

WÄRTSILÄ SHIP POWER

JAAKKO ESKOLA

**SENIOR EVP
DEPUTY TO THE CEO
PRESIDENT, SHIP POWER**

The most complete Marine Offering on earth



Market trends and drivers

- Development of the global economy drives marine trade and transportation growth
- Development of oil & gas prices stimulates investments in exploration and production of offshore oil & gas
- Environmental regulations drive demand for environmental solutions and LNG as a marine fuel
- Increasing focus on energy efficiency and environmental performance



The development of efficient vessels, environmental solutions and gas technology will be our priority in meeting your evolving needs.



Strategic focus

Wärtsilä's strategy for the marine and oil & gas market

To be recognised as the leading provider of innovative products and integrated solutions in the marine and offshore oil & gas industry.

LEADER IN

Energy efficiency



Gas and dual-fuel solutions



Environmental solutions



THROUGH OFFERING

- **Lifecycle solutions** for ship owners and operators
- **Integrated solutions** for the shipbuilding industry, owners and operators
- The most competitive products and delivery process for the marine industry

Why do our customers choose us?

The fundamentals has not changed just the order of importance

Wärtsilä does:

- Continuously responsive to customer needs, competent and reliable
- Integrated system supplier, total solution provider
- Provide high-quality life-cycle power solutions, maintenance and service suitable to customers
- Enhancing customers' business through superior energy, operational and environmental efficiency

Trusted partner

Customer needs:

- Customer understanding
 - Understands customers business and needs
 - Matching offering that suits the needs
- Trustworthy partner
 - Has good references
 - Reliable
 - Takes responsibility
- Customer management
 - Easy to work with
 - Competent personnel
 - Response time
- Efficient systems
 - High quality
 - Innovative

This is what we bring to the market

Project services
Support during
project development
and execution

**Comprehensive
product portfolio**

- Marine lifecycle services
- Ship design and naval architecture
- Financial services
- Integration engineering
- Project transport & logistics
- Project management
- Site management and supervision
- Commissioning

- Environmental technologies
- Engines and gensets
- Propulsion equipment
- Power distribution
- Automation & Control
- Power drives
- Pumps and valves
- LNG liquefaction and regasification

**Operational
support**

- All maintenance (schedule & unscheduled)
- Performance optimization
- Fixed & variable pricing
- Performance guarantees
- Lifecycle cost guaranteed

THE MOST COMPLETE MARINE OFFERING ON EARTH



Automation



Ballast Water Management



Compressors



Engines & Generating Sets



Exhaust Gas Cleaning



Gas Systems



Gears



Inert Gas



Integrated solutions



Marine Lifecycle Solutions



Oil Separation



Power Electric Systems



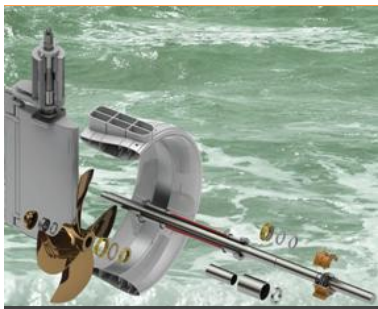
Project Management



Propulsors



Pumps & Valves



Seals, Bearings & Stem Tubes



Services



Ship Design



Waste & Fresh Water Management

The most complete Marine Offering on earth



Truly global



→ 70 countries → 160 locations → 18000 people

The only player in the market with a truly global presence and capability to service customers 24/7 on all continents



Every second ship in the world is equipped or served by Wärtsilä

The background of the slide is a high-angle, wide shot of a mountainous landscape. The terrain is covered in a thick layer of snow, with various ridges, valleys, and peaks visible. The sky is overcast with soft, grey clouds. The overall tone is cool and desaturated.

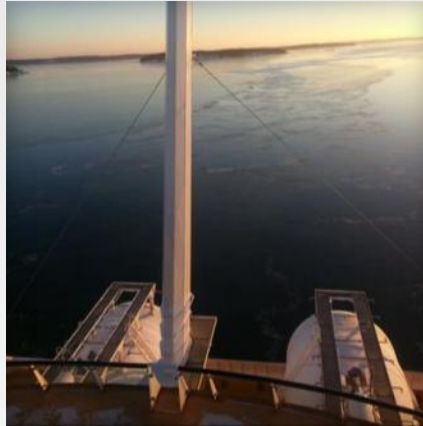
Market drivers and Competitive landscape

Market drivers



Environment

- Emissions legislation (Nox) 2015-2016 postponed (sulphur still to be implemented)
- Financial impact for owners & increased uncertainty with fleet renewals/upgrades



LNG

- LNG bunkering availability
- Wärtsilä proven technology
- Fuel types being used



Offshore

- Deepwater requiring more power
- High oil price
- Brazil and China



Merchant

- Fleet supply and demand volatility
- Low cost manufacturing

Increasing environmental regulation and alternatives for decreasing emissions

NO_x

Acid rains
Ozone depletion

Tier II (2011)
Tier III in ECA*
(2016)

SO_x

Acid rains

3.5% (2012)
ECA 0.1% (2015)
Global 0.5% (2020)

PARTICULATE MATTER

Impact on air quality

Along with SO_x
reduction

GREENHOUSE GAS

Global warming

Under evaluation
by IMO

BALLAST WATER

Damage to local
eco-systems

Global ballast water
convention

Wärtsilä is offering a multi-solution approach to meet requirements for different owner needs, ship types and operating profiles.

LNG

- Simultaneous reduction of GHG / SO_x / NO_x / PM
- Market: mainly ships with regular routes and limited autonomy requirements operating in ECAs
- Infrastructure development is needed for larger uptake
- Conversion solution available

