



**NORWEGIAN MINISTRY OF TRADE,  
INDUSTRY AND FISHERIES**

*LNG – The Norwegian experience*

Director Gaute Sivertsen, Oct 2015

# ECA (Sulphur Emission Control Area)

- IMO regulations on sulphur emissions in SECA-areas - Baltic Sea and North Sea from 2015.
- Global restrictions on SO<sub>x</sub> emissions in 2020 and North Americas restrictions on NO<sub>x</sub> 2016

SO<sub>x</sub> – THE WORLD IN 2015



■ 0.1% Sulphur in 2015

# LNG as Environmentally friendly fuel



# Measures to promote LNG-fuelled vessels in Norway

- **NOx Fund**
  1. Effective incentive to reduce Nox-emissions
  2. Development of new emission reducing technologies
  3. Important contributor to Norway as the leader in LNG vessels





# Small scale distribution of LNG



- Covering the coast of Norway
  - LNG source - base load LNG or receiving terminals or small scale LNG production
  - LNG could be further distributed by truck or rail way or distributed by locale pipeline.



# Norwegian LNG Companies



## Terminals, Transport & Distribution

- Gasnor
- I.M Skaugen
- Golar LNG
- Höegh LNG
- Skangass
- BW Gas
- Gassco
- Torp LNG
- Knutsen OAS Shipping
- Skagerakk Naturgass

## Shipping Companies

- Buksør og Berging
- Höegh LNG
- I.M Skaugen
- Jahre LNG
- Golar

### Users

- Eidesvik
- Fjordline
- Fjord1

## Bunkering

- Skangass
- Wärtsilä / Hamworthy
- Gasnor
- Liquiline LNG
- Knutsen OAS Shipping

## Storage & Engines

- Aker Solutions
- Light Structures
- NLI
- Torgy LNG
- Wilhelmsen Maritime Service
- Aker Solutions
- Rolls Royce
- Wärtsilä/ Hamworthy

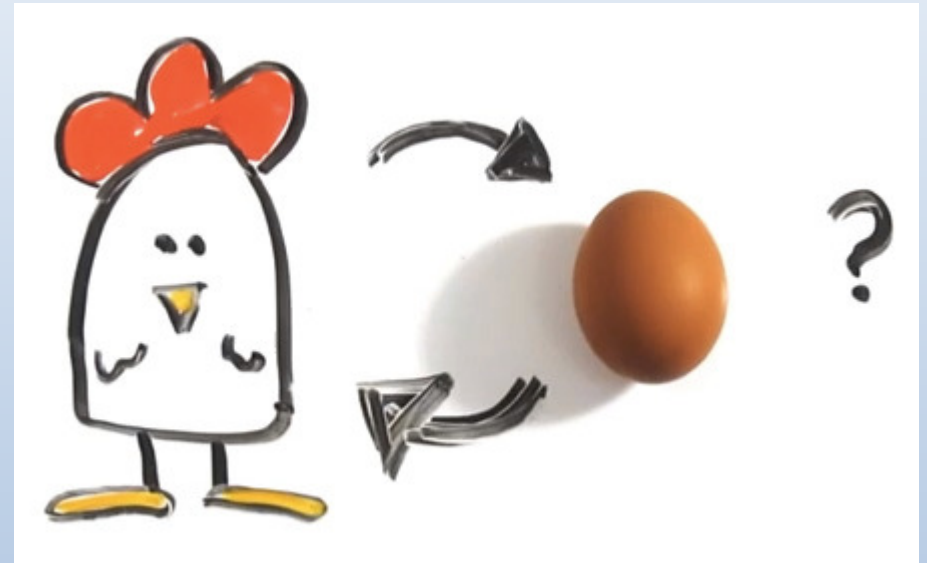
## Other LNG Stakeholders

- DNV GL
- SINTEF/Marintek
- Norwegian Maritime Exporters
- Eksportkreditt
- Innovation Norway
- GIEK
- Norwegian Maritime Administration

## Design & Engineering

- Fiskerstrand Verft
- LMG Marine
- Wärtsilä / Hamworthy
- Light Structure
- TTS Group
- Aker Solutions
- SINTEF/ Marintek
- Multiconsult
- Skipsteknikk AS
- Rolls Royce

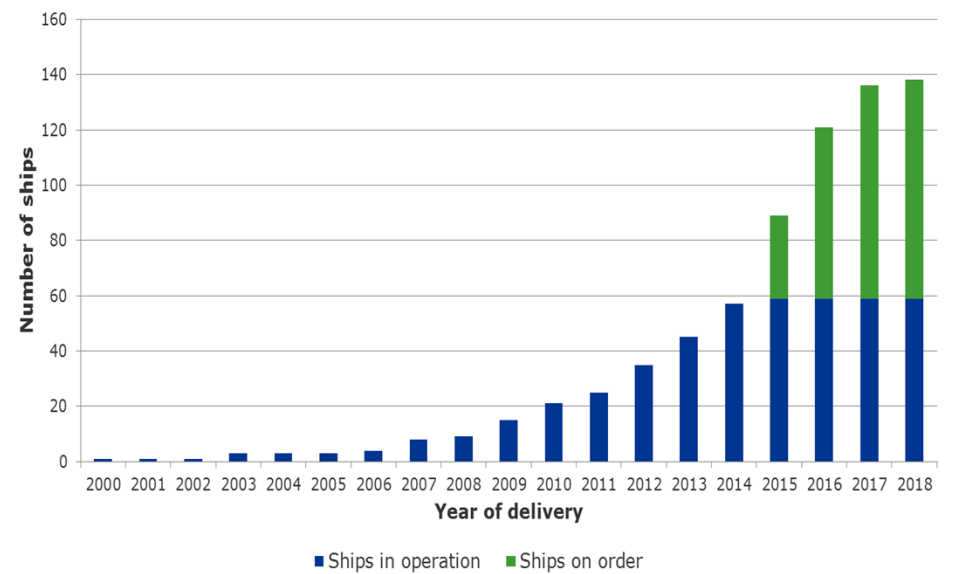
- Future developments
  - LNG infrastructure
  - Critical mass of LNG-ships
  - Global developments
- Challenges
  - The supply chain and availability of bunkering station in ports







Development of LNG fuelled fleet





# The World's longest journey by LNG at SEA



## Concluding remarks

- LNG fuelled ships will meet the known IMO emission requirements
- LNG is considered to be the main alternative fuel to fuel oils.
- Public-private-partnership has been one of the main drivers in establishing a critical mass of LNG as marine fuel
- Norway has demonstrated that small scale LNG production and distribution is competitive as fuel for ships
- LNG is available world wide and can be further distributed to a small scale market (industry, maritime)
- Technology solution for ships are available and under further development – Norway has developed a cluster of LNG technology providers
- Asia could be the new large market for Small Scale distribution and Use of LNG.

Thank you for your attention

