

# LNG intelligence

