

# Why do businesses choose natural gas?

Natural gas in the low emission society

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# Some topics

- Barents NaturGass and group
- Energy trends
- How does it work?
- Combined with biogas
- Public regulations

# Barents NaturGass

14 years of experience

- Office in Hammerfest, Norway, close to Europe`s largest LNG production plant
- Leading LNG distributor in Northern Scandinavia
- Own and operate 3 bunker stations for ships and 9 stations for industrial use, in addition deliveries to customer operated stations
- Customers include factories, mining, ferries, tugs, PSVs, Coast guard, container ships etc
- Deliveries in Norway, Sweden and Finland
- Experienced team of in total 25-30 people
- Certified ISO 9001:2015, 14001:2015, Achilles

# The Broadview Group

Consolidated turnover ~500 million EUR



BROADVIEW  
ENERGY SOLUTIONS

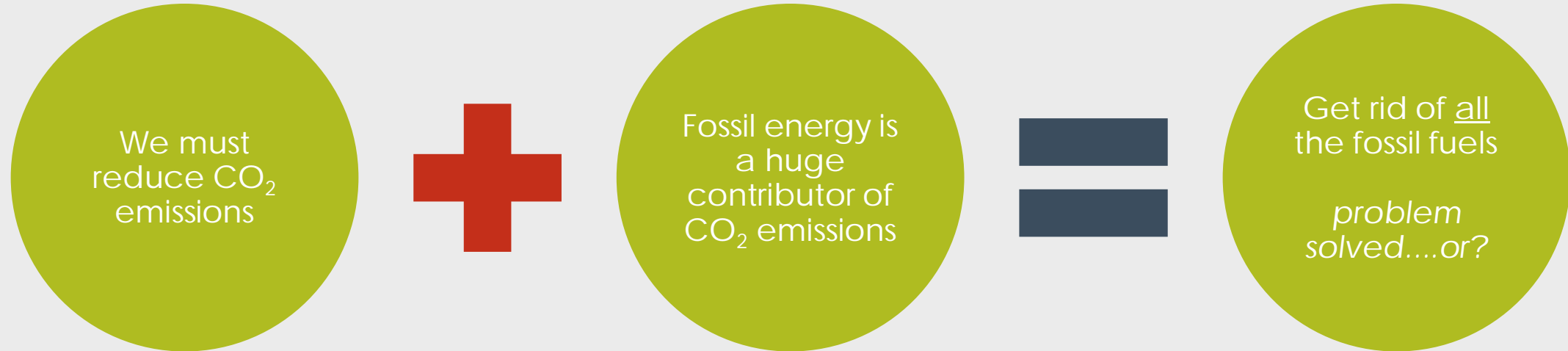
BROADVIEW  
CRYOGENIC CONTAINER SOLUTIONS

# The Paris agreement 2015

- Avoid more than 2 (1,5) degrees temperature increase in year 2100
  - All nations signed
  - Change in policies needed



