

Fiskerstrand Group

St. Petersburg, 19th of June 2014

CEO Rolf Fiskerstrand

Fiskerstrandens Slip & Motorverksted
Indehaver Peder Fiskerstrand pr Aalesund.

1909



Fiskerstrand Verft AS - rich on traditions

FISKERSTRAND VERFT AS



PART OF THE MØRE MARITIME CLUSTER



18 SHIP OWNERS

14 SHIP DESIGN COMPANIES

14 SHIP YARDS

172 EQUIPMENT SUPPLIERS

22 500 SKILLFUL EMPLOYEES

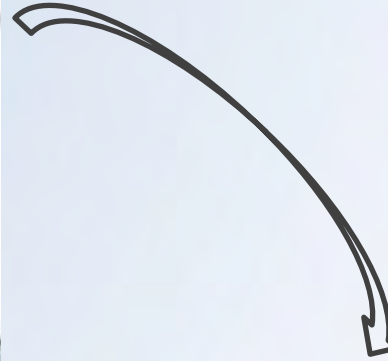
55 000 000 000 NOK TURNOVER IN 2013
(6.800 000 000 EURO)

**A world class maritime cluster-
advanced marine operations**

DESIGN AND SHIPBUILDING BASED ON LONG TRADITIONS



«The Kvalsund ship» year 690



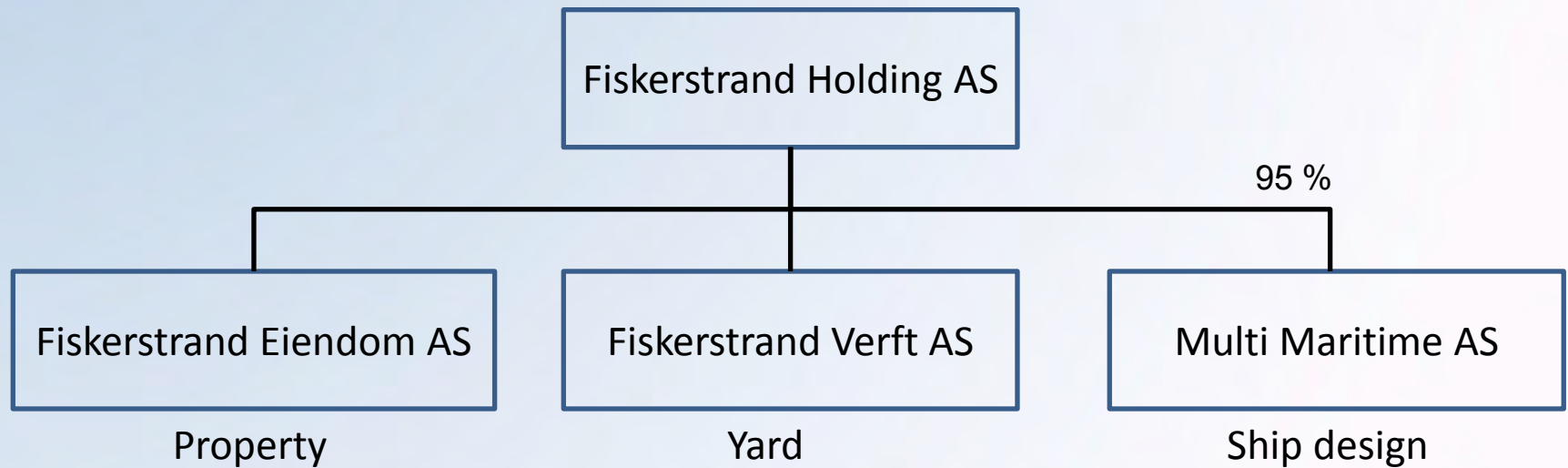
First X-Bow. «Bourbon Orca» year 2006

INNOVATIVE INTERPLAY IN PRACTICE

Ship-owners
Ship yards



Design
Equipment suppliers



We cover:

- Docking
- Repair
- Conversion
- Concept development / R & D
- Ship design
- Newbuilding

