Early Warning the Danish prices were higher than the German and Dutch, cf. figure 5.