

Expansion 2010 brings more clean energy

Expansion 2010 is a Gasum Oy project designed to strengthen and expand Finland's natural gas transmission network. The expansion consists of several smaller projects: constructing new natural gas pipelines, increasing the existing pipeline's transmission capacity and boosting the operational efficiency of compressor stations functioning at the transmission network's branching points.

Natural gas has been used in Finland for over 30 years. Positive practical experiences with this safe and clean form of energy, as well as its competitive price, have increased the demand for natural gas at a steady pace. A 35% increase in natural gas consumption is expected by the year 2015.

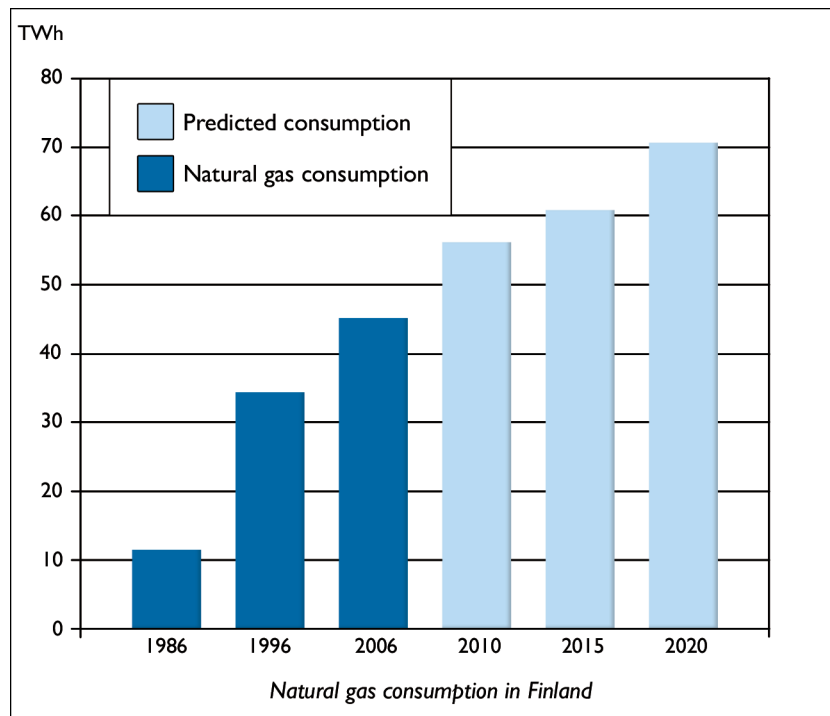
In the Helsinki Metropolitan Area, as well as in the Turku and Tampere growth centres, the demand for natural gas is increasing as a result of additional district heating capacity needs. Besides electricity and heating production, numerous industrial production facilities are switching to the use of natural gas owing to its environmental and economic advantages.

The growing demand for natural gas sets new requirements for the natural gas transmission network: the network must be extended into new areas and the transmission capacity must be increased. The Expansion 2010 project meets these challenges.

Finnish expertise

Gasum Oy is responsible for the import, transmission and wholesaling of natural gas in Finland. Gasum's owners are the Finnish Government, the Finnish energy company Fortum, the Russian natural gas supplier Gazprom and the German natural gas company E.ON Ruhrgas. Gasum employs 143 persons and it has branches in 6 localities.

Gasum has decades of experience with the natural gas business and its intention is to develop Finland's future natural gas markets. The



acquisition of natural gas is based on long-term agreements. Natural gas deliveries have been safe and dependable. Gasum is carrying out the Expansion 2010 project's technical implementation jointly with Neste Jacobs Oy.

Clean energy

Natural gas is an environmentally friendly form of energy; its use results in no sulphur dioxide emissions of any kind. The carbon dioxide emissions resulting from the combustion of natural gas are also substantially lower compared to other fossil fuels.

Additionally, the high utilisation efficiency achieved by natural gas in electricity and heating production minimises any emissions released.

The utilisation efficiency achieved in combined electricity and heating production exceeds 90%.

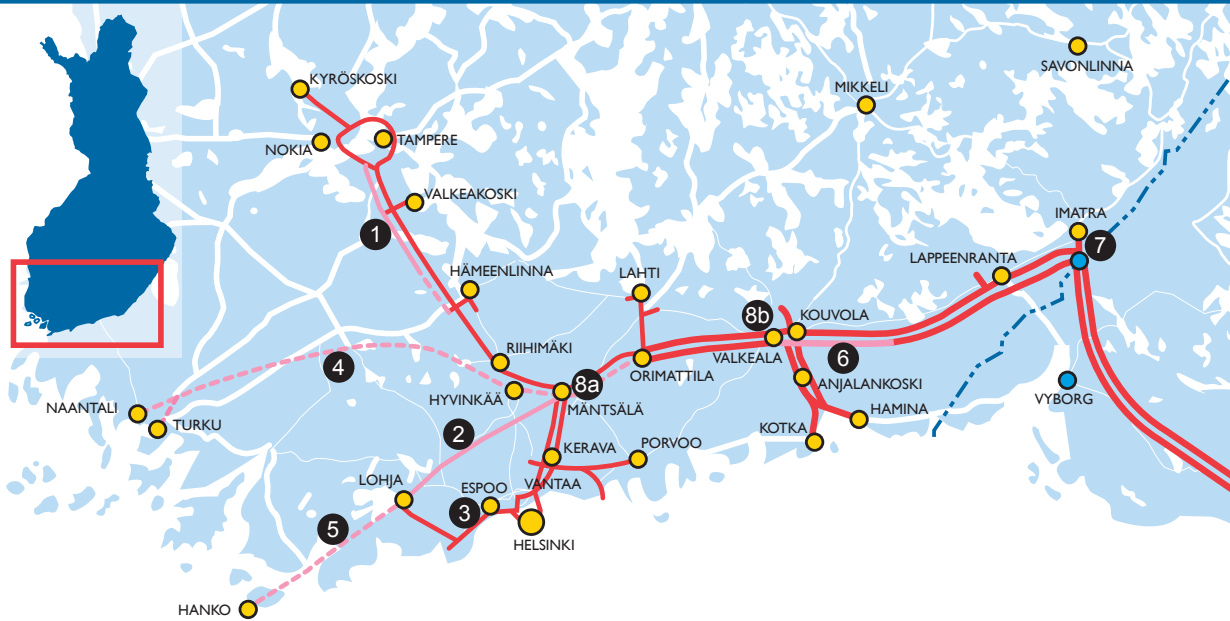
The adoption of natural gas has significantly reduced the emissions generated in Finland's energy production by replacing more polluting forms of energy such as coal and oil. For this reason natural gas also plays a key role in Finland's national climate programme.