HFO

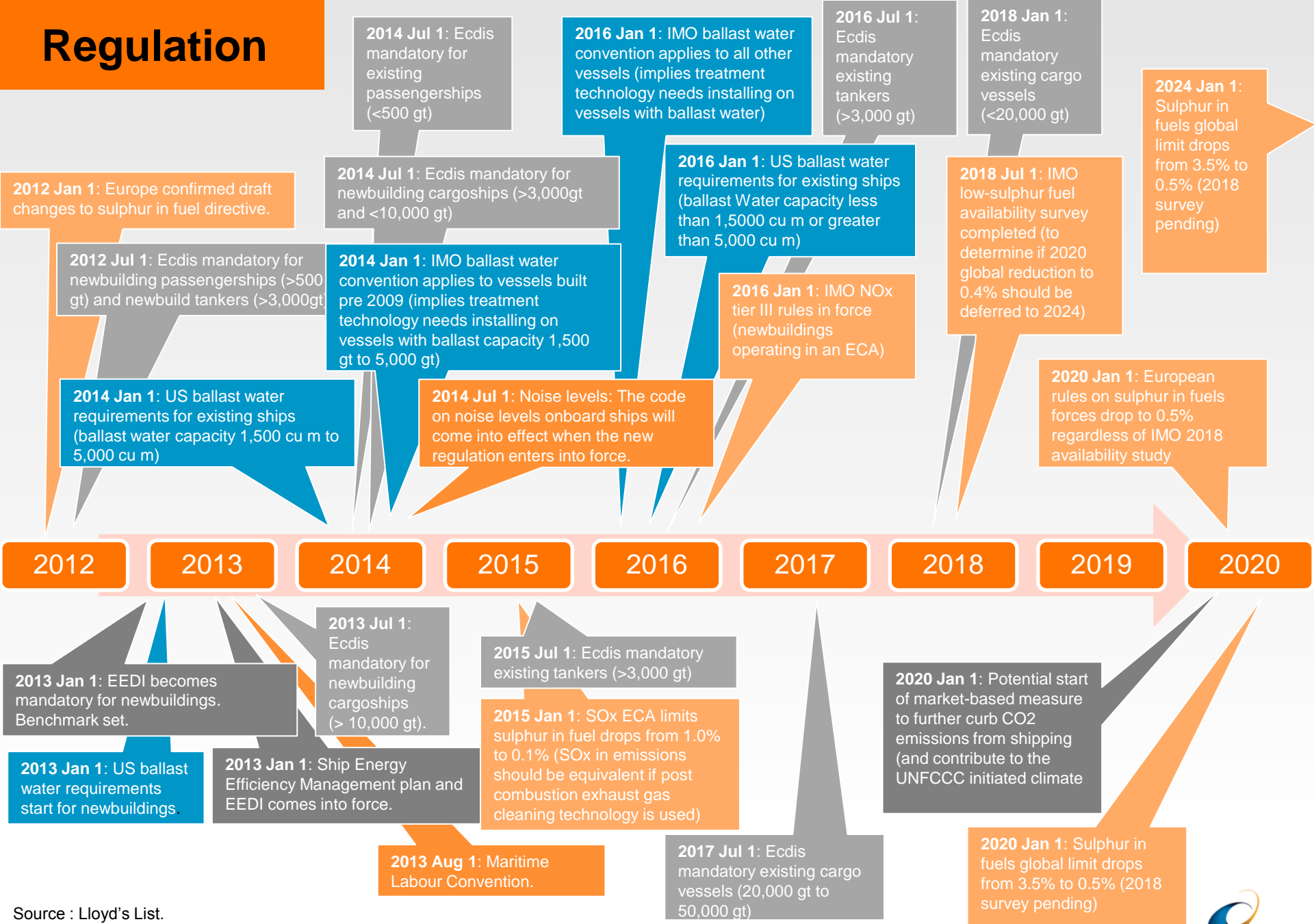
NO_x: SCR or wet methods
SO_x: Scrubbers
Market: mostly merchant ships operating a significant time in ECAs

MGO

- NO_x: SCR or primary methods
- Market: ships operating a limited time in ECAs, small ships

*Emissions Control Areas

Regulation



The competition has changed



E&A

Propulsion

Gas Systems



4-stroke medium speed



Flow Systems



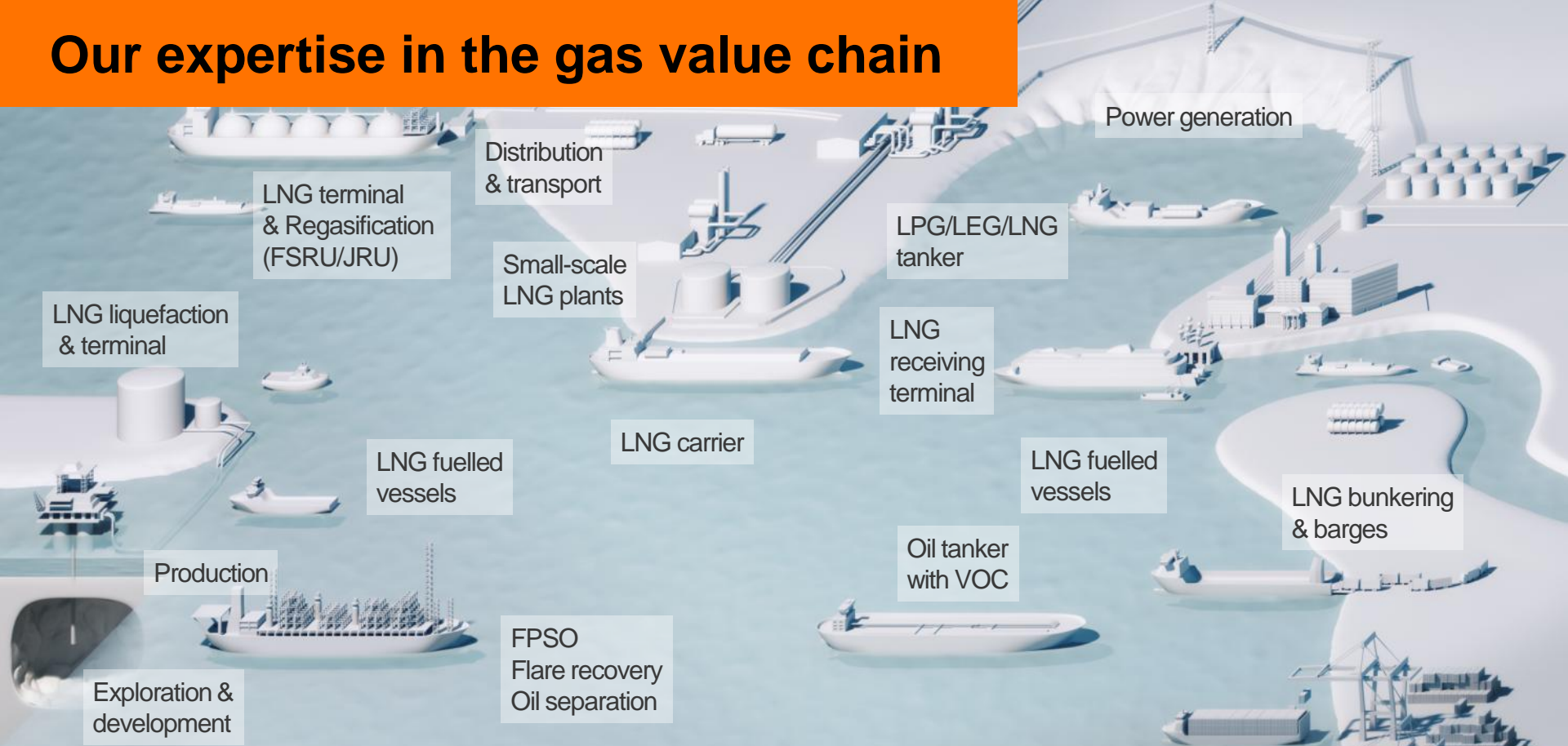
Ship Design

2-stroke

Environmental solutions



Our expertise in the gas value chain



Exploration & Drilling

Production & liquefaction

Transport & storage

Receiving terminals & regasification

Distribution & transport to the users

- LNG fuel gas systems for OSVs

- On- & Offshore small scale liquefaction
- Antiflaring/VOC
- Oil separation
- Gas FPSO

