Denmark

**Key aspects:**
- Gas consumption in a steep decline since 2010
- Self-sufficient in gas but production in steep decline since 2005
- Questionable ability to replace depleting reserves
- Important geographical situation to deliver gas to Sweden, Germany and the NL
- Concerned by problematic new gas PCI infrastructure

**I. Gas demand**

**Gross inland consumption for Denmark, per sector**

*E3G compilation of data extracted from Eurostat*

According to EU data:

- Gas represented 17.1% of Denmark’s energy mix in 2015.
- Denmark consumed around 3.46 bcm of gas in 2015: Gas demand dropped by 35.4% since 2010.
- Denmark represents 0.8% of European gas demand (ranks 16th in EU 28)
  - Industrial gas demand dropped by -7.8% between 2010 and 2014
  - Power sector gas demand dropped by -58.6% between 2010 and 2014
  - Residential gas demand dropped by -24.4% between 2010 and 2014

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1 E3G compilation of data extracted from Eurostat
II. Gas supply

Since the beginning of fossil gas production in the North Sea in 1984, Denmark has been self-sufficient in gas and has been a net exporter since then. The International Energy Agency projects it to remain so at least until 2020. However, the production peaked in 2005 (with a total of 10.4 bcm/y produced) and has been quickly depleting since then (around 5 bcm were only produced in 2015).

Exports have been mostly going to Sweden (1.3 bcm), Germany (1.1 bcm) and the Netherlands (700 mcm). Denmark also occasionally import some gas which comes from Germany and Norway – See graph.

While some experts announced a few years ago that new discoveries in the North Sea could help offset the decline of the old historical reserves, this has not materialized since then. Attempts by Total to explore the onshore shale gas potential of the country between 2014 and 2016 found a strong public opposition which forced the company to stop its activities in the country.

III. Infrastructure

The Danish gas transmission system consists of upstream pipelines in the Danish part of the North Sea and onshore transmission pipelines.

The Danish gas transmission grid is directly connected to the German gas transmission grid (at Ellund) and to the Swedish gas system (at Dragør): It is worth noting that Sweden is solely supplied with gas via the Danish gas system.

Fossil gas from the Danish section of the North Sea is transported through two offshore pipelines from the Tyra and Syd Arne Fields (see map): The Tyra-Nybro pipeline has a capacity of approximately 10 bcm per year; the Syd Arne-Nybro pipeline capacity is around 5 bcm per year (gas volumes can be stored in the actual pipelines for use in the event of disruptions and emergency situations).

In 2004, another pipeline was built to be connected to the Northern Offshore Gas Transport (NOGAT) pipeline to the Netherlands for the purpose of selling gas to the Dutch market and feed into the “gas roundabout” the Dutch gas hub created in the last years.

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In a political context encouraging Member States to diversify their gas supplies, Denmark’s geographical situation attracts the interest of some Eastern Europe countries: Poland in particular has been strongly lobbying to build the **Baltic Pipe project**, a bidirectional gas pipeline connecting Poland to Denmark (see map) so Poland can receive **up to 10 bcm of Norwegian gas each year**, while, in the other direction Russian gas and excess gas from the Świnoujście LNG terminal can go to Denmark. The link between Denmark and Norway is still in discussion:

- One option would be to link the Baltic Pipe to Norway’s Statpipe and Denmark’s North Sea fields. Norwegian gas would enter the Danish pipeline infrastructure, before flowing though the Baltic Pipe. This approach has been projected to bring some 3-4bcm of Norwegian gas to Poland.
- A second option involves building a pipeline linking the Draupner and Sleipner gas fields in the Norwegian North Sea, to the west coast of Denmark. Gas would traverse Denmark to reach the Baltic Pipe (up to 10bcm per year could be sent up to the Baltic Pipe).

Whichever option is eventually chosen, the project is not legitimate: **Denmark is currently self-sufficient in gas and Poland is already well-diversified in terms of gas suppliers.** With its connections with Germany, its domestic production and its new LNG Terminal, Poland meets the diversification criteria (at least 3 different suppliers). The necessity to build such project is therefore strongly disputable. Its **economic viability is unsurprisingly questioned** by many, including by Norway itself which believes that a “**new pipeline is not necessary to manage gas exports**” and fears that current decreasing EU gas demand weakens the commercial viability of the project. However, the discussions continue and Poland pushes hard to make it happen. The construction (partly paid with tax payers’ money) would **not address a need for Poland** and would **risk to lock Denmark (a country well-advanced in RES development) in a long-term fossil fuel cycle**.

While the project has received political support (particularly from the EU: it is part of the current List of Projects of Common Interest⁸), its economic viability remains strongly questioned.⁹

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⁹ http://www.cEEP.be/polands-gas-diversification-nordic-dimension/

