MARINE LNG FUEL SYSTEMS

LNG

TODAY'S FUEL FOR TOMORROW

Cryonorm Marine LNG Fuel Systems for inland and seagoing ships independent from engine suppliers

The use of liquefied natural gas (LNG) as a marine fuel has taken on added significance as a result of the IMO's stringent requirements concerning emissions from ships. With the current growing demand for LNG as fuel for propulsion more and more LNG Fuel Systems are needed.

The transition to LNG in the shipping industry is fully put in motion. Worldwide transport policy is focused to improve the efficiency and sustainability of transport. In order to achieve the new limits of emissions the shipping industry is looking for new, more sustainable fuels and technologies. LNG is considered one of the most economical and realistic solution as it it's the cleanest fossil fuel on earth., LNG as a fuel offers significant environmental advantages over well-known traditional fuels for ships. LNG powered ships readily comply with the highest emission standards.

The main advantages of using LNG as fuel are:

- Lowering emissions
- Reduction on fuel costs and ship operational costs
- Noise reduction
- Cleaner engine rooms

CRYONORM MARINE LNG FUEL SYSTEMS CONSIST OF:

- Marine Class Approved systems, built according current rules and regulations such as IMO IGC / IGF and applicable class requirements.
- Full engineering of the complete LNG Fuel System from process engineering up to the operating and maintenance manual
- Fabrication of the complete LNG Fuel System that consist of:
  bunker stations, LNG Fuel tank, Tank Connection Space, LNG Vaporization, Gas processing, water-glycol skid, control, monitoring and ESD Systems
- Supply of double walled LNG/NG piping to class requirements
- Installation supervision and commissioning of the LNG system onboard the ship.
- Assistance during first Gas trial, first cool-down, first fill of LNG
- Training, after sales services and spare parts
- Guaranteed gas flow, temperature and pressure towards ship engine(s) GVU

Cryonorm Marine LNG Fuel Systems are applicable for both seagoing and inland waterway, new-build or retrofit, 100% full natural gas propulsion or dual Fuel propulsion ships.

#1: ms. Argonon – Deen Shipping (40m³ LNG tank) - Caterpillar dual fuel engines

#2/3: ms.Green Rhine/ Greenstream - Interstream Barging (2x 40m³ LNG tank) – Scania gas generators

#4/5: Ms. Coral Sticho / Coral Star – Anthony Veder (2x 100m^3 tank)
Wärtsilä dual fuel engines

#6: ms. Eiger-Danser Containerline (60m³ LNG tank) - Wärtsilä dual fuel engines

#7: ms. Abel Matutes of Balearia (30m³ LNG) Natural gas supply for hotel mode Rolls Royce gas generator

#8/9: ms. Greenland / Ireland Erik Thun (140m³ LNG tank – vertical) - Wärtsilä dual fuel engines