- LNG fuel gas systems
- LPG, LEG & LNG cargo handling

- Jetty & Floating regasification
- Bunkering & barges
- Receiving terminals

- Gas/LNG distribution/logistics
- Feed gas to Power plants

Clear leadership in dual-fuel applications

Power Plants



- DF Power Plant**
- 67 installations
- 354 engines
- Output 4600 MW
- Online since 1997

Merchant



- LNGC**
- 141 vessels
- 567 engines
- Multigas Carrier**
- 5 vessels
- 20 engines
- Conversion**
- 1 Chem. Tanker
- Ro-Ro**
- 2 vessels
- 8 engines

Offshore



- OSV's**
- 31 vessels
- 96 engines
- Production**
- 2 platform
- 9 FPSO's
- 1 FSO
- 40 engines

Cruise and Ferry



- LNG Cruise ferry**
- 1 vessels
- 4 engines
- Complete gas train
- LNG ferries**
- 5 ferries
- 20 engines
- Complete gas train

Navy



- Coastal Patrol**
- DF-propulsion
- DF main and auxiliary engines

Others



- TUG**
- 2 vessel
- 2 engines each
- Mechanical drive
- Guide Ship**
- 1 vessel /engine
- IWW**
- 2 vessel
- 3 engines

→ 6 segments → > 1'000 engines → > 9'000'000 running hours

2S DualFuel engines

New 4S engine portfolio

Wärtsilä 3C

New generation X engines

Medium voltage power drive

LNGPac™ ISO

WST – 45U

BWMS aquarius

EGC

Gas reformer

System Integration at its best Evergas

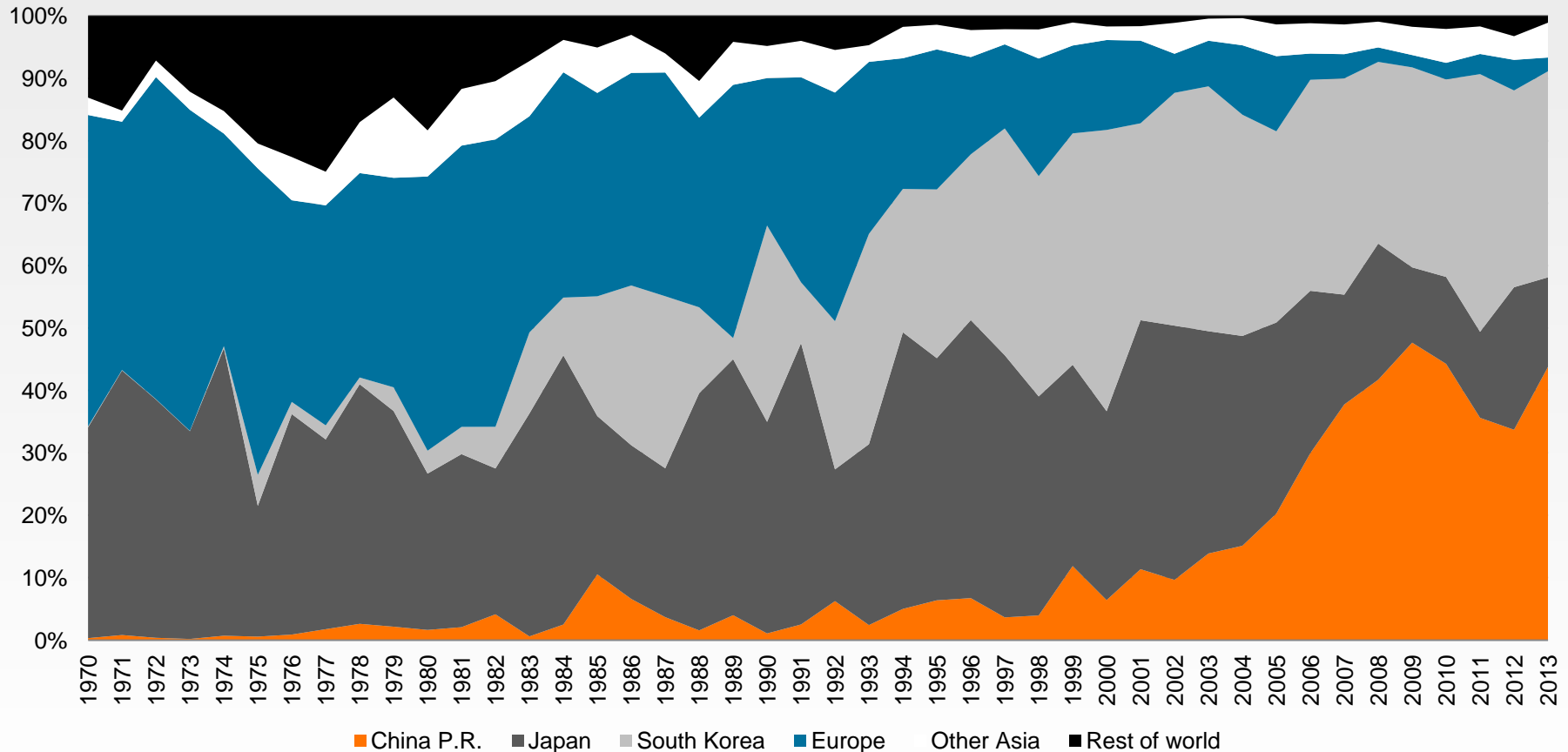


Shipping outlook

Shipbuilding has moved to Asia

China has gained the top merchant builder position

Contracting volumes - Share by region (GT)