SHIPBUILDING TRAD

- Primary segment:
 - Small to medium sized car and passenger vessels
Geography: Europe – specific projects worldwide
- Secondary segments:
 - Specialized vessels
 - Geography: Worldwide
 - Fishing vessels
 - Geography : Worldwide

RENEWABLE ENERGY – OFFSHORE WIND PARKS

- Supply- / service vessels

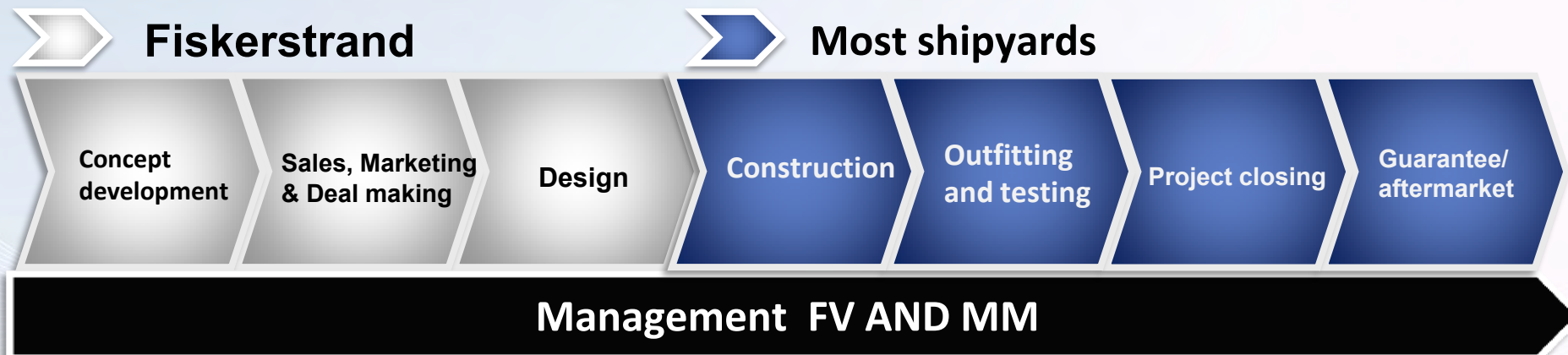
SPECIALITY

- LNG fuelled vessels/LNG technology

COMPANY MAIN TASKS



- R&D / concept development
- Marketing and sales
- Tailor-made design and technical solutions
- Contract agreements and contract management
- Financing
- Subcontracting of hull and outfitting of hull at Fiskerstrand
- Overall project management and control



CURRENT FACILITIES AND CAPACITY AT FISKERSTRAND VERFT AS

- Current capacity of 4-6 new buildings per year
- Number of employees:
 - Approx. 140 employees
 - An additional 150 – 250 contract workers/subcontractors
- 300m quayside with rail cranes, 60t, 20t, 20t and 2,5t
- Floating dock with lifting capacity of 7500t (ship 150x23x7m)
- Machinery and equipment both mobile and stationary on a large scale for large dimensions
- Modern equipment for troubleshooting, adjustment and checking of machinery without disassembly



SHIP DESIGN & ENGINEERING

Technical
Advisors
"Supervision"