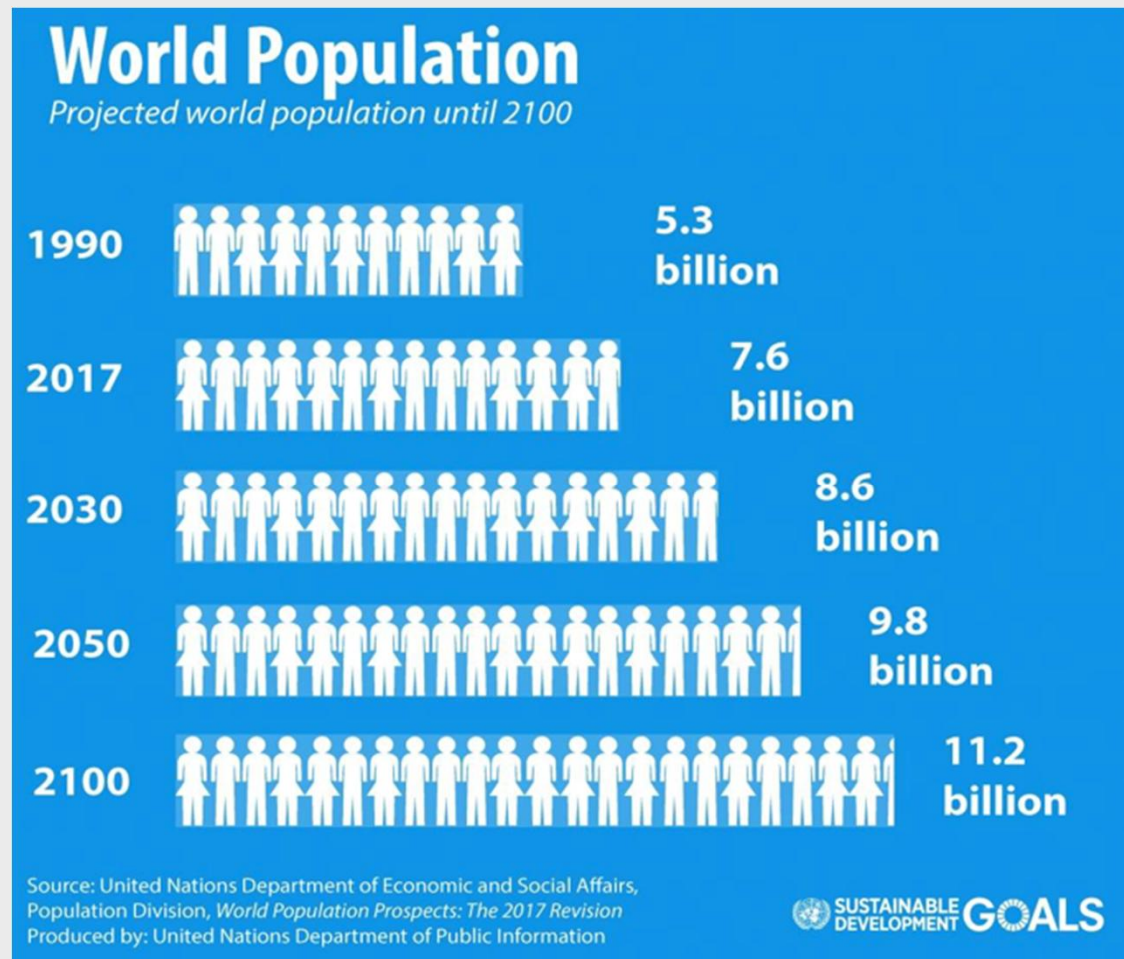
## The main focus now





*“Population will  
increase more than  
50%”*

United Nations



# Today's energy mix

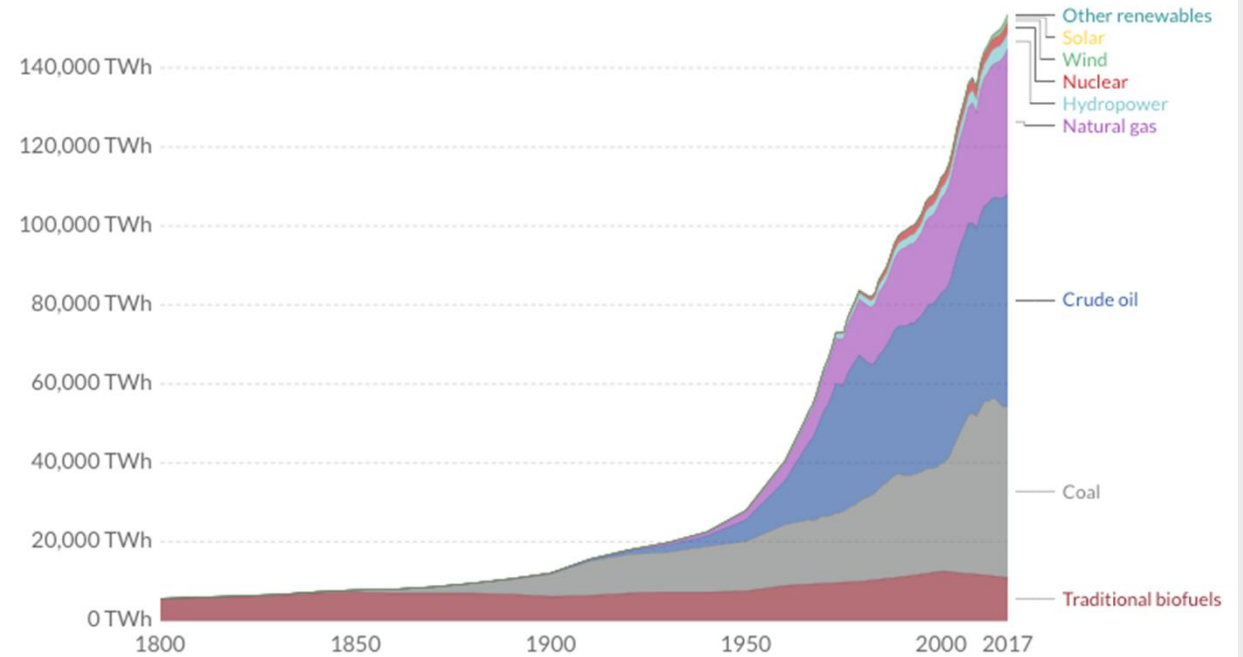
- Coal 1/3
- Crude oil 1/3
- Natural Gas 1/4