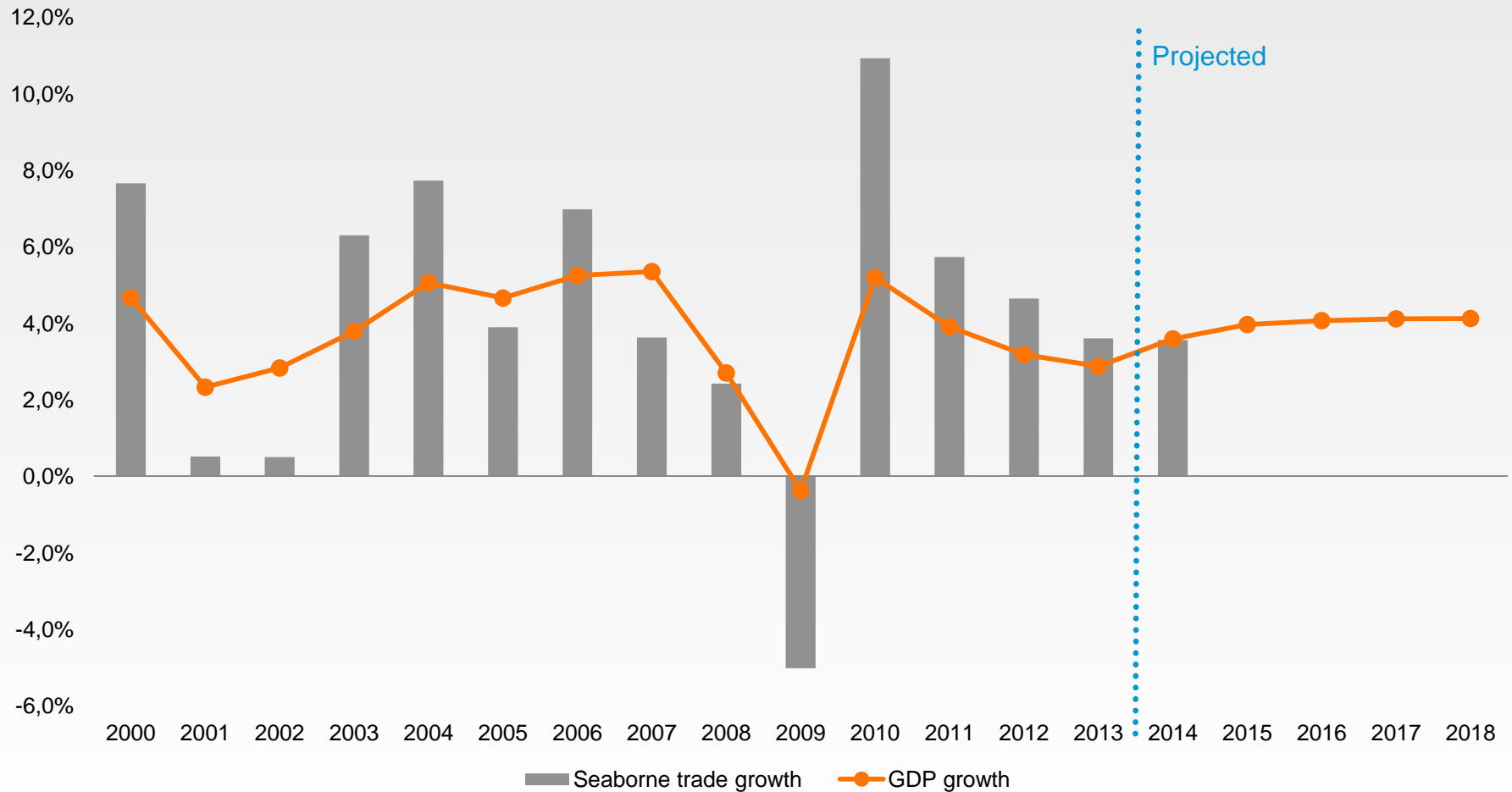


In 2012, Chinese yards won back some of the contracting share they lost to South Korea in 2011. This continued in 2013.

Source: Clarkson Research Services



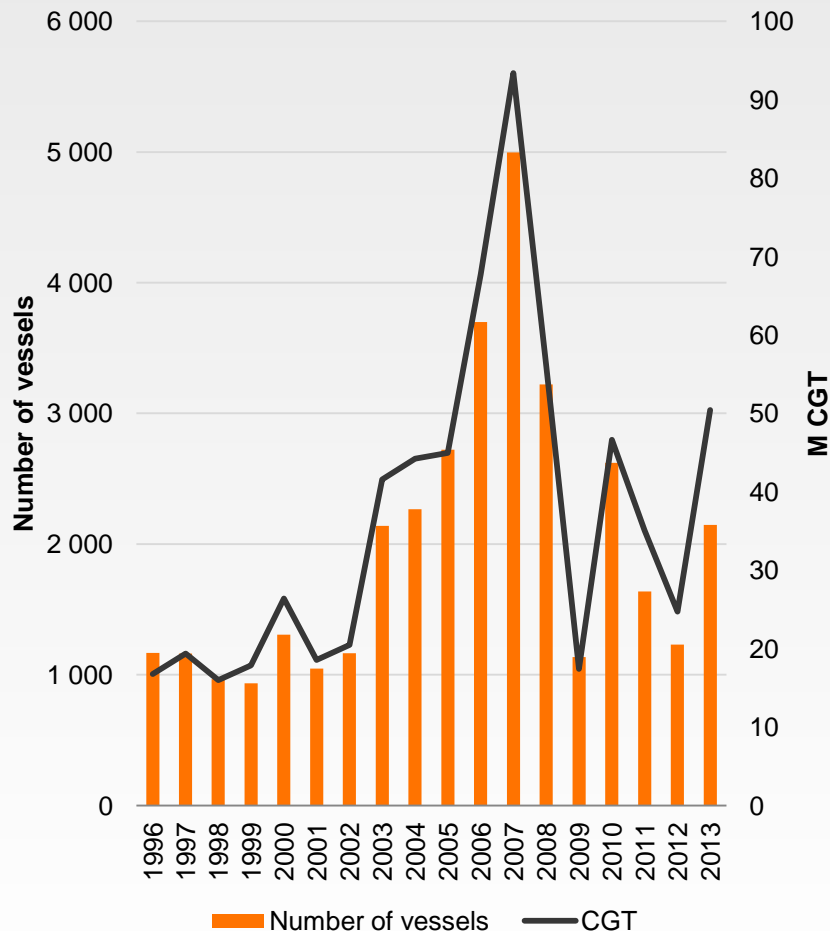
Shipping and shipbuilding demand depends on global economy



Political and economic issues continue to limit growth in the short-term. The global economic outlook for the medium- to long-term is more positive due to more robust growth projections for developing economies and the concurrent recovery of western economies.