You can find more information about natural gas at Gasum's website, where there is also plenty of information concerning the Expansion 2010 project:

- precise project-specific descriptions
- detailed alignment maps
- the latest news about the project's progress

www.gasum.com

Strengthening of Finland's natural gas transmission network



1 Hämeenlinna-Lempäälä parallel pipeline

Because the Tampere region's natural gas consumption is growing rapidly, a parallel pipeline is needed to increase transmission capacity. Land acquisitions will be carried out in a single stage along the entire Hämeenlinna-Lempäälä route. The construction of the parallel pipeline will be implemented in two stages: the first part will run from the Kutinen valve station in Kalvola to the Kulju valve station in Lempäälä.

Technical information and time schedule (first stage)

- pipeline length and diameter: 43 km / 50 cm
 - construction work begins: May 2008
 - ready for commercial use: October 2009
- Project Manager:** Markku Tynnelä (Tel. +358 400 550 053)

2 Mäntsälä-Siuntio natural gas pipeline

Besides providing additional transmission capacity to meet the needs of the Helsinki Metropolitan Area, the new natural gas pipeline will facilitate the marketing of natural gas to western Uusimaa municipalities – such as Nurmijärvi, Vihti and Karkkila – that currently fall outside the range of the natural gas transmission network. The pipeline will be built from the Hirvihaara valve station in Mäntsälä to the Pölans valve station in Siuntio.

Technical information and time schedule

- pipeline length and diameter: 89 km / 50 cm
 - construction work begins: May 2008
 - ready for commercial use: October 2009
- Project Manager:** Pekka Hytinkoski (Tel. +358 50 458 3491)

3 Suomenoja parallel pipeline

The parallel pipeline running from the valve station in Friisilä, Espoo to the Suomenoja pressure reduction station will bring the additional transmission capacity required by the construction of the new Suomenoja power station.

Technical information and time schedule

- pipeline length and diameter: 4 km / 30 cm
 - construction work begins: October 2007
 - ready for commercial use: June 2008
- Project Manager:** Markku Tynnelä (Tel. +358 400 550 053)

4 Natural gas pipeline to Turku economic zone

Gasum is planning an extension of the natural gas transmission network from Mäntsälä to Turku and Naantali. Electricity and district heating production in particular, as well as industrial processes, have increased the demand for natural gas in the Turku economic zone. Additionally, the opportunity to utilise natural gas will also be made available to smaller user groups. With respect to technical planning and environmental impact assessments, the opportunity to implement the expansion already exists.

Vice President, New Ventures: Björn Ahlnäs (Tel. +358 20 447 8630)

5 Lohja-Hanko natural gas pipeline

Extending the natural gas transmission network to Hanko is possible along the Mäntsälä-Siuntio pipeline. Gasum's market research indicates that there is a demand for natural gas in the Hanko region. The planned pipeline alignment will run from Virkkala in Lohja to Koverhar in Hanko.

Project Manager: Fred Lindfors (Tel. +358 50 458 3991)

6 Basic repair of main pipeline

During Gasum's periodic condition surveys, it was found that the natural gas pipeline constructed between Imatra and Valkeala built during the early 1970s is in need of repairs. The basic repairs will take place in stages: in the first phase, the section of piping between the Pajari valve station and Valkeala will be repaired.

Technical information and time schedule (first stage)

- pipeline length and diameter: 27 km / 70 cm
 - construction work begins: July 2008
 - ready for commercial use: July 2009
- Project Manager:** Fred Lindfors (Tel. +358 50 458 3991)

7 Renewal of Imatra measurement station

The Imatra measurement station functions as the reception point for Russian natural gas arriving in Finland. In connection with the project, the station's flow measurement technology and internal piping will be renewed, along with an approximately 1 km-long border area reception pipe.

Time schedule

- construction work begins: September 2007
 - ready for commercial use: October 2008
- Project Manager:** Esa Nykänen (Tel. +358 50 458 3208)

8a 8b Increase of compressor capacity

Compressor stations are used to raise gas pressure in the pipeline, thereby increasing transmission capacity. Because additional compressor capacity is required as the transmission network expands, a third compressor unit will be built at the Mäntsälä station. The new compressor unit will be operable by the year 2012. Also planned is an increase in the capacity of the Valkeala compressor station.

Project Manager: Ilkka Taka-aho (Tel. +358 400 714 398)

● Pressure reduction stations

At pressure reduction stations the transmission pipeline's pressure is reduced to facilitate distribution. Consequently the necessary number of pressure reduction stations will be built in connection with the new pipelines. The first pressure reduction station will be constructed near the Suomenoja power station.

Project Manager: Henry Stoor (Tel. +358 50 458 7025)