



Neste Engineering Solutions

Our offering for the gas industry

Petteri Nuolivirta, Kyösti Soini

NESTE



Neste Engineering Solutions

Our company-in its different forms-has over 60 years of experience in technology development, engineering and execution of industrial investment projects as well as maintenance and performance improvements in Europe, North and South America, Asia and the Middle East.

In September 2017 it was announced that Neste Corporation has acquired Jacobs Engineering's 40% shareholding in Neste Jacobs Oy.

As of January 1st 2018, our company name is Neste Engineering Solutions Oy.

Our Customer segments



Biopharma



Food Industry



Biochemicals



Bioproducts



Oil Refining



Petrochemicals



Gas
Natural Gas - Biogas - LNG



Industrial
Infrastructure

Our offering for the Gas Industry

- Project development services
 - Conceptual studies
 - Pre-studies and feasibility studies
 - Strategic/market studies
- Project design and execution services
 - Engineering (e.g. FEED), civil, mechanical
 - Environmental impact studies and permits
 - Site management and supervision
 - Procurement and delivery supervision
 - Project management
- Owners' Team services
- Regulation compilation Support Services
 - Commercial Regulations and Technical Rules for gas terminals
- Technical due diligence (e.g. in merger and acquisition situations)
- Training services
- Logistics and Supply Chain optimization services

Broad service portfolio for the Gas Industry

- We have been involved in the natural gas industry since 1974. We have designed and built natural gas networks, LNG import terminals and LNG liquefaction plants as well as biogas plants.
- We have been the EPCM contractor for Finland's 1st LNG terminal in Pori and we are Owner's Engineer for the Manga terminal project in N.Finland
- We have participated in large international projects e.g. GO4LNG project in Sweden (2013-2015).
 - NES provided consulting services for Swedegas LNG investment in the port of Gothenburg.
- NES is currently involved in other, smaller LNG projects in Sweden.
 - Example: Technical design for Permit application for the SSAB Oxelösund LNG terminal
- We have the capability to develop concepts and deliver studies as well as design and execute small, mid- and large scale projects.
- In addition to engineering and project services, we provide financial and technical due diligence services for our customers e.g. in merger and acquisition situations.

References

Skangas



Gasum



SWEDEGAS

Standard Life
Investments

NESTE

A close-up photograph of a green leaf, showing the detailed network of veins. The veins are light green and form a complex, interconnected pattern against the darker green background of the leaf. The lighting is soft, highlighting the texture and structure of the leaf's surface.

REFERENCES

The investigation of the potential of small-scale LNG in the Port of Turku

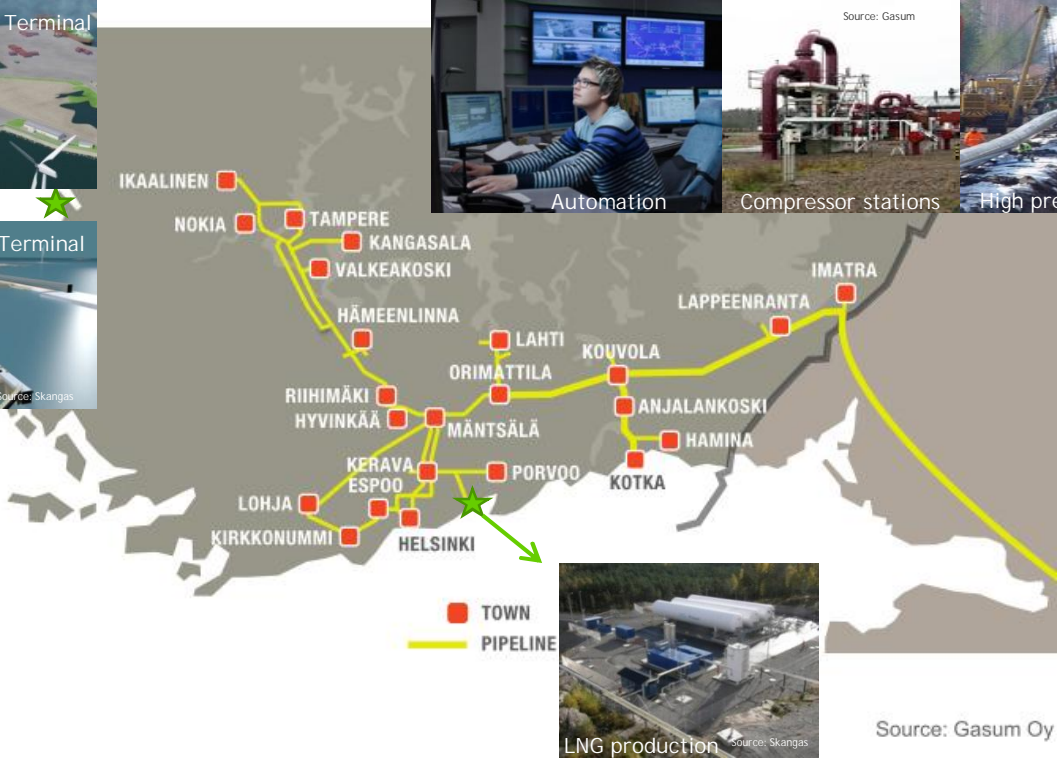
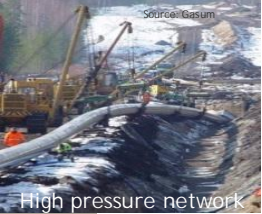
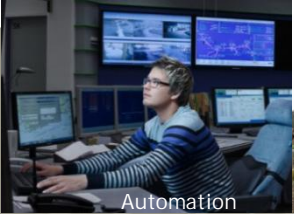
- In 2016 we investigated the potential and possibilities of LNG in Turku region together with the Port of Turku
- The LNG terminal would serve both maritime traffic and public transport, and the local industry needs
- Ø We were awarded this project in recognition of our long experience and in-depth understanding of LNG technologies and handling of natural gas.
- Ø Our extensive process industry knowledge was utilized in the Turku region in order to estimate the demand for gas by different industries