Remember:  
CO<sub>2</sub> emissions  
from coal is  
twice as high as  
natural gas

## Global primary energy consumption

Global primary energy consumption, measured in terawatt-hours (TWh) per year. Here 'other renewables' are renewable technologies not including solar, wind, hydropower and traditional biofuels.

Our World  
in Data



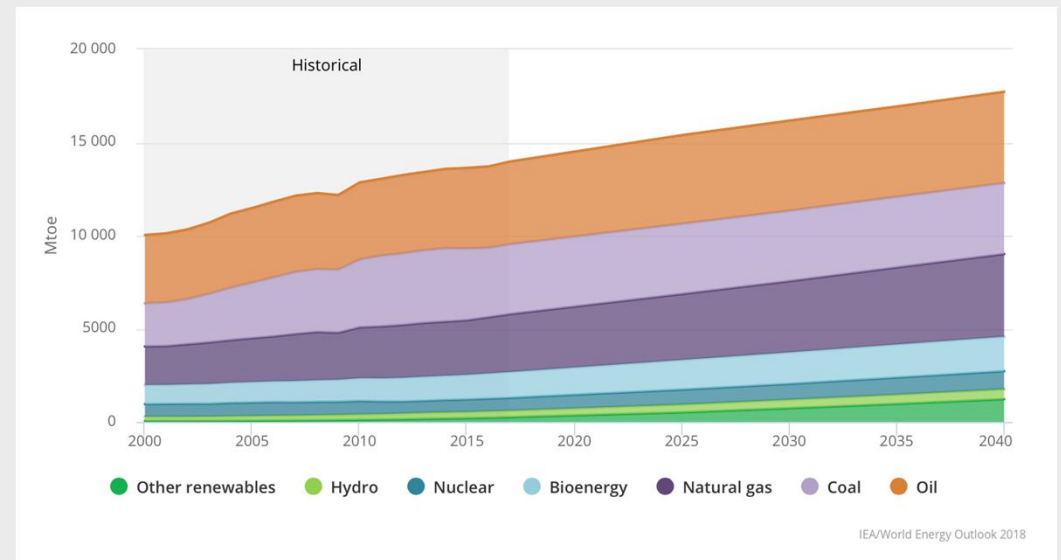
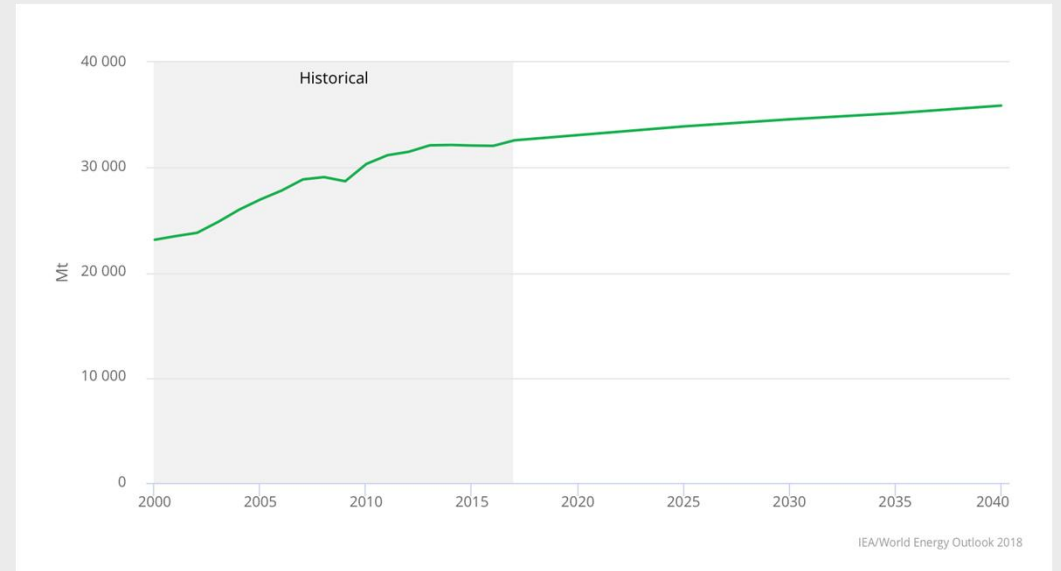
Source: Vaclav Smil (2017) and BP Statistical Review of World Energy