#10: ms. Greenports 1 Bremen Port (2x7m³ LNG tank) -Scania gas generators

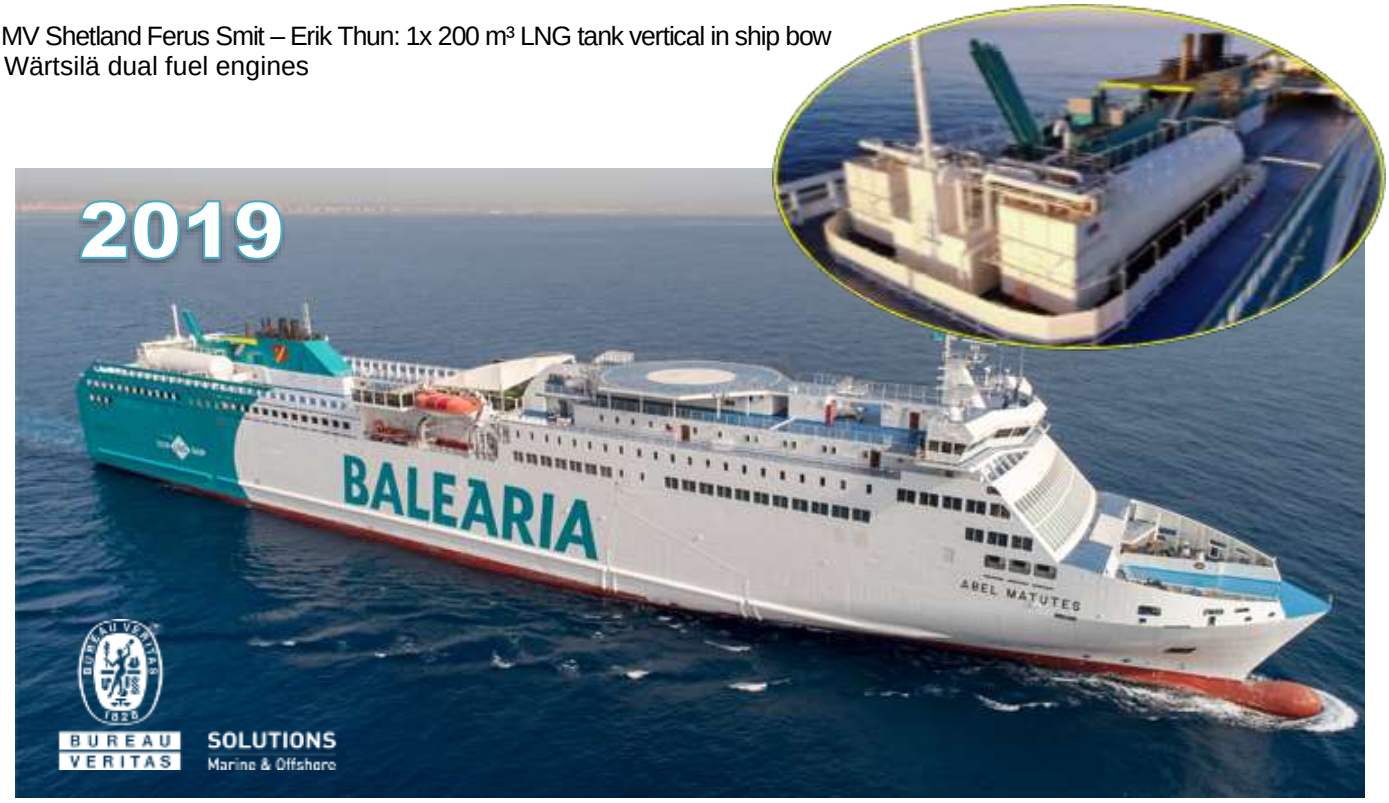
#11: ms. RPG Stuttgart (first of series of 15), Plouvier (60m³ LNG tank) - Wärtsilä dual fuel engines