PORT OF TURKU
FINLAND



Source: Gasum

We have designed and assisted in the construction of Finland's gas infrastructure



We are currently working on the Baltic Connector project.

We have designed and assisted in the construction of Finland's gas infrastructure

Gas pipeline projects

- High-pressure pipeline 1230 km
- Compressor stations-Units: 3 (9)
- Reduction Station-Units: 140
- Valve Stations-Units: 170
- PNG Gas filling stations
- Small-size LNG liquefaction plant

Services offered:

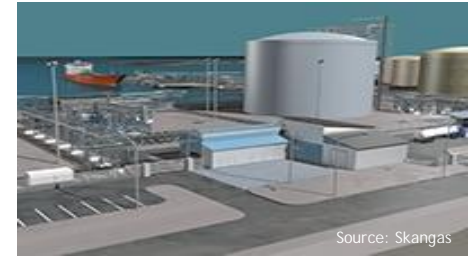
- Project management
- Engineering, civil, mechanical, AI&E
- Environmental impact studies and permits
- Site management and supervision
- Procurement and delivery supervision
 - Purchase of land, contractors and materials
- Project management services
 - Cost estimates and time schedules
 - Cost follow-up and reporting



Examples of LNG terminal projects

Pori LNG Terminal

- Skangas, Pori, Finland
- Our scope: Studies, Basic engineering, EPCM
- Storage tank: 30 000 m³, Ship unloading/loading, Truck loading, Send-out to local consumers
- Duration: 2014-2016



Gasum "West Finland LNG Terminal"

- Turku, Finland
- Our scope: Studies, Basic engineering (FEED)
- Storage tank: 30 000 m³, Ship unloading/loading, Truck loading, Send-out to local consumers
- Duration: 2013-2014