Technology-
packages

Building
"Supervision"
engaged by
Shipowners

MULTI MARITIME AS DESIGN 1983 - 2013



More than 100 vessels with MM-Design are built or in order



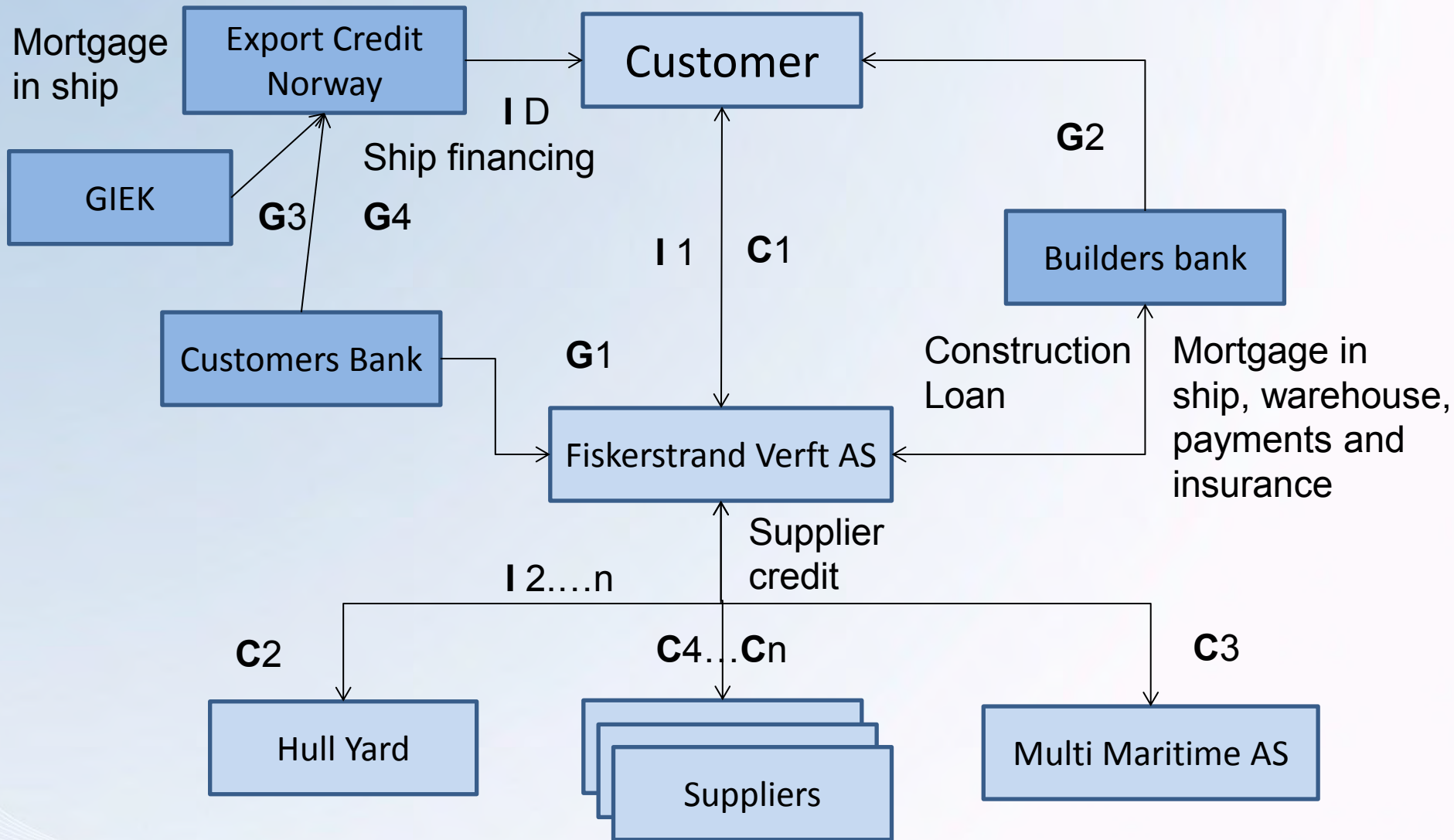
WE HAVE BEEN IN THE RUSSIAN MARKET SINCE 1999



- Working with Russian Shipowners for the last 15 years
- Approx 250 Russian vessels (projects) have been at our yard
- Repairs, maintenance and conversions
- Many Russian speaking employees at our yard
- Excellent cooperation with Russian customers



FINANCING MODEL



C = Contracts **G** = Guarantees **I** = Installments

LIQUIDIFIED NATURAL GAS - THE WAY FORWARD

Three forces are acting to drive changes:

- increased regulations
- competitive pressure
- public demands for more transparency and sustainability

Shipping will be expected to reduce its environmental footprint and is likely to be subject to stricter regulation.