#26: ms. Ecodelta, van der Kamp (325 m³ LNG tank) - ABC dual fuel engines

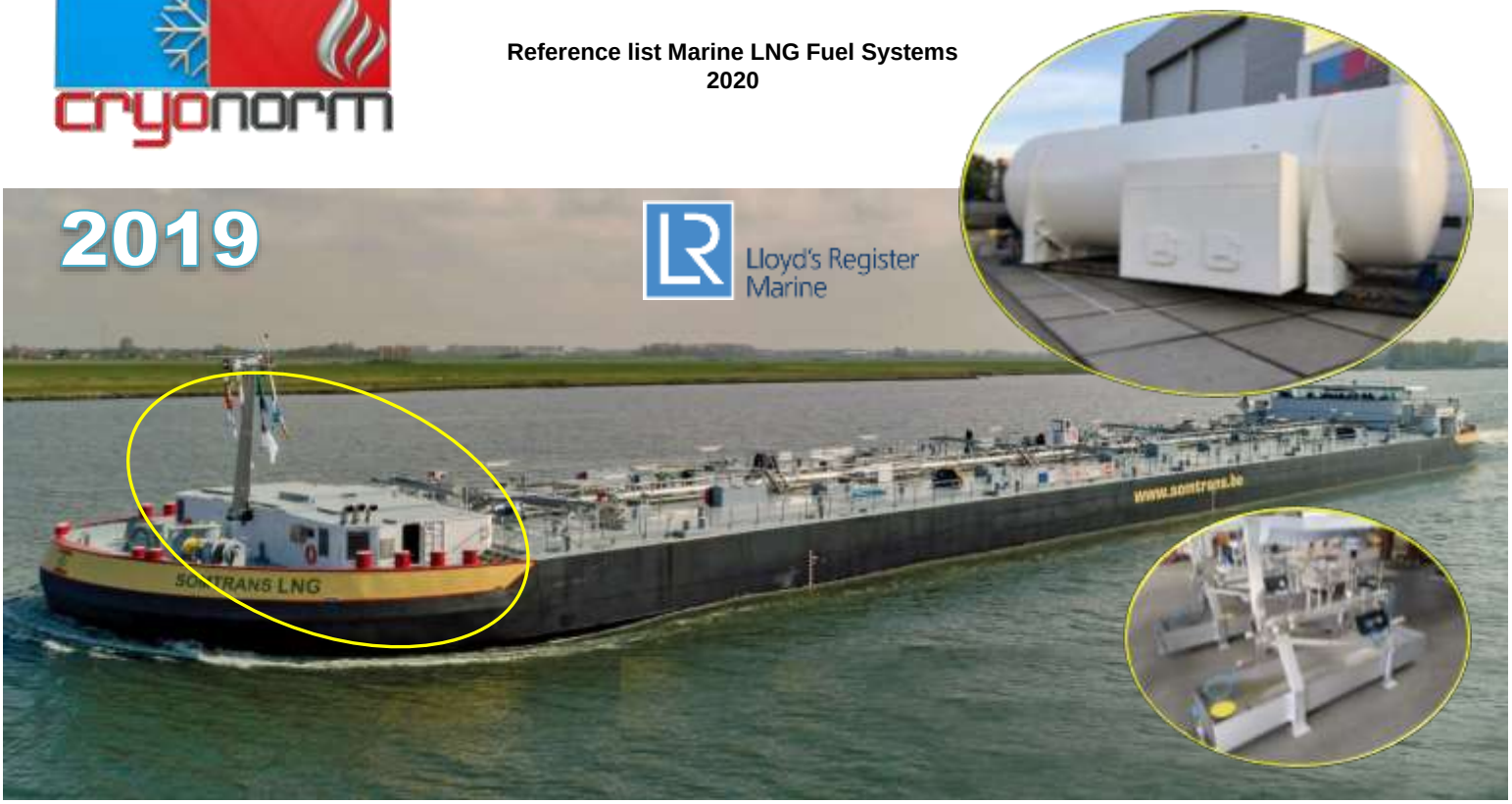
#28: ms. Werkendam, van Oord (38 m³ LNG tank)
MAN Rollo gas generators

#29: ms. Samuel de Champlain, Dragages Ports
(2x170 m³ LNG tank) – MAN dual fuel engines

#31: MV Shetland Ferus Smit – Erik Thun: 1x 200 m³ LNG tank vertical in ship bow
Wärtsilä dual fuel engines



#30: Upgrade the Abel Matutes to LNG Propulsion: 2x 178m³ LNG Fuel Tanks on deck 8
MAK dual fuel engines