Source: IMF, Clarkson Research Services

Contracting activity development

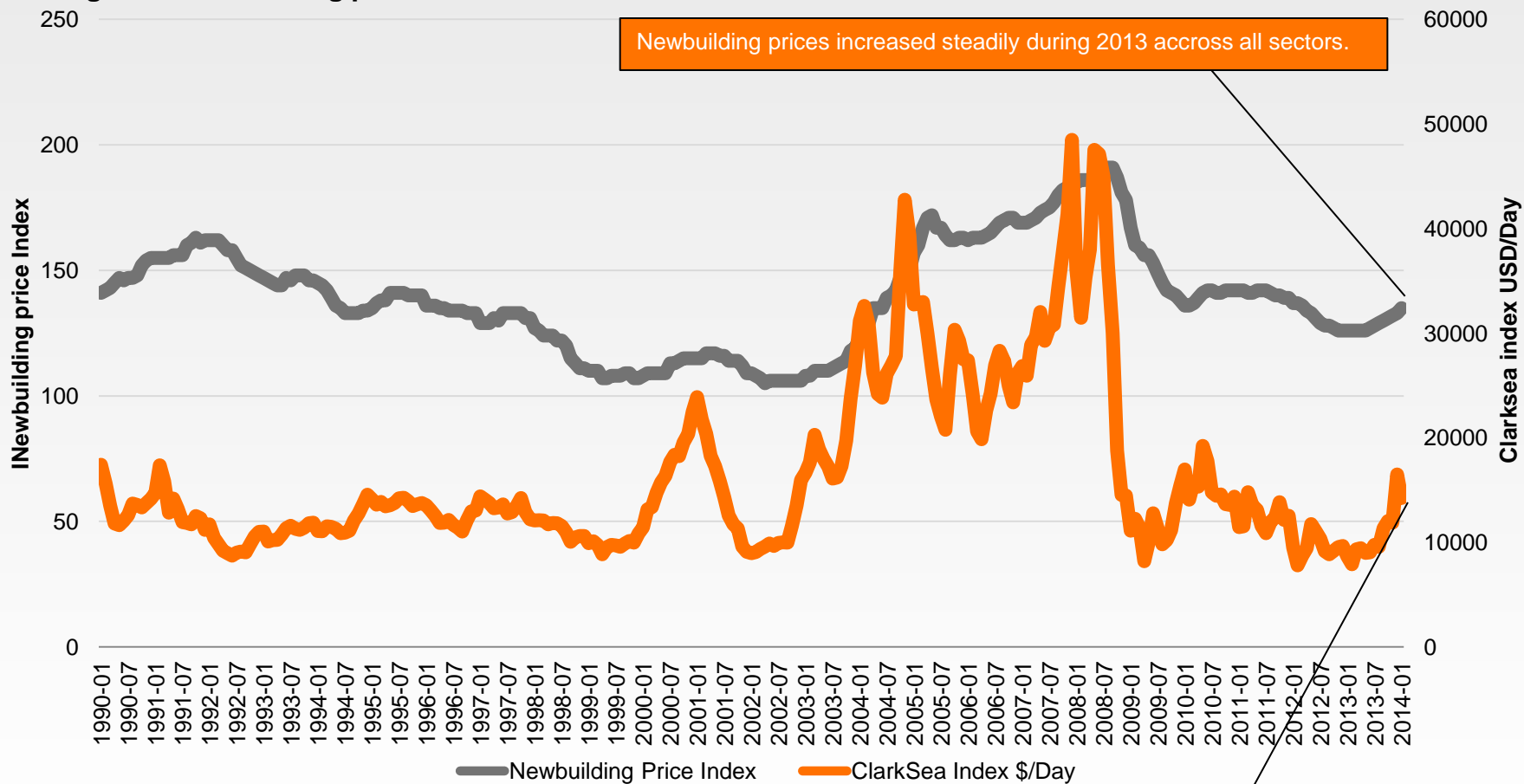


- Contracting activity improved in 2013
- Finance and poor freight markets are clouding recovery
- The contracting product mix has been spread across the various vessel sectors
- Regulations and fuel prices driving towards eco designs and gas as a fuel
 - Accelerated demolition creating additional demand
- High proportion of contracts with options attached in 2013
 - Owners wanted to take advantage of the attractive newbuilding prices in a rising market

Source: Clarkson Research Services

Earnings and newbuilding prices

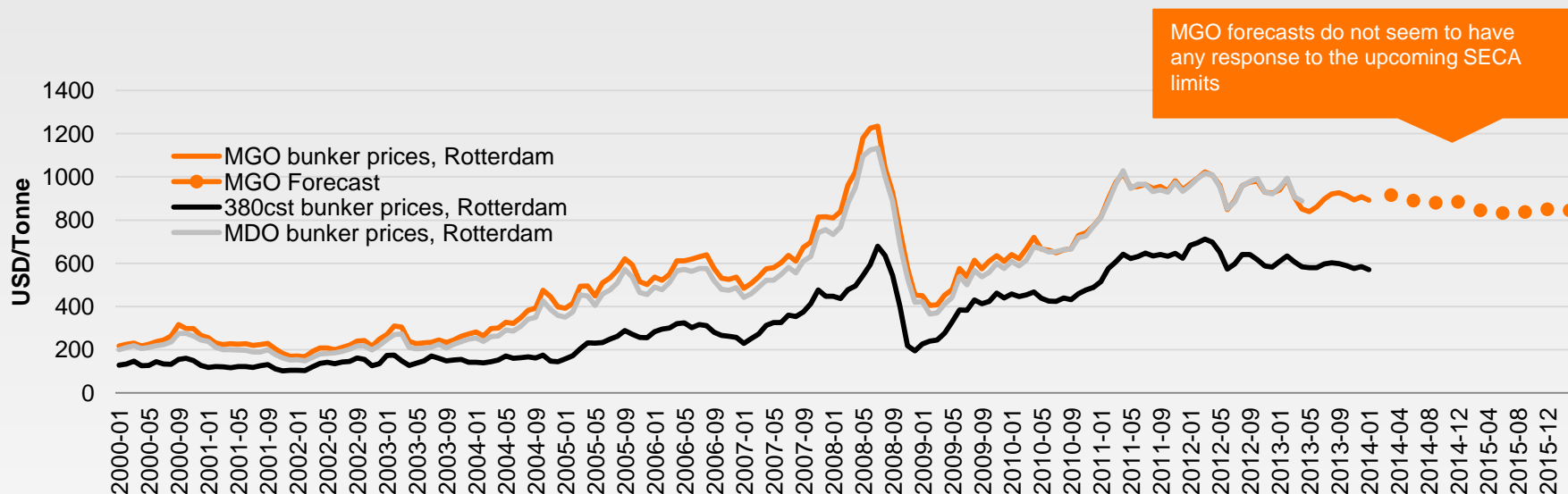
Earnings and newbuilding prices



Earnings dropped in January from December highs, however remain in an improved level. VLCC rates fell dramatically during the last week of January bringing average earnings down by 58% w-o-w to \$20,387/day.