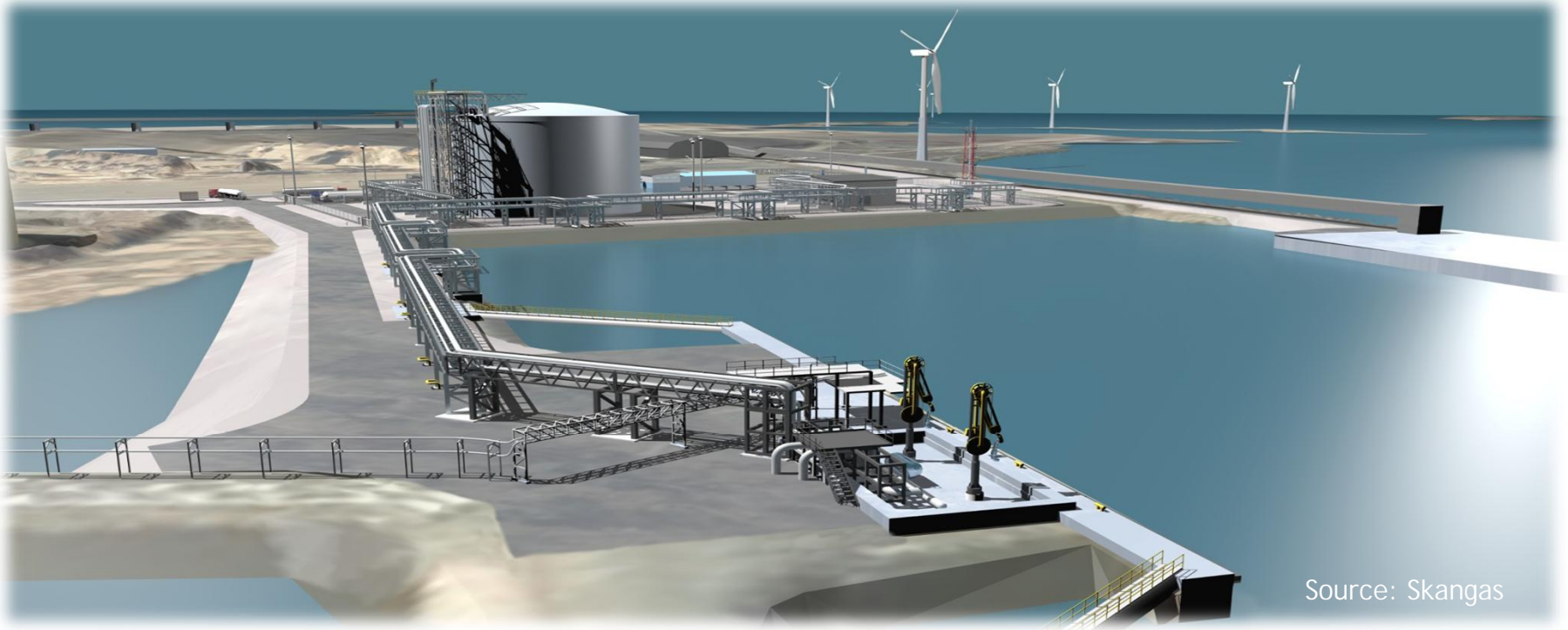


Manga LNG

- Tornio, Finland
- Our scope: Pre-study, FEED, Owners team
- Storage tank: 50 000 m³, Ship unloading/loading, Truck loading, Send-out to local consumers
- Duration: 2012-2017



Skangas Pori LNG Terminal (30 000 m³) Our scope: preFEED, FEED, EPCM (2014-2016)



Source: Skangas

Manga LNG Terminal (50 000 m³) in Tornio, Finland

Our scope: Study, Basic Engineering, Owners Team (2015-2018)



Source: Wärtsilä

Examples of LNG projects

Norilsk Nickel Harjavalta Oy LNG Station

- West Finland
- Our scope: Basic Engineering, EPCM
- 300 m³ Pressurized storage, Truck unloading, Evaporation, Send-out to local consumption
- Duration: 2014-2015

Wärtsilä LNG storage for motor testing

- Sweden & Finland
- Our scope: Studies, Basic engineering, Detailed Engineering
- Pressurized storage, Evaporation Truck unloading, Send-out to test facilities
- Since 1993

Neste Oil LNG import terminal

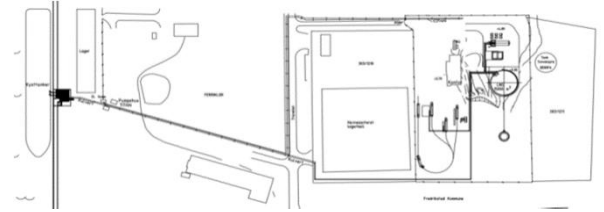
- Naantali, Finland
- Our scope: Studies, Basic engineering
- Storage tank: 20 000 m³, Ship unloading/loading, Truck loading, Send-out to local consumers
- Duration: 2012-



Examples of LNG studies

AGA - Cryo AB

- Fredrikstad, Norway
- Our scope: Extended FEED
- Atm. Storage tank, Ship unloading/loading, Truck loading, Send-out to local consumers
- Duration: 2008-2011



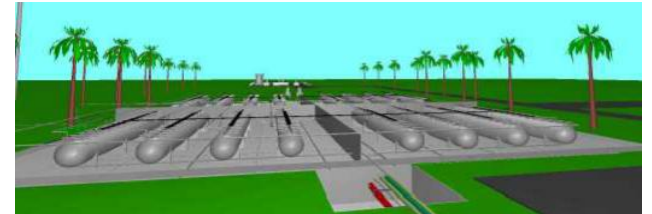
Gothenburg LNG Terminal

- Göteborg, Sweden
- Our scope: Conceptual Study
- Atm. Storage tank, Ship unloading/loading, Truck loading, Send-out to local consumers
- Duration: 2013



Wärtsilä Finland

- Caribbean
- Our scope: Conceptual Study
- Pressurized storage, Ship, Send-out to Power plant
- Duration: 2010-2011



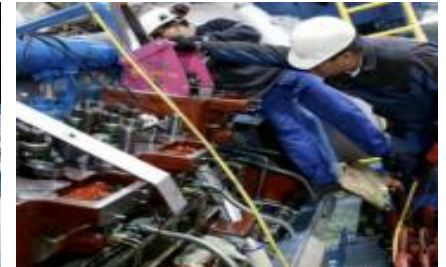
Examples of LNG liquefaction projects

Porvoo LNG Production Facility

- Project period: 2005-2007 and 2009-2010
- Small scale LNG production in Porvoo
- Capacity 20 000 t/a
 - Semitrailers for distribution
 - Industrial clients and backup for biogas plants and gas grid

Services offered

- Basic engineering, EPCM
 - Project Management & Engineering
 - Site management and supervision
 - Procurement and delivery supervision
 - Project management services
 - cost estimates and time schedules
 - cost follow-up and reporting



Neste Engineering Solutions selected Technology References, Commercial plants



NESTE
The only way is forward