

An aerial photograph of a multi-lane highway bridge crossing a river. The water is a vibrant greenish-blue, and a boat is visible in the distance, leaving a white wake. The surrounding landscape is lush with trees in autumn colors of yellow and orange. On the left bank, there are several large, multi-story buildings with dark roofs. The sky is clear and blue. The overall scene is bright and scenic.

# Gasum

CLEANER ENERGY

# Finnish model for the development and integration of gas transport infrastructure

Gazterm 2019

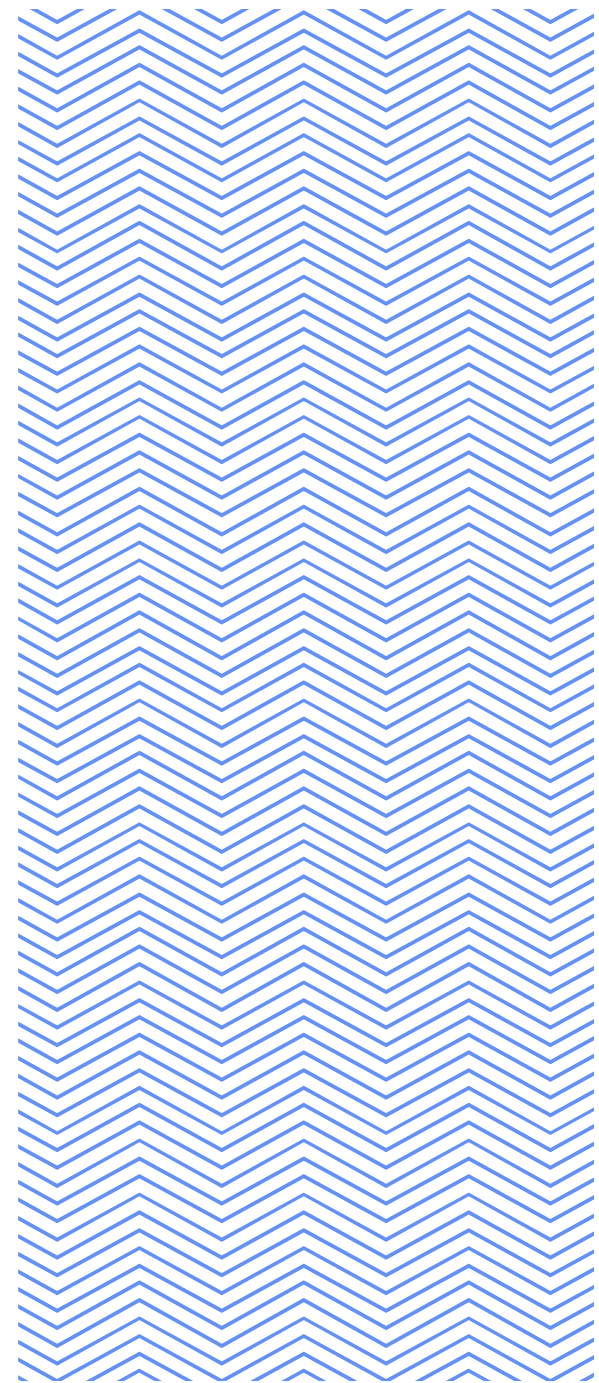
Jouni Haikarainen

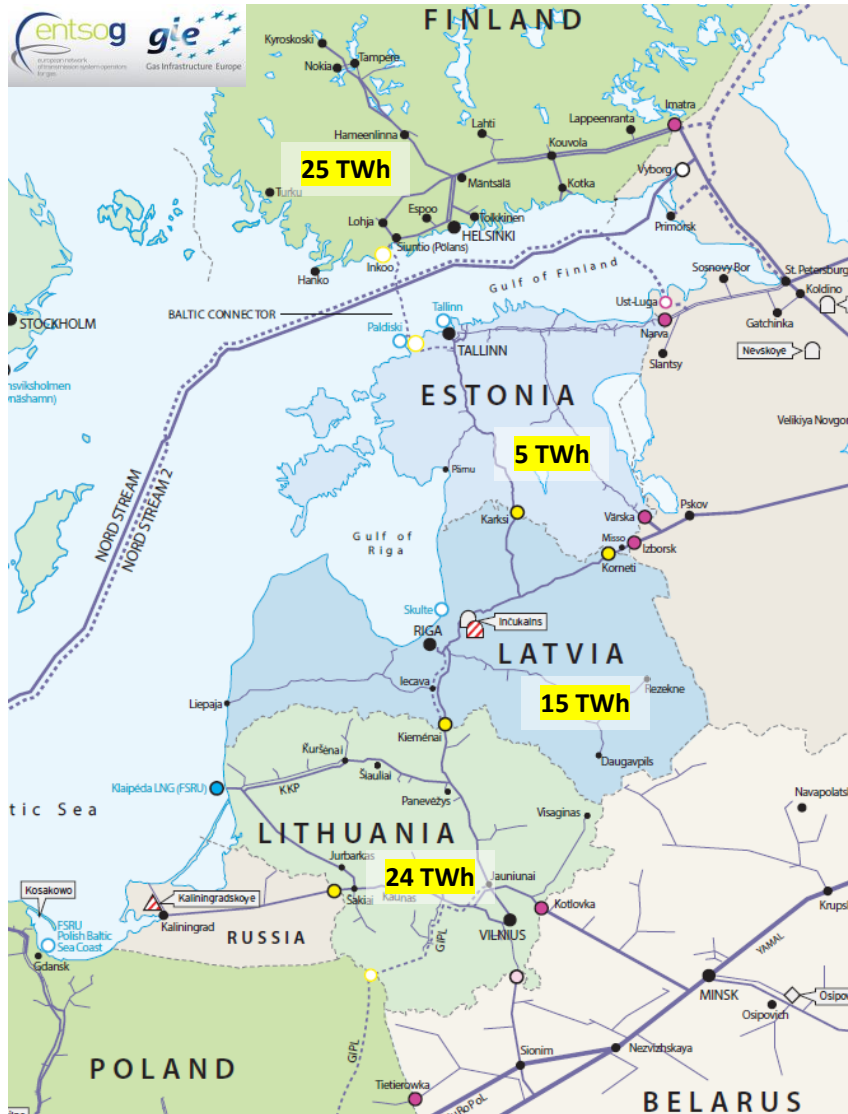
**Gasum**

## CONTENT

1. Gas market integration in the Baltic Sea region
2. Security of gas supply from Finnish perspective
3. Potential for LNG supplies to Finland
4. Prospects for cooperation regarding the EU strategic infrastructure

# 1. Gas Market Integration in the Baltic Sea Region





## BALTIC GAS MARKET INTEGRATION

- Finland, Estonia and Latvia will form a common Entry-Exit tariff zone 2020. Finland will remain its own balancing zone.
- Target to integrate the market fully – earliest 2022
- Finnish, Estonian and Latvian TSO's signed ITC-contract in January – distribution of entry revenues, harmonized entry tariffs
- Finland will open the gas market 2020 and give up derogation along with the commissioning of the Balticconnector pipeline connecting Finland to Estonia

# FINNISH GAS MARKET OPENING 2020

Finnish gas market will be opened for competition 2020 – The Natural gas market act was introduced 2017 and it has been in force since 2018.

The gas transmission network will be unbundled from Gasum by 2020 using ownership unbundling model.

The unbundled new TSO will be the Finnish gas transmission system operator responsible for gas transmission infrastructure and gas market services.