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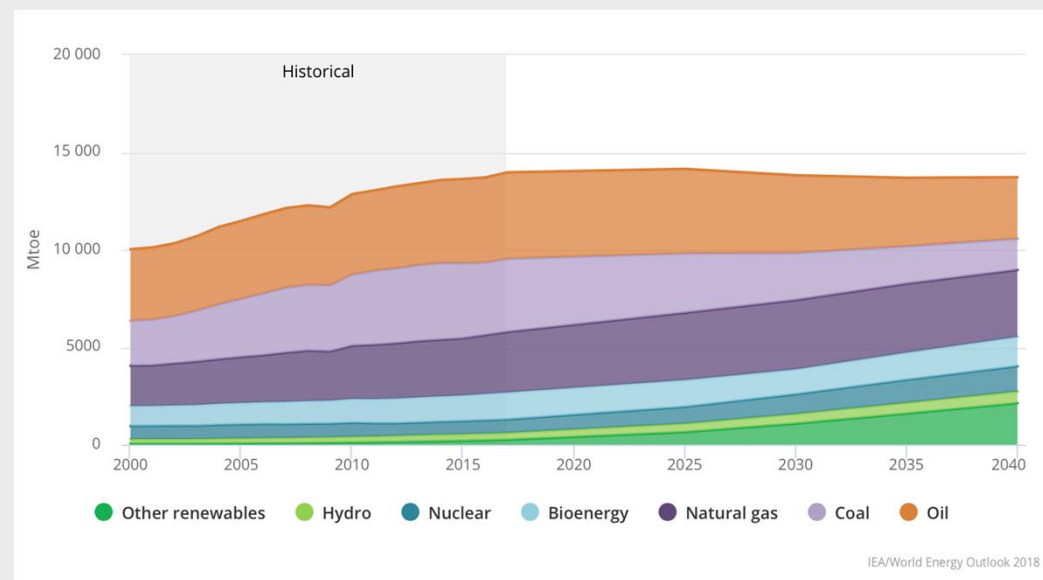
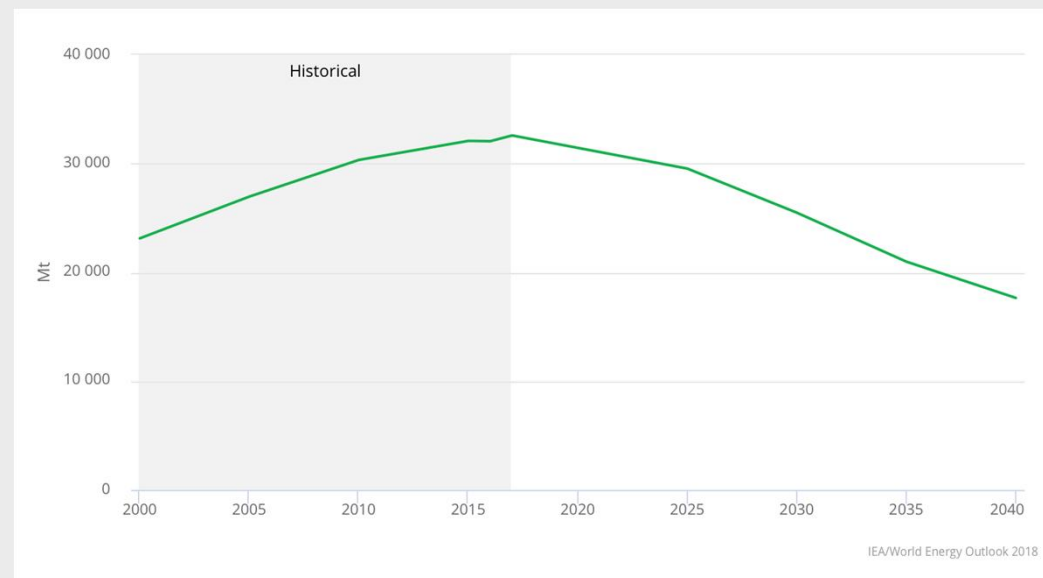
# IEA analyzes: Current policies