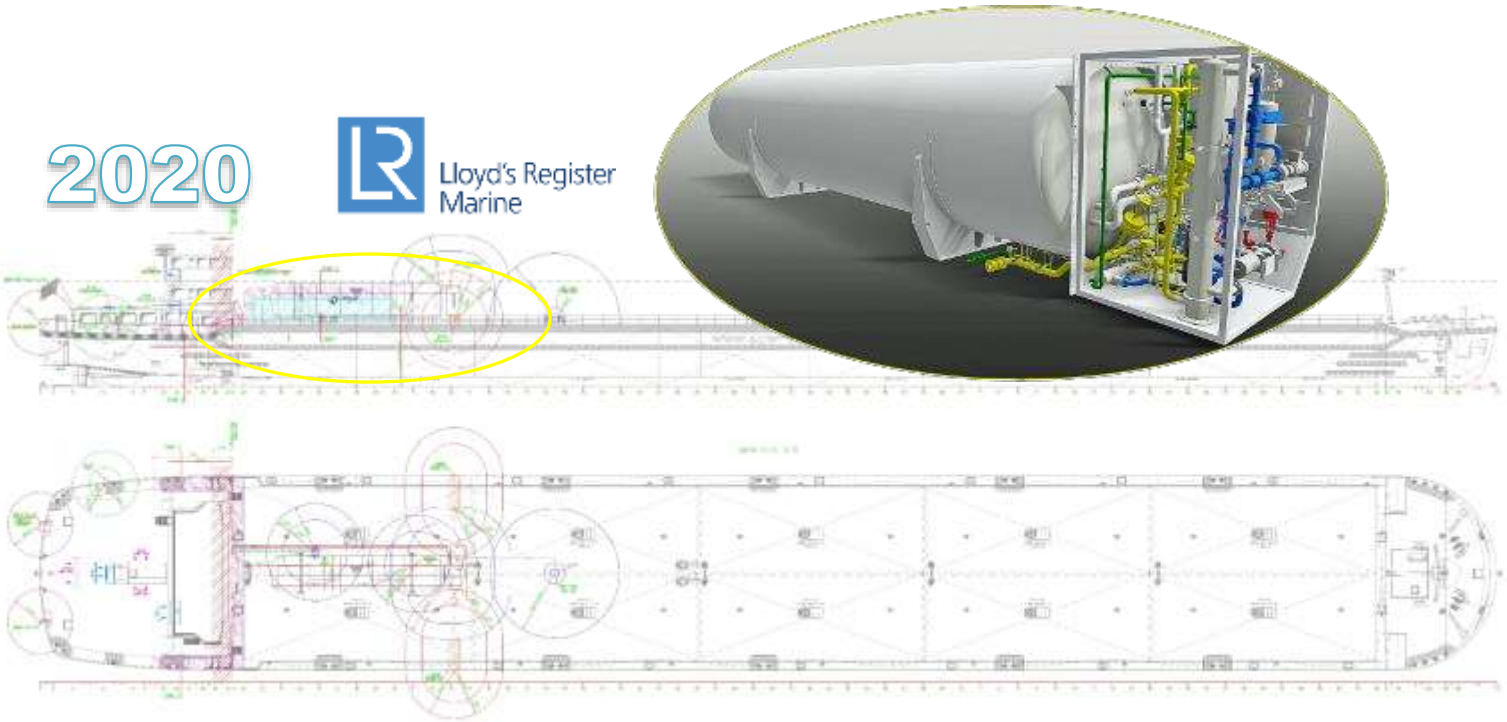


#32: Somtrans LNG: 1x 90 m³ LNG Fuel Tank in bow of vessel - Wärtsilä dual fuel engines