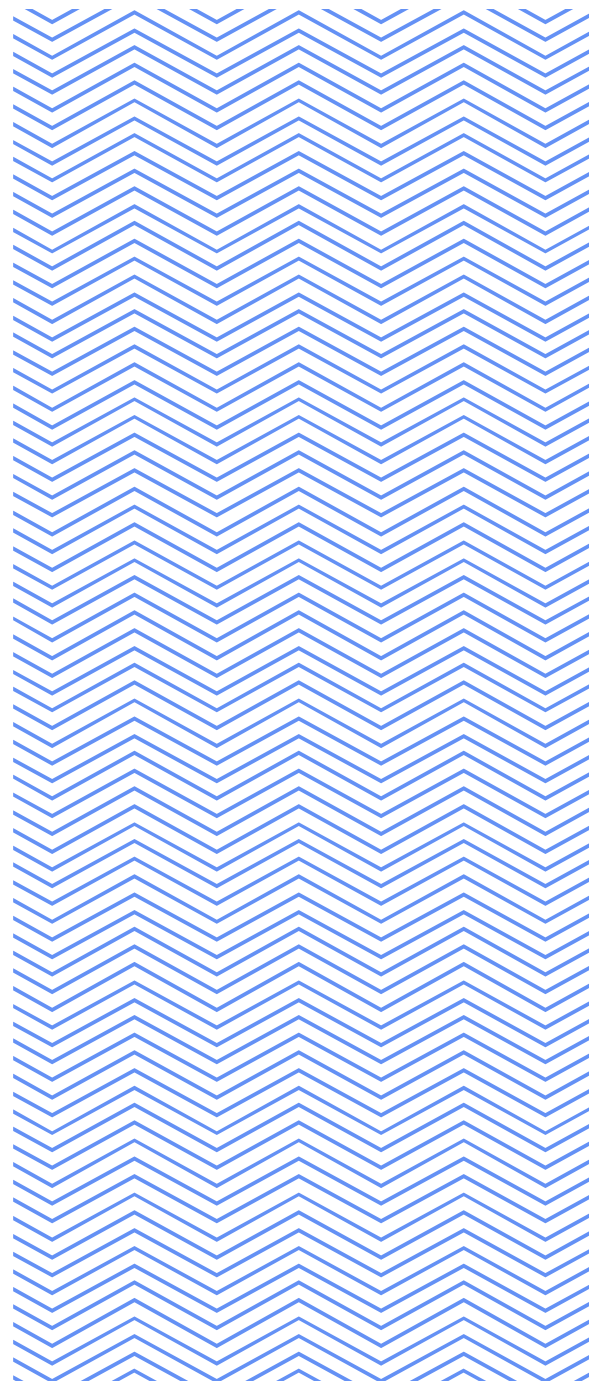


# GASUM WILL CONTINUE TO DEVELOP THE NORDIC GAS ECOSYSTEM

- LNG production plant
- LNG terminal
- LNG terminal (joint project)
- Gasum, biogas
- Gasum, biowaste and biogas
- Biogas production plant (joint project)

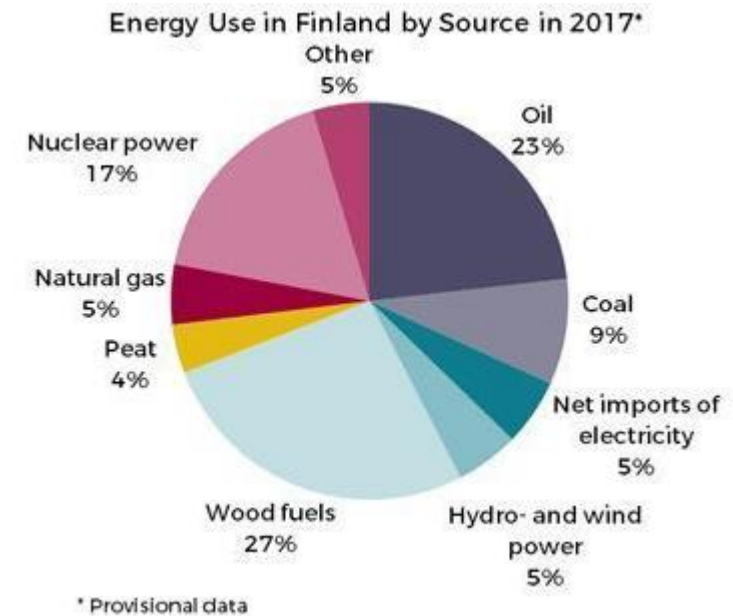
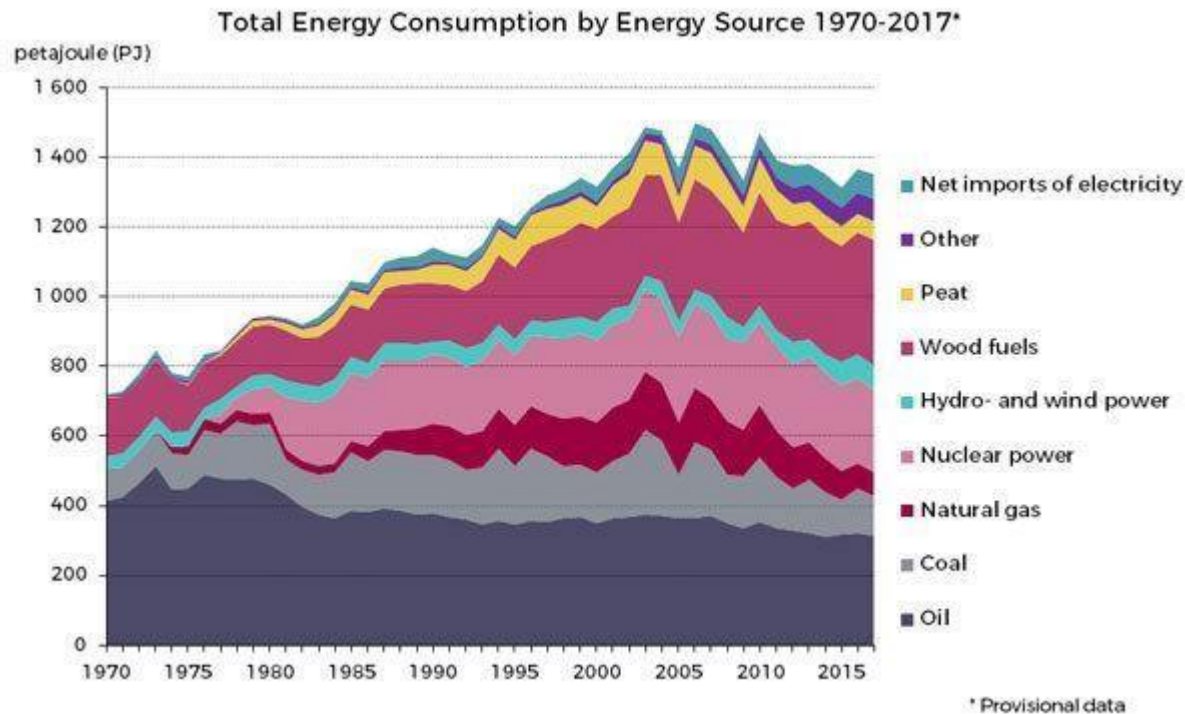