(CO₂, SO_x, NO_x, oil spill)

Using Liquified natural gas (LNG) as fuel offers clear environmental benefit as well as reduced operational and maintenance costs

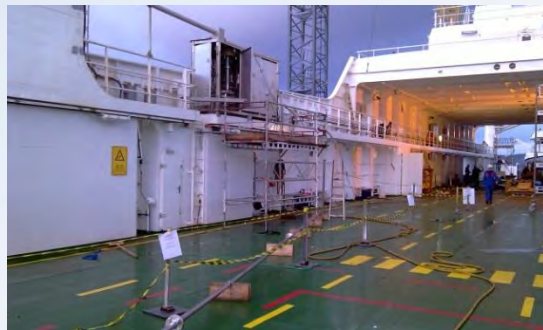
LEADING ON DESIGN & BUILDING OF LNG VESSELS

LNG - Liquefied Natural Gas

- Tank storage temperature -163 degr. C, pressure 6-9 bar
- Usage temperature 4-7 degr. C, pressure 1 bar
- Atmospheric tank can also be used

To meet international requirements:

- Gothenburg Protocol (NO_x)
- Kyoto Agreement (CO₂)
- ECA – Emission Controlled Area



INNOVATION – LNG FERRY CONCEPT

- **Compared to existing ferries:**
- Increased capacity by 30 more cars, 130m
- More fuel efficient
- Less power (~ 2 500 kW) with the same service speed
- More environmental friendly
- Less fuel and ab. 50% reduced methane emission
- Max speed 23 knots
- Less noise and maintenance costs



Design Multi Maritime AS. – MM 120 FD LNG

Outfitted at Fiskerstrand Verft AS

M/F “Boknafjord” for Fjord1, Norway

Car/Passenger Ferry – 242 PCU – 600 PAX – Gas Electrical Propulsion Systems

INNOVATION - LNG FISHFEED VESSELS

Fishfeed Vessels LNG Gas – Electrical Propulsion



Design Multi Maritime AS – MM 70 CC LNG

Outfitting at Fiskerstrand Verft AS

INNOVATION – CONVERSION PROJECT – LNG GAS



M/F FJALIR - 1974

- from ferry to a LNG bunker vessel

- Pilot project / prototype
- Conversion to the world's first dedicated LNG bunker vessel
- Hull and engine/propulsion system kept
- Not need shore gas terminal for the operating vessel
- Short turnaround in terminal



L = 49m
Speed 12 knots
Gas tank 170m³

Design Multi Maritime AS



Outfitted at Fiskerstrand Verft AS



OUR LNG TANK / BUNKER VESSEL



**Barge for LNG storage,
transport and bunkering**

Main dimensions and capacities:

Length Over All ~69.90 m

Breadth Moulded ~13.40 m

Draught scantling 4.00 m

Medium: LNG (CH₄)

Temperature: -196 / +50 °C



Design pressure: 5 bar

Max. cargo density: 500 kg/m³

Net volume –cold: 2 x 1000 m³

Volumetric filling: 0,95

Cargo pumps 1 x 200 m³/h (5 bar)

CLASS : DNV +1A1 Barge for Liquefied Gas

OUR LNG TANK / BUNKER VESSEL



Main Dimensions:

Length Over All	60.60 m
Breadth Moulded	12.00 m
Draught	5.00 m

Tank capacities: LNG (90%) 880 m³
Oil products – 500 m³

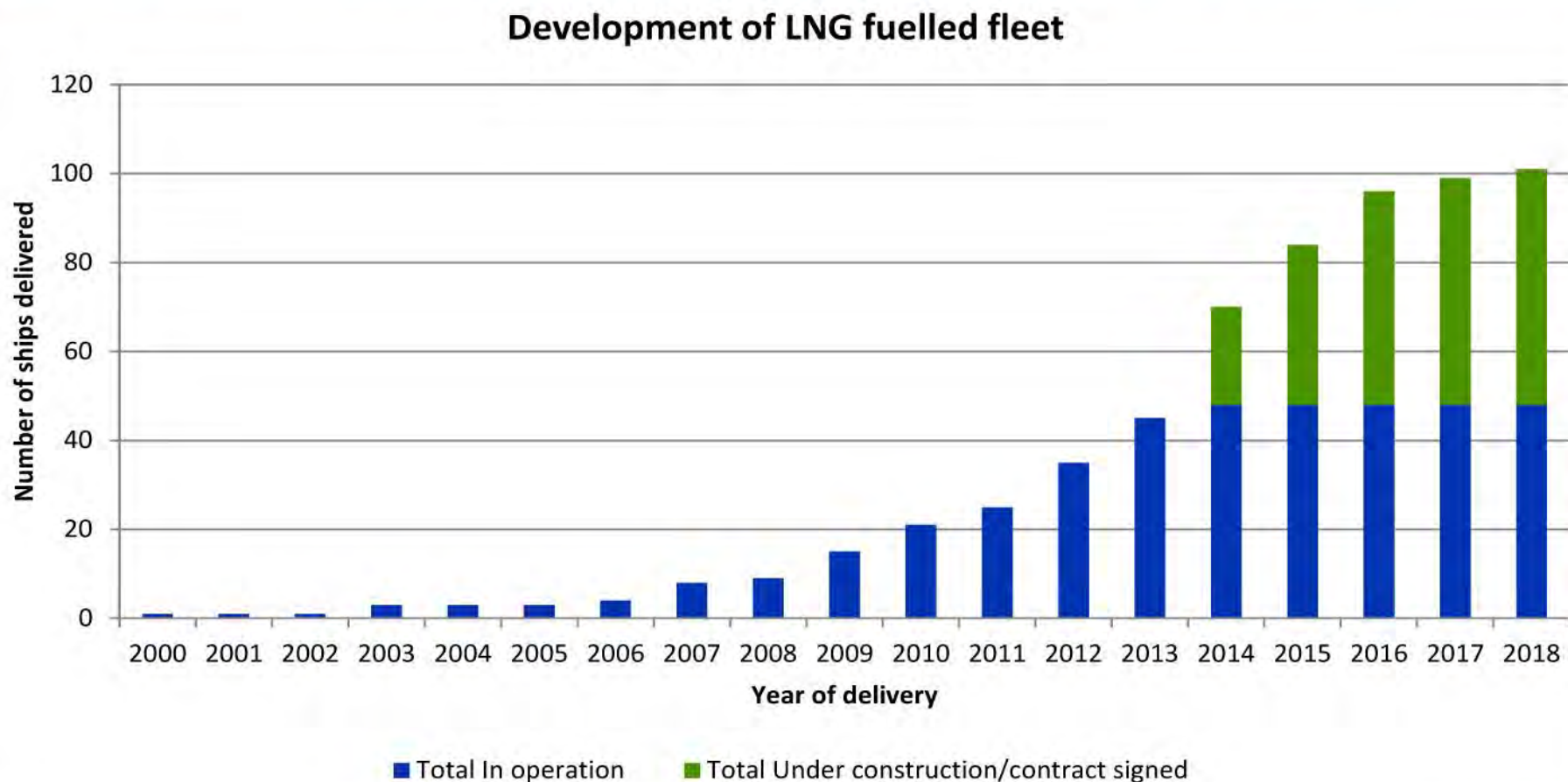
CLASS : DnV (or similar) + 1A1, “Tanker for Liquefied Gas”, “Tanker for Oil products”, ICE 1B, E0, R3

IGC code: IMO type 2G (- 165 °C/ 6 bar g) for carrying Liquefies Natural Gas

IBC code: IMO type II and III for carrying light petroleum products.

Current status: The vessel is under design stage.