Source : Clarkson Research Services

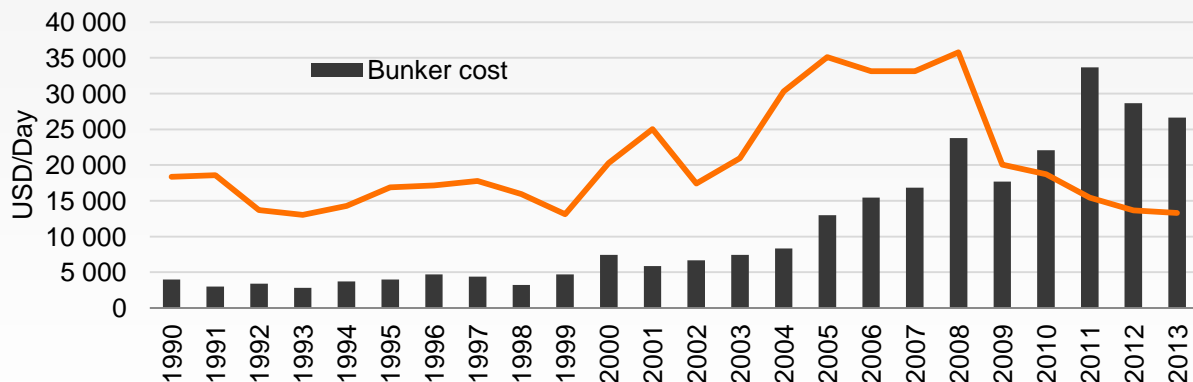
Bunker fuels – Focus on fuel efficiency, regulatory issues



Issues of fuel efficiency and impending environmental regulations are making owners increasingly conscious of more 'eco' designs.

In addition the owners may increasingly wish to scrap more inefficient tonnage at an age below the historical norm.

Price of fuel for the ship vs. price of the ship

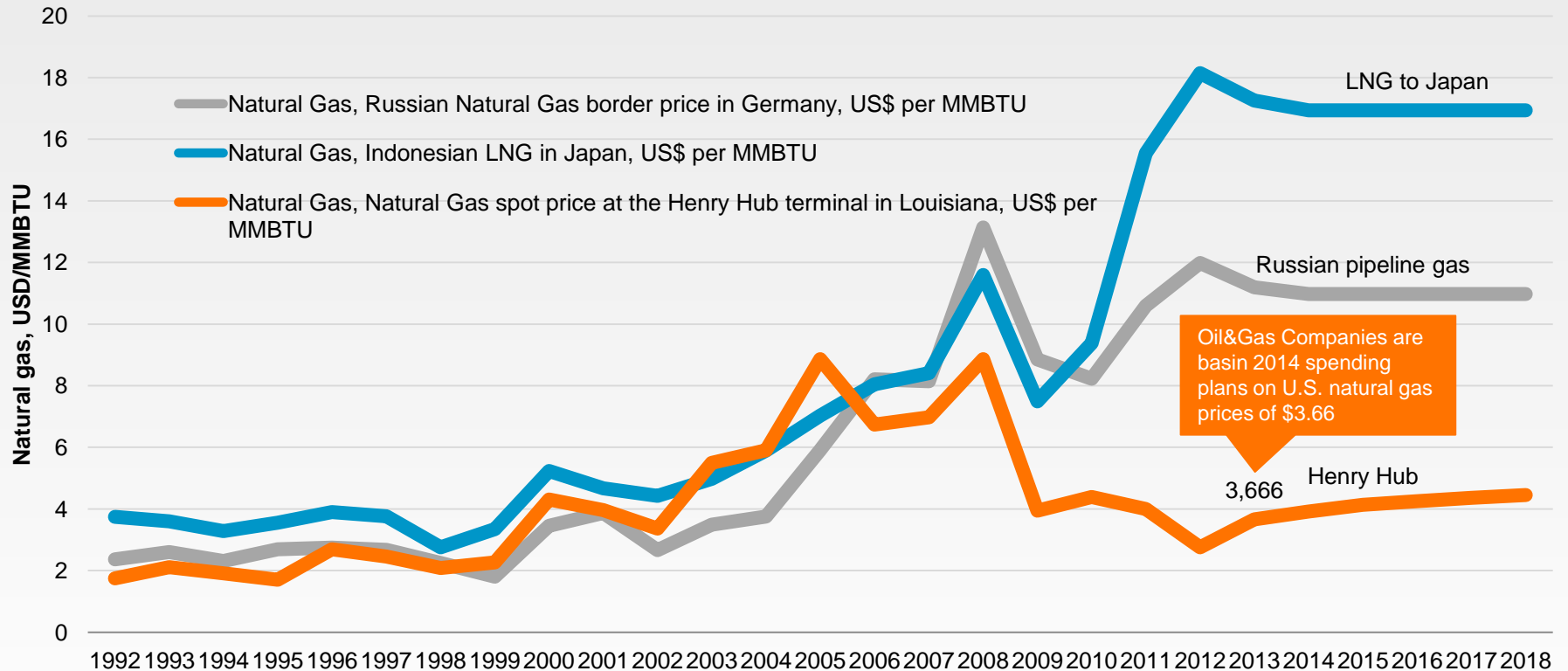


Source: Clarkson Research Services, Consensus Economics Inc.

Fundamental change in the economics of shipping

Gas prices

Natural gas price historical and forecast (IMF)



As LNG gains a more substantial share of the gas market, it is expected that the traditional oil indexed long term gas transportation contracts are likely to switch to an independent, hub or spot based pricing method.

The effects of this movement in the gas markets are expected to lower gas prices, as the differential between current oil and gas prices increases and individual gas futures markets help to mitigate risks associated with the spot market, increasing the attraction of gas as a fuel versus coal and oil.