## 2. Security of Supply from Finnish Perspective





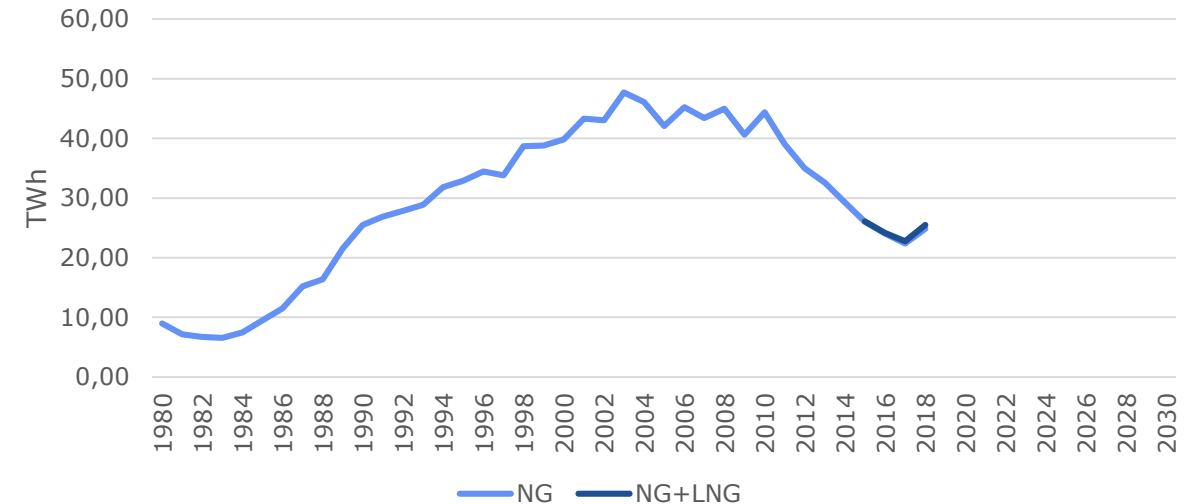
## TOTAL ENERGY CONSUMPTION IN FINLAND



## Natural gas to Finland since 1974

- Security of supply has been high - No interruptions ever
- Mainly large consumers – industry, heat & power producers
- Protected customers <5% of consumption
- Finland has no gas storage
- Since 1974 critical gas users have had **obligation to store alternative fuel** for minimum 3 months winter consumption → disturbances in the fuel supply would not cause an immediate energy crisis
- NG is competing continuously with alternative fuels; decline in consumption since 2010 due to energy and climate policy – after tax increases, natural gas has been largely replaced by local biofuels

Natural Gas Consumption in Finland 1980-2018

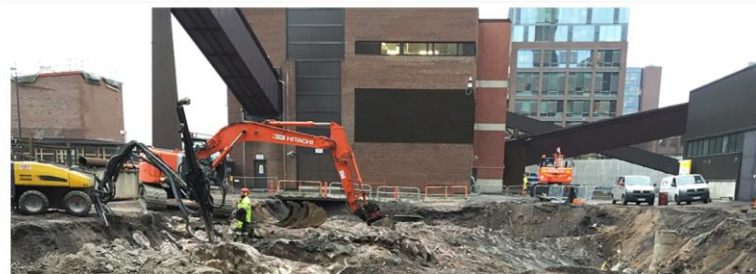


# COMPETITIVE ENERGY MARKET – BIOFUELS MARKET SHARE INCREASING

## Salmisaaren pellettilämpölaitoksen perustustyöt vauhtiin

Aleksi Nurmi joulukuu 14, 2016 Ei kommentteja

Helenin ensimmäisen pellettilämpölaitoksen rakennusprojektissa saavutettiin joulukuussa merkittävä virstanpylväs, kun kattilalaitoksen perustustyöt pääsivät alkamaan.