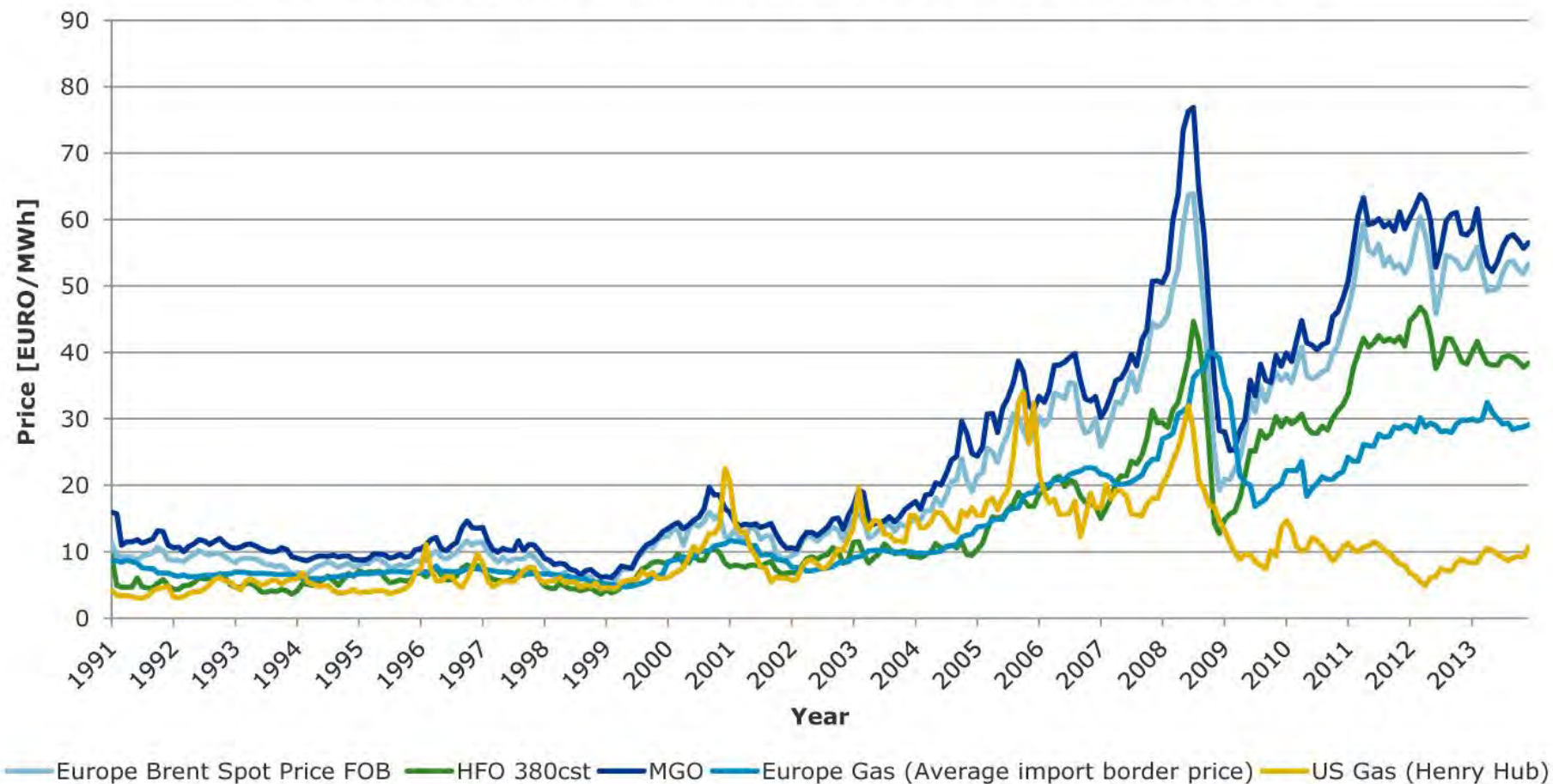
There are currently 101 confirmed LNG fuelled ship projects