- Increase in total energy demand
- Increase in CO<sub>2</sub> emissions
- Limited growth in oil and coal, larger growth for natural gas and significant growth for renewables



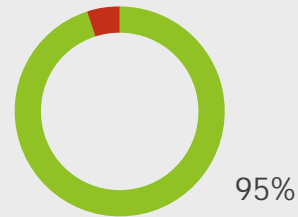
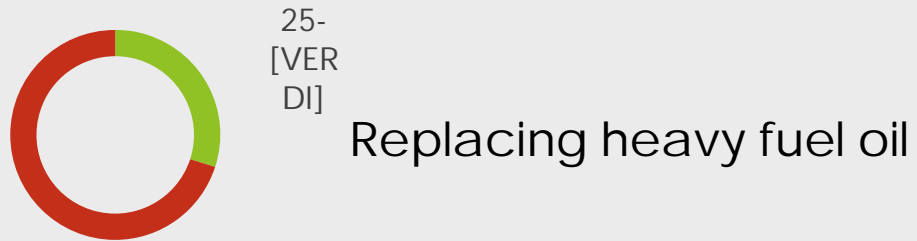
# IEA analyzes: Sustainable policies

- Significantly reduced CO<sub>2</sub> emissions
  - Reduced energy consumption
  - Large reduction in coal consumption
  - Reduction in oil consumption
- 
- Renewables and bio increase significantly
  - Natural gas increase