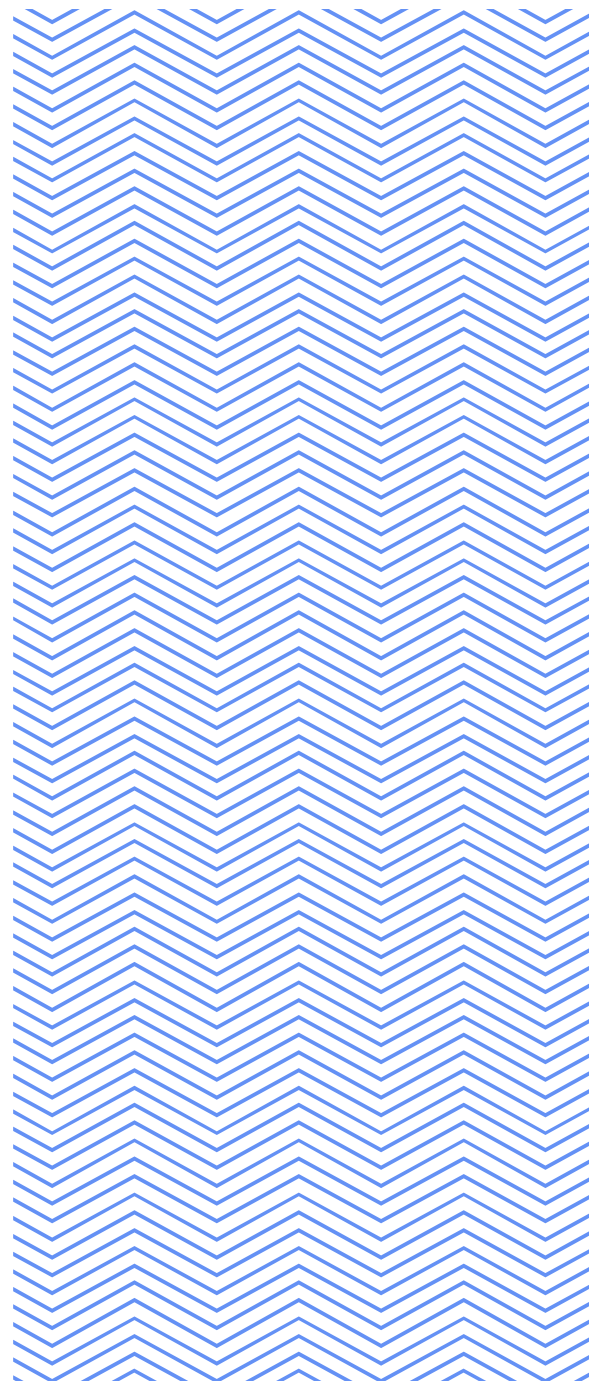
## Hakelämpölaitoksen vihkiäiset herkistivät isotkin miehet

4.9.2015 | 14:56 | Uutinen

Hervannan hakelämpöpökeskus vihittiin tänään käyttöön juhlapuheiden, räppibiisin ja rastiradan merkeissä.



### 3. Potential for LNG supplies to Finland





**LNG – CLEAN ENERGY SOLUTION  
NOW AND IN THE FUTURE**



**INDUSTRIAL USE**



# ROAD TRANSPORTATION



**MARITIME TRANSPORT**



## 2020'S MARKET IS EXPECTED TO GROW OUTSIDE TRANSMISSION GRID

### Maritime transport

The Baltic Sea Sulphur Directive (2015) will increase the number of LNG-propelled vessels.