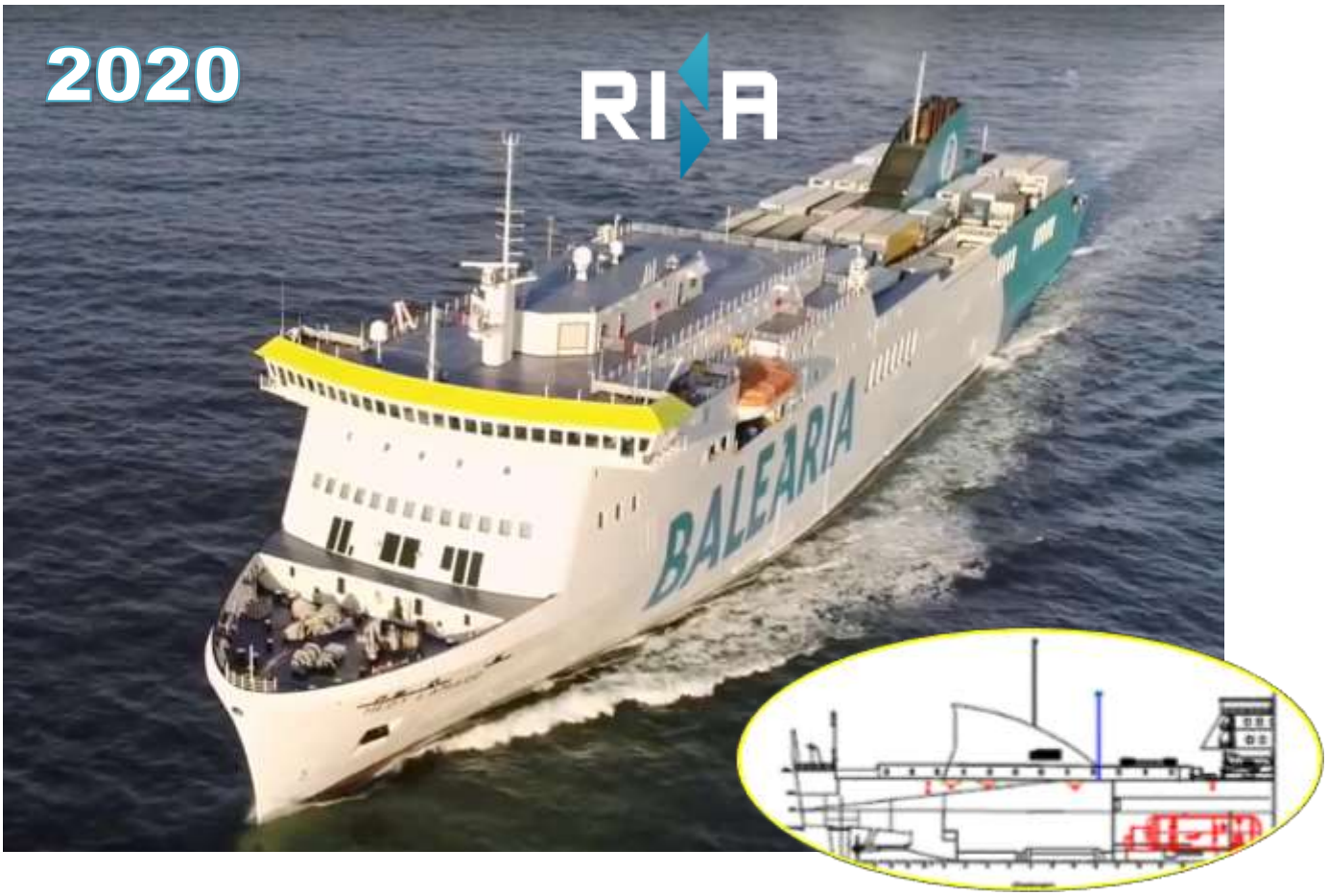
#33: Upgrade the Bahama Mama to LNG Propulsion: 2x vertical 140 m³ LNG Fuel Tanks on rear deck
MAN dual fuel engines

UNDER CONSTRUCTION

#34: Upgrade the Sicilia to LNG Propulsion: 1x horizontal 425 m³ LNG Fuel Tank below deck
MAK dual fuel engines



#35: Somtrans LNG: 1x 70 m³ LNG Fuel Tank on deck
Wärtsilä dual fuel engines



#36: Upgrade the Hedy Lamarr to LNG Propulsion: 1x horizontal 425 m³ LNG Fuel Tank below deck
MAN dual fuel engines

#37: Upgrade the Martin I Soler to LNG Propulsion: 1x horizontal 360 m³ LNG Fuel Tank below deck
MAK dual fuel engines

Notes:

SMALL SCALE LNG PLANTS & SYSTEMS

Marine fuel

LNG/L-CNG fueling

Liquefaction

Marine bunkering

Regas

cryonorm

CRYONORM SYSTEMS BV

WEB: WWW.CRYONORM.COM

MAIL: SALES@CRYONORM.COM