Source : IMF

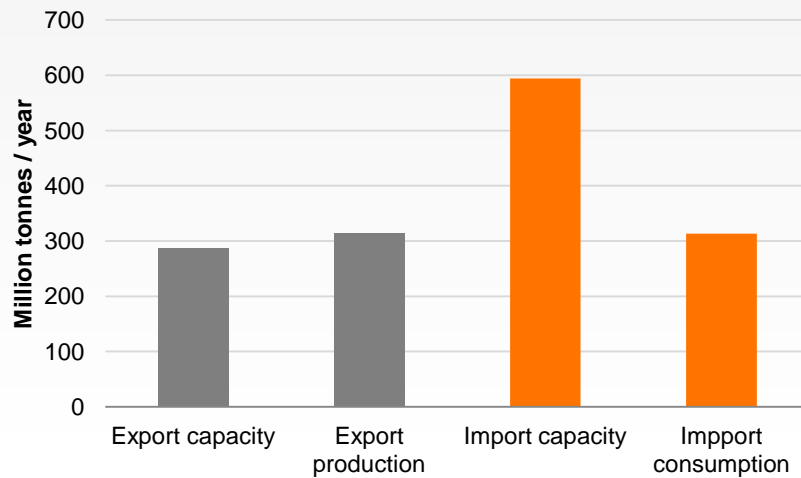
Offshore outlook



Strong growth in LNG supply and demand

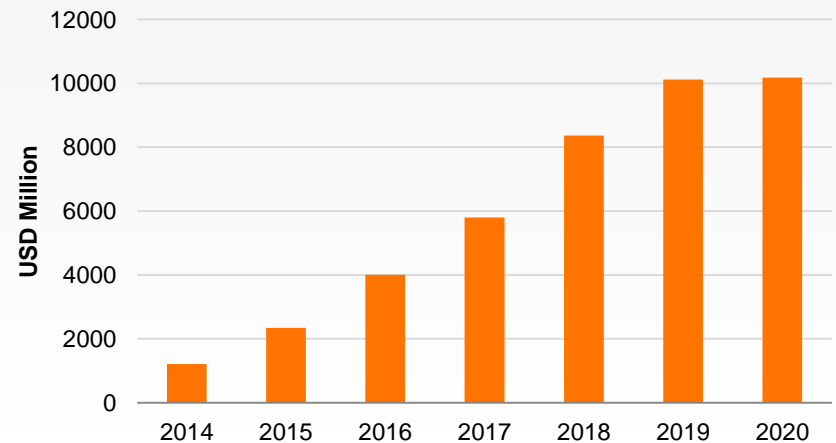
- Natural gas is becoming an increasingly popular fuel for power generation offering a relatively safe (compared to nuclear); cheap (compared to oil); and clean (compared to coal) energy source.
- Demand for natural gas to increase by 55% over the next 20 years
- 30% of global gas imports are via LNG
- Lack of new LNG export capacity limited trade in 2012 and 2013
- Growth supply in recent years driven by Middle East, demand driven by Asia
- Significant project delays and cost overruns
- Large Australian projects coming online
- Potential future supply from Russia, US shale gas, W & E Africa & Mediterranean
- CAPEX on FLNG expected to increase significantly
- Asia will dominate FLNG regas projects as domestic gas demand grows.

World LNG exports and imports 2012



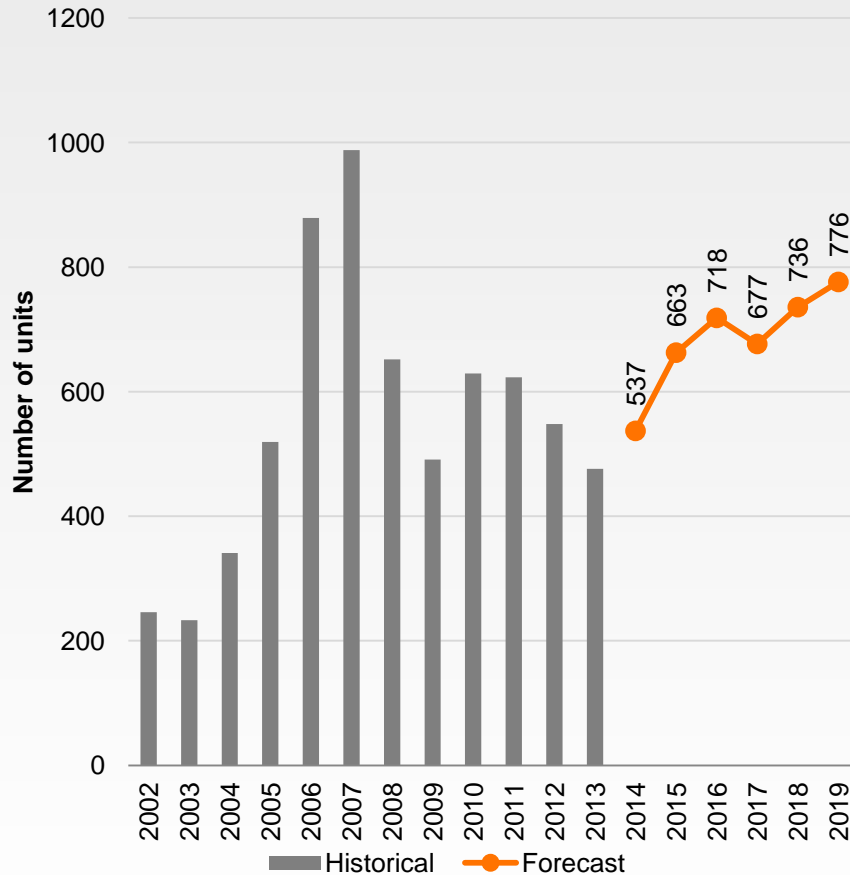
Source: Douglas-Westwood, Petroleum Economist, SP BI