# Natural gas: lower CO<sub>2</sub> and (nearly) no local emissions

CO<sub>2</sub> reduction



75-95% reduction in NO<sub>x</sub>



Sulphur eliminated

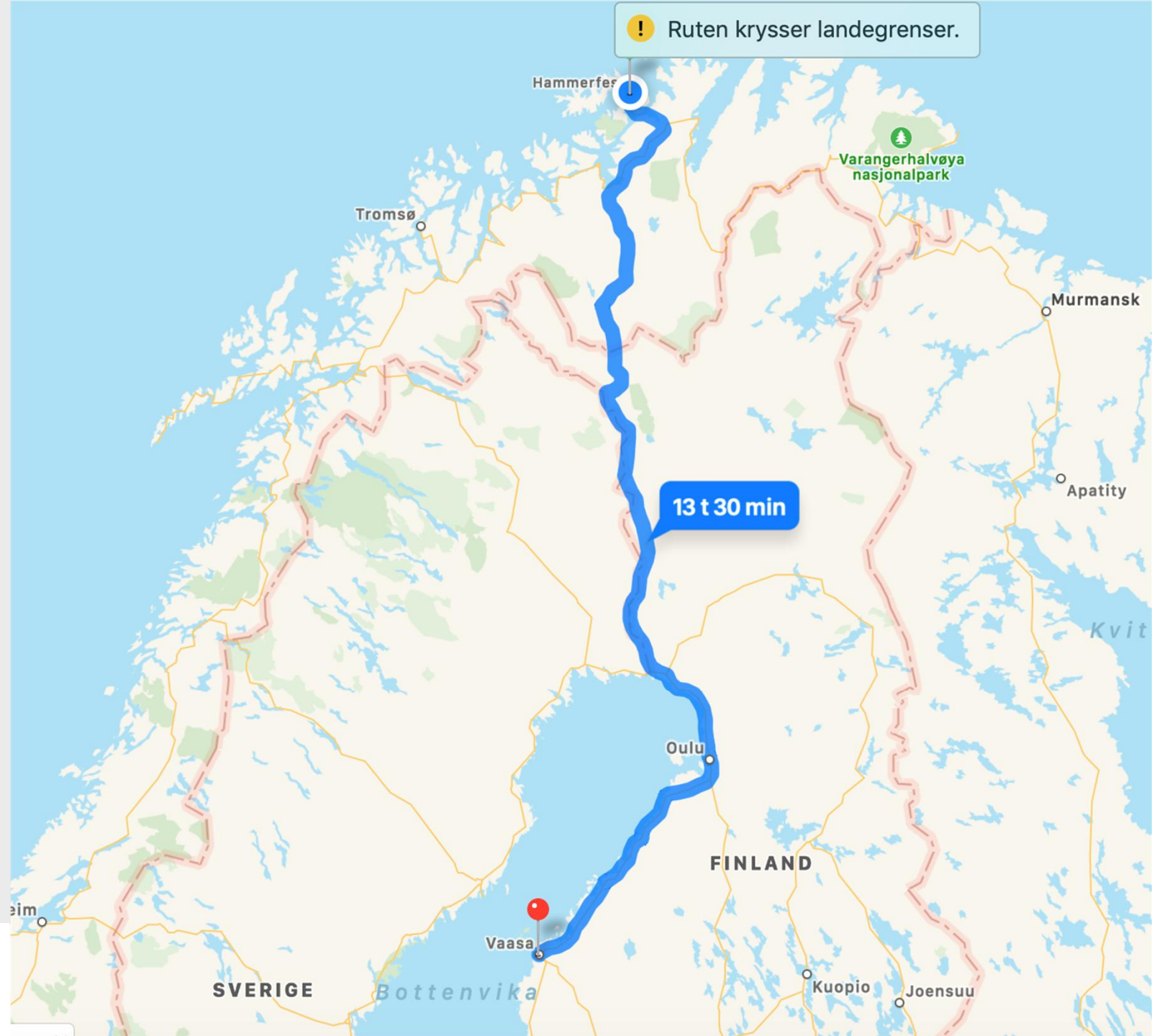


Particles eliminated

# Efficient logistics

- Close to the LNG production plant
- Load and drive directly to customer
- No extra loadings and unloadings
- No extra terminals
- 1000 km and 13 hours is close compared to other energy transports!

## Cost effective logistics



# Natural gas for industries and mining

- Thermos for LNG storage – no energy needed
- Vaporizers for regassification
- Pipeline in the ground to customer
- Monitoring
- Size and logistics depending on consumption



# Natural gas/LNG for ships

- Dry-break couplings
- Quick bunkering, pump capacity, 60-90 tonnes per hour
- BNG makes more than 500 bunkerings per year





We are proud to have bunkered approx. 25-30% of the worlds fleet of LNG ships on spot or regular deliveries.

Our experience with different vessels and ports combined with our safety focus ensure our customers a secure delivery.

This is a selection of the ships.

Viking Princess



KvitBjørn



Kvitnos



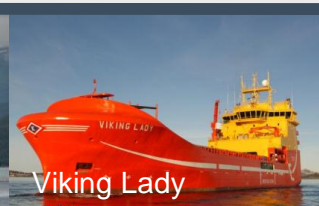
Olympic Energy



Viking Energy



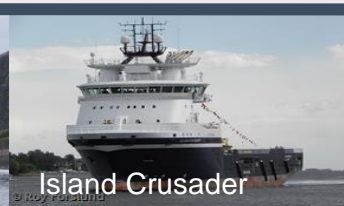
Hoydal



Viking Lady



Vaeroy



Island Crusader



Olympic Energy



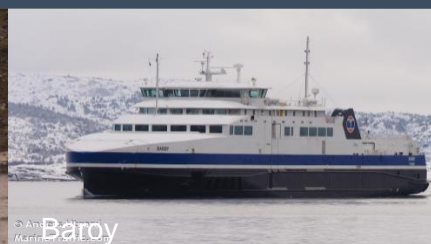
Lørdingen



Audax & Dux & Pax



Hasvik



Barøy



Stril Barents



Thun Venem

# Biogas and natural gas

- Natural gas – methane – CH<sub>4</sub>
  - Fossil
- Biogas – methane – CH<sub>4</sub>
  - Renewable

Similar characteristics – similar infrastructure  
– can mix

*Natural gas as backup helps developing biogas*





# All energies to be handled with care



- Regular live training with fire brigade
- Training of drivers, bunkering personel, customers, Equinor and other
- Close cooperation with fire brigades in all areas of operation

# Public regulations and taxes

- and more to come

- IMO (International Shipping Organization):
  - Sulphur regulations
  - NOx regulations
  - Greenhouse (CO<sub>2</sub>) regulations
- General taxes/regulations:
  - CO<sub>2</sub>
  - NOx

Natural Gas is an easy solution

# Why do businesses choose natural gas?

- Low emissions – part of the future low emission solution
- Low taxes from limited emissions
- Easy to convert - today
- Combine with biogas
- Comply with IMO regulations
- Cost effective

Natural gas - an  
important part of  
the future low  
emission solution