Updated 07.03.2014
Excluding LNG carriers and inland waterway vessels

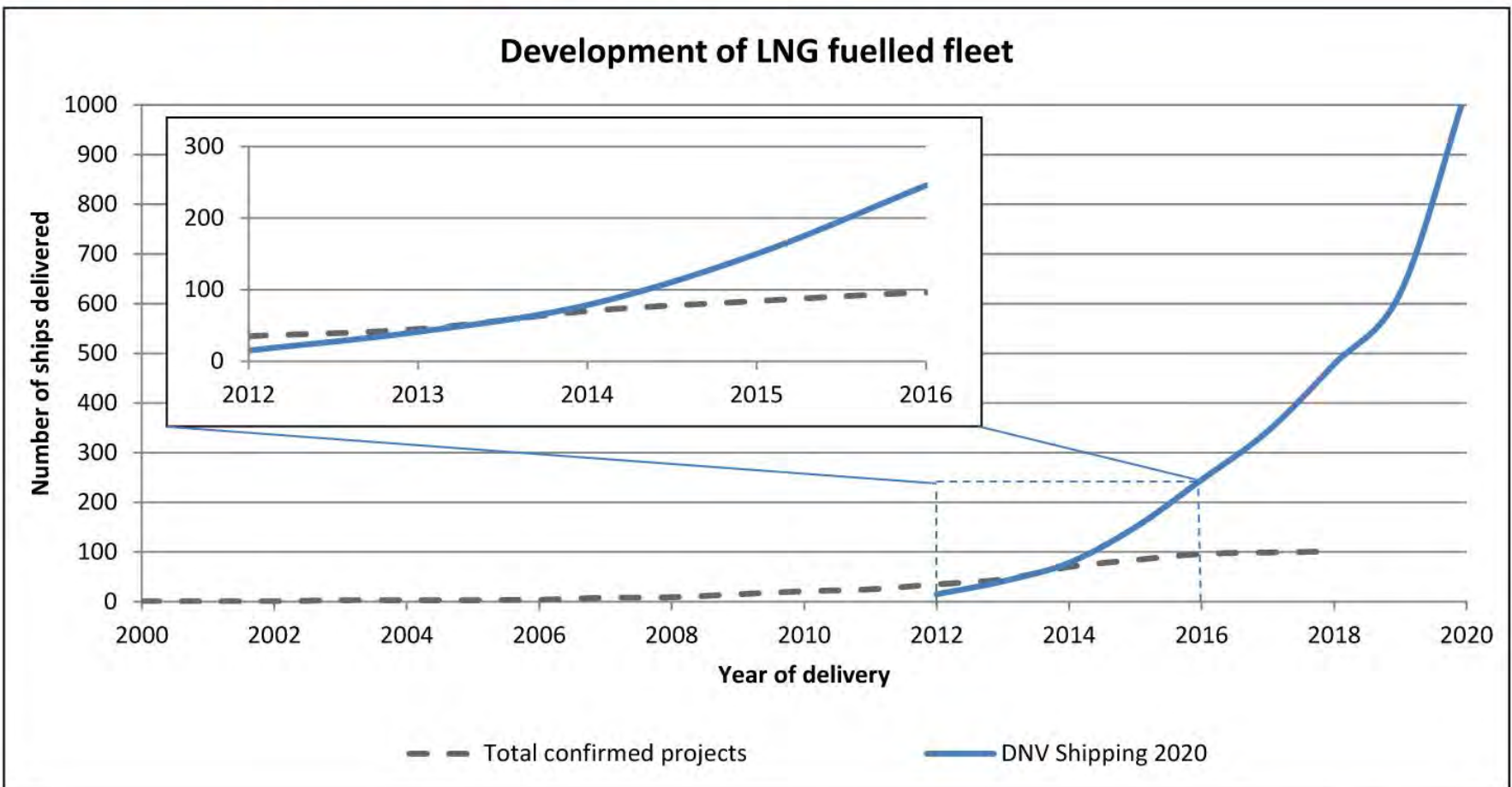
2. Fuel cost

Historical fuel prices on marine fuels and natural gas [EURO/MWh]



Sources: Clarkson, Worldbank

Current development is in line with DNV GL projections Will the exponential growth continue?



Updated 07.03.2014
Excluding LNG carriers and inland waterway vessels

OFFSHORE VESSELS



MULTI-PURPOSE VESSELS



SPECIALIZED CARGO VESSELS



MULTI MARITIME
NORWEGIAN SHIP DESIGN

ICEBREAKERS AND ICE - CLASS VESSELS



MULTI MARITIME
NORWEGIAN SHIP DESIGN

INNOVATION LONGLINER WITH MOONPOOL «GEIR II»

The 2nd. vessel delivered with moonpool to the same shipowner
H.P. Holmeset AS





THANK YOU FOR YOUR ATTENTION!

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