CAPEX on FLNG Liquefaction vessels



Offshore contracting outlook

Offshore contracting historical and forecast



Source : Clarkson Research Services, OFC September 2013

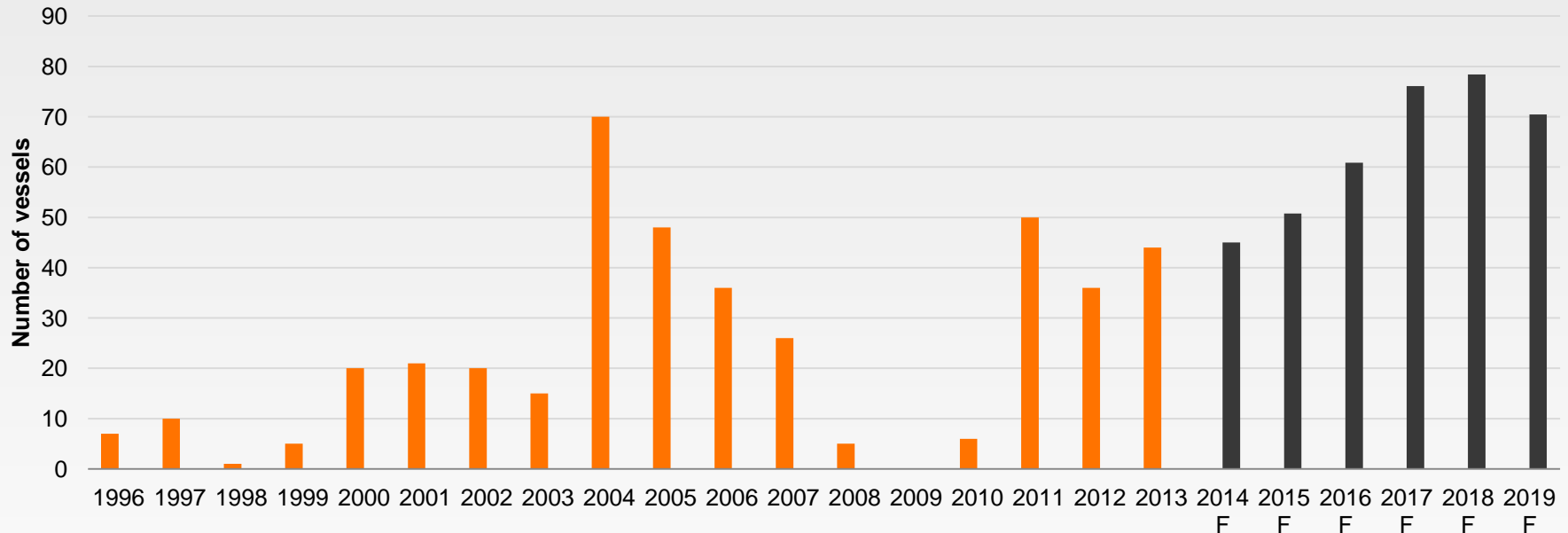
- The offshore oil and gas industry is recognised as a key growth area for the future of oil production and fleet growth. Whilst some oil producing areas are in long term decline, this has only encouraged exploration in less conventional areas, resulting in a need for more specialised and technologically advanced structures.
- The long-term forecast requirement for structures engaged in the offshore oil and gas business is based upon analysis and modelling of future fields coming online.
- Offshore mobile contracting is expected to total 537 in 2014, slightly up from 2013.
- Long-term projections suggest an average of 661 contracts p.a. (2013-2019) compared to an average of 589 p.a. (2008-2012).
- Despite the supplyside growth in the OSV and rig sectors, demand is still expected to increase significantly, leading to further contracting in these sectors.
- The expectation for offshore supply-side expansion is supported by the future field developments, notably by those in the deep water.



Contracting update

LNG Carriers

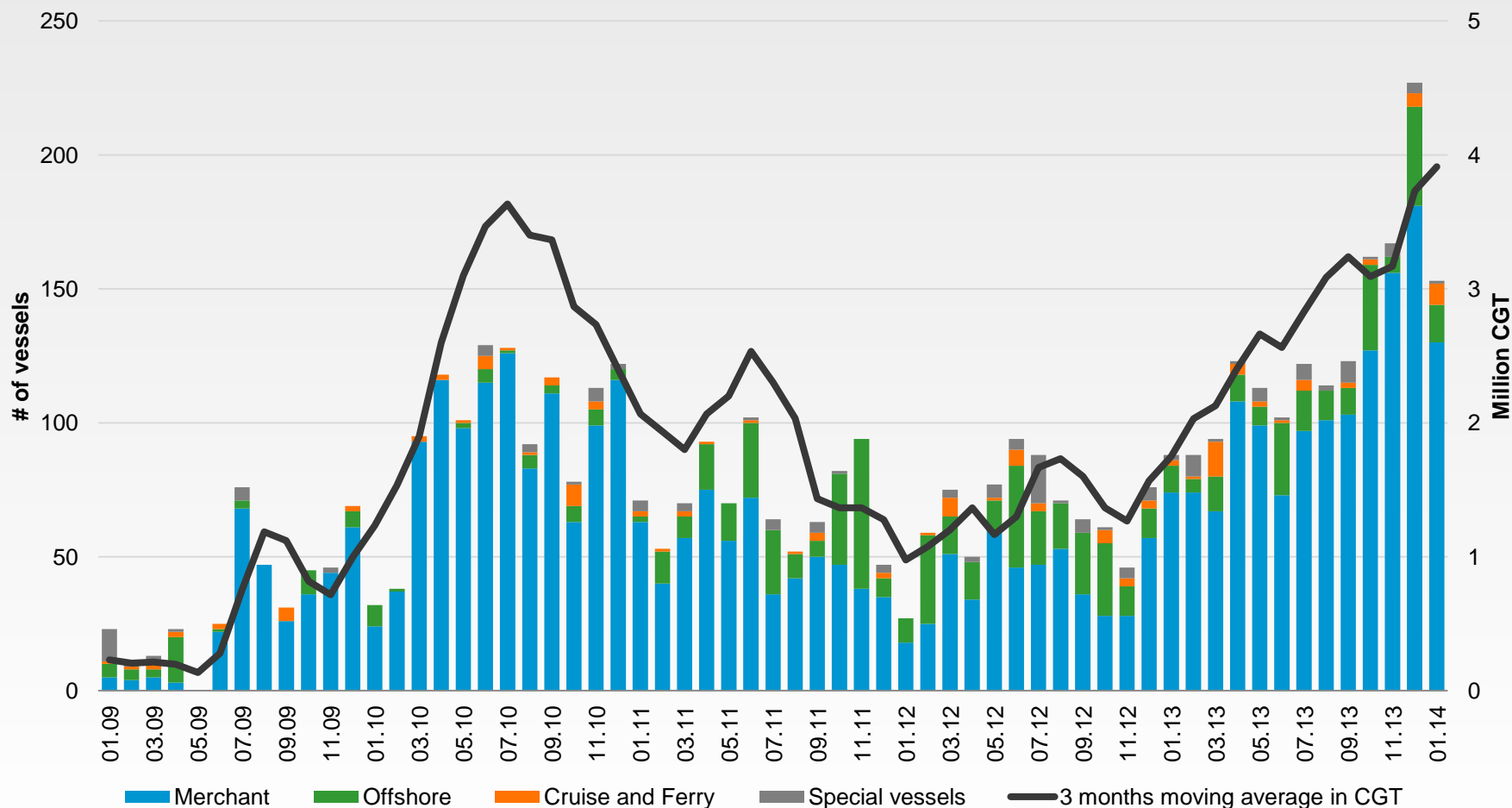
LNG Carrier Contracting activity



- Medium- and long-term new build potential are promising - long liquefaction and regasification project list
- Short term overcapacity - export project delays
- Closure of nuclear plants and environmental issues associated with coal use in Asia and Europe bring good news to LNG market

Source: Clarkson Research Services, SP BI

Contracting Activity Development – All vessels



Source: Clarkson Research Services, Contracting activity as per 3rd of February 2014

Thank you!



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www.wartsila.com