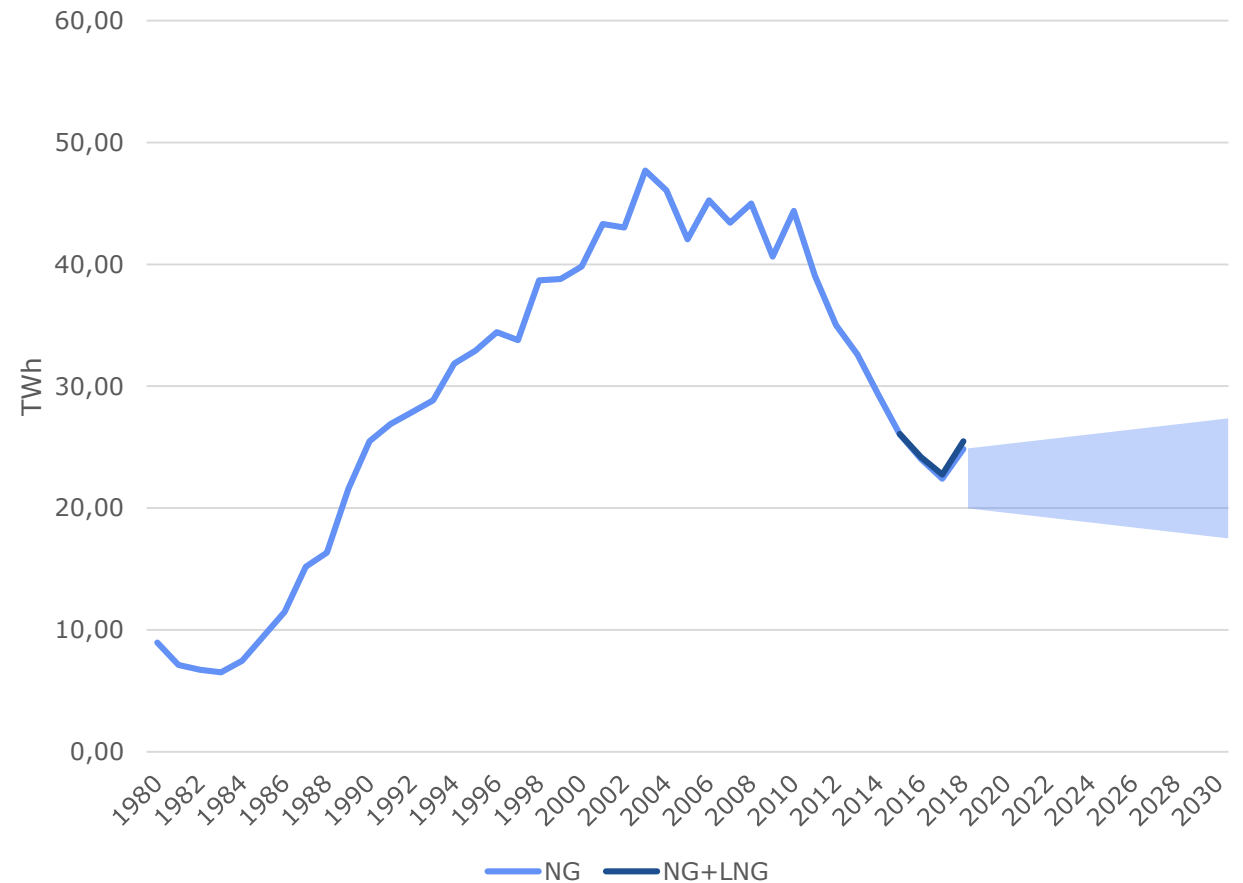
### Industrial use

LNG will replace oil and liquid petroleum gas in industrial use.

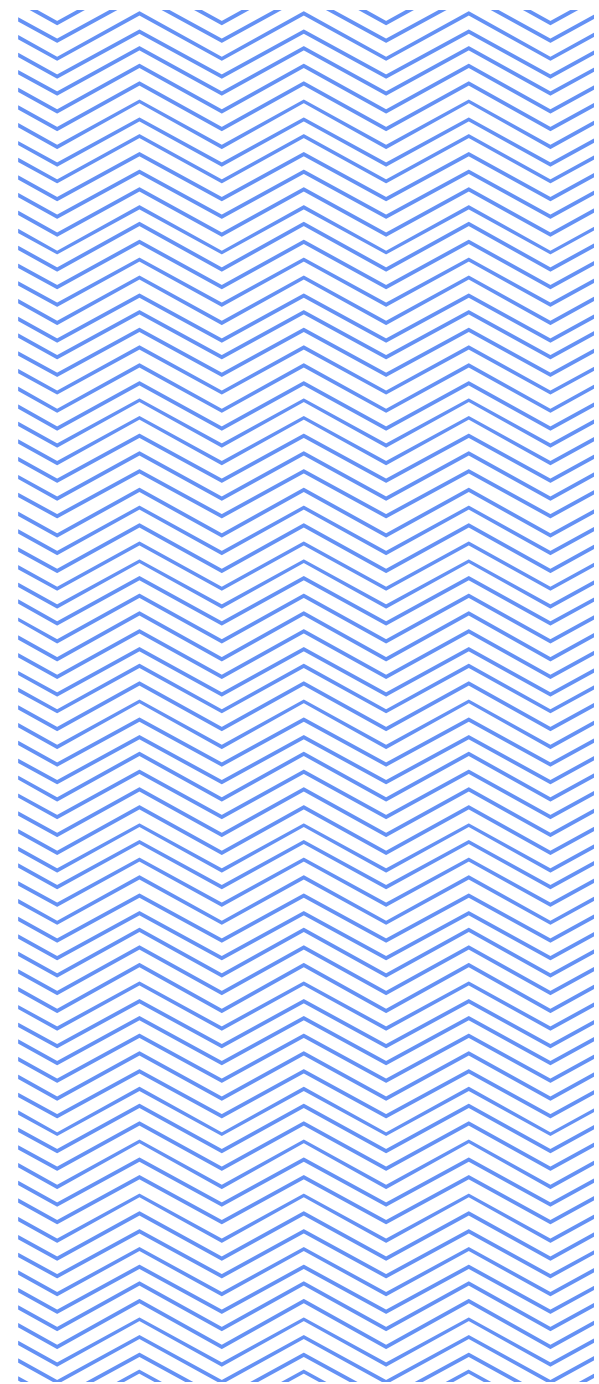
### Road transport

LNG in heavy road transport and as compressed natural gas (CNG) in passenger transport.

Natural Gas Consumption in Finland 1980-2018, & Outlook 2030 (Gasum)



## 4. Prospects for co-operation regarding the EU strategic infrastructure

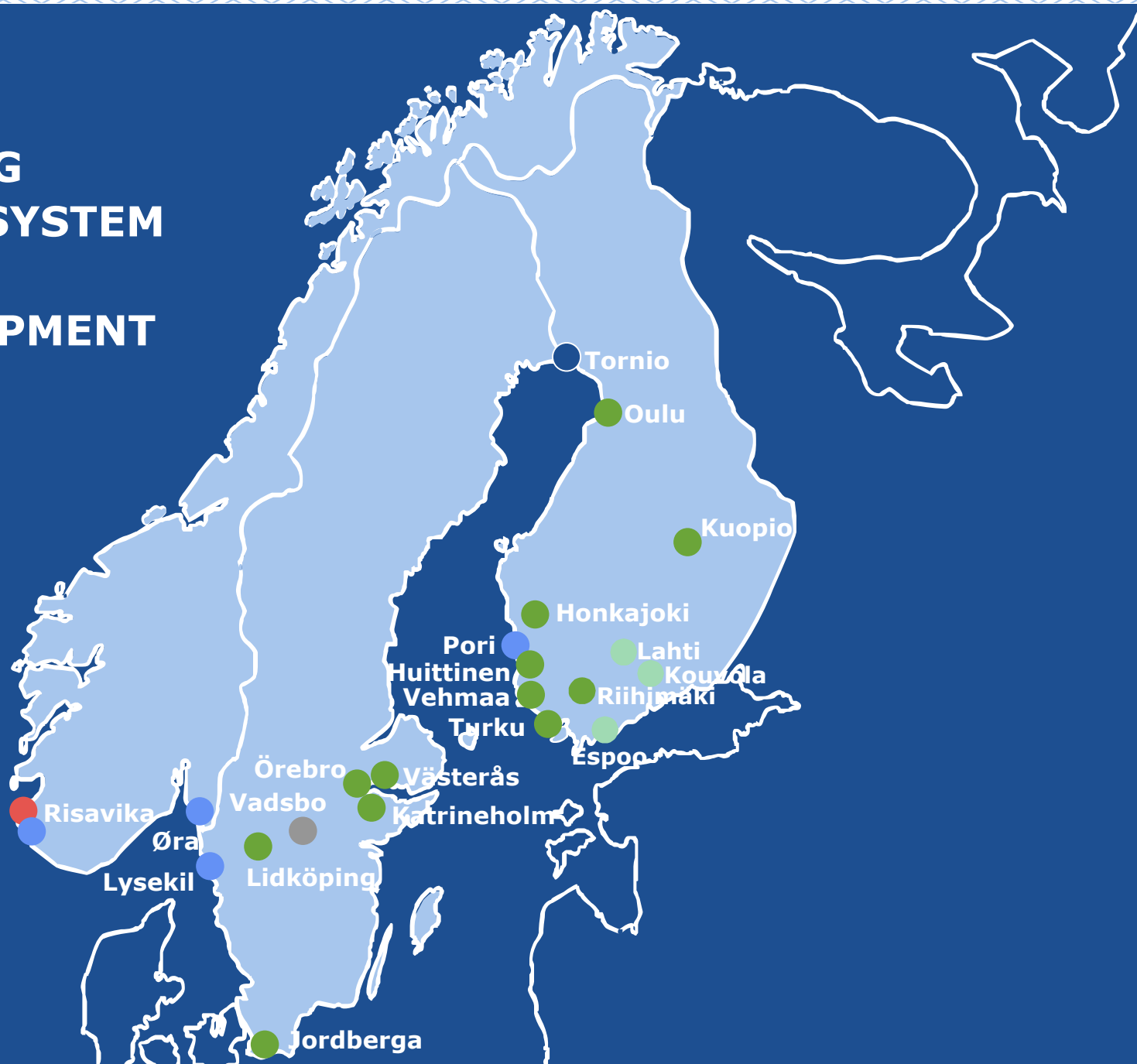


# NEW FINNISH GAS TSO FOCUS ON TRANSMISSION NETWORK IN FINLAND AND ENABLING FUNCTIONING GAS MARKET (FIN-BALTICS)



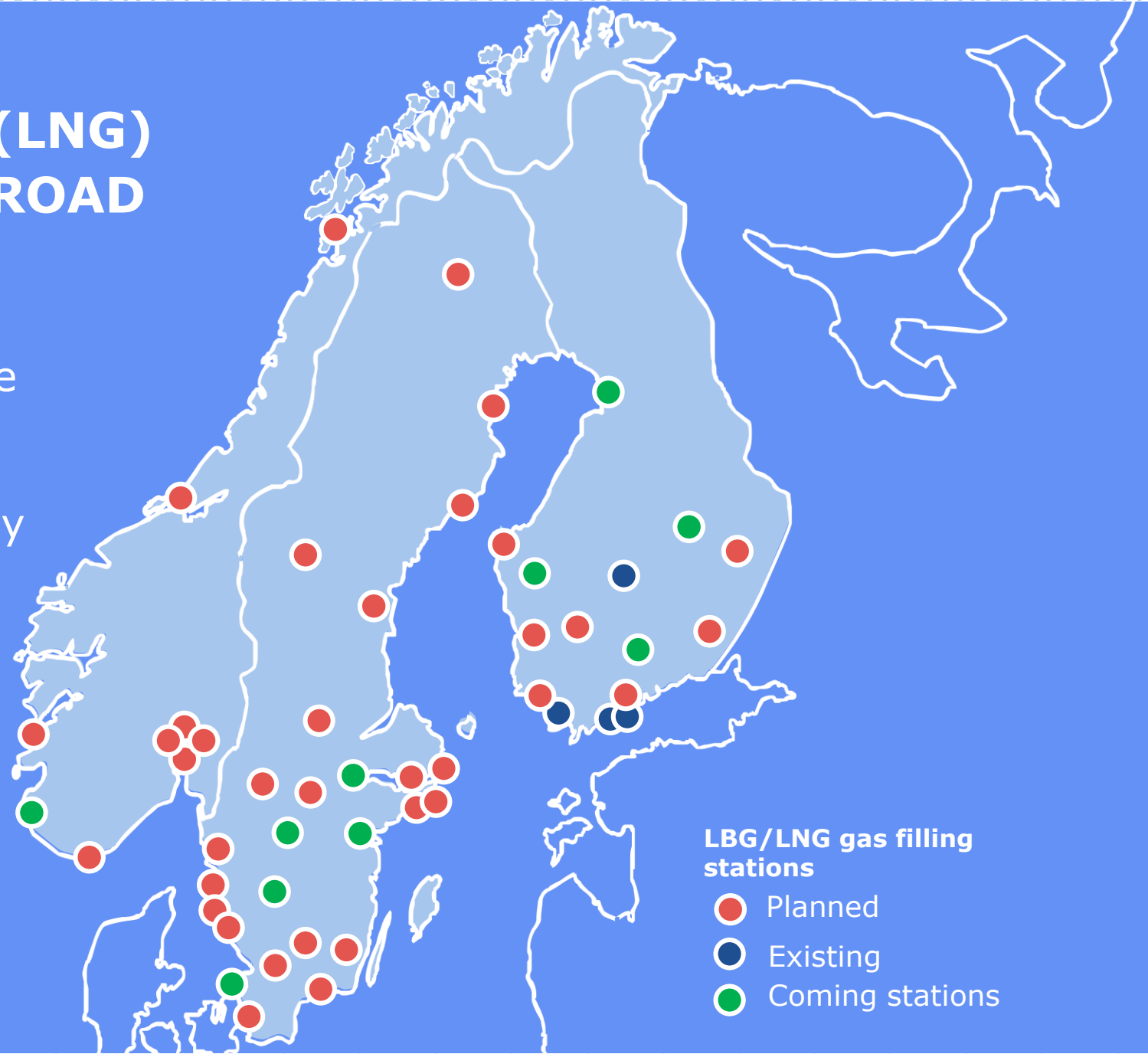
# GASUM IS DEVELOPING THE NORDIC GAS ECOSYSTEM AND PROMOTING SUSTAINABLE DEVELOPMENT

- LNG production plant
- LNG terminal
- LNG terminal (joint project)
- Gasum, biogas
- Gasum, biowaste and biogas
- Biogas production plant (joint project)



# GASUM'S HEAVY-DUTY (LNG) GAS FILLING STATION ROAD MAP

- Gasum's Market Entry phase includes around 50 new LNG/LBG filling stations in Finland, Sweden and Norway during 2018-2020





**THANK YOU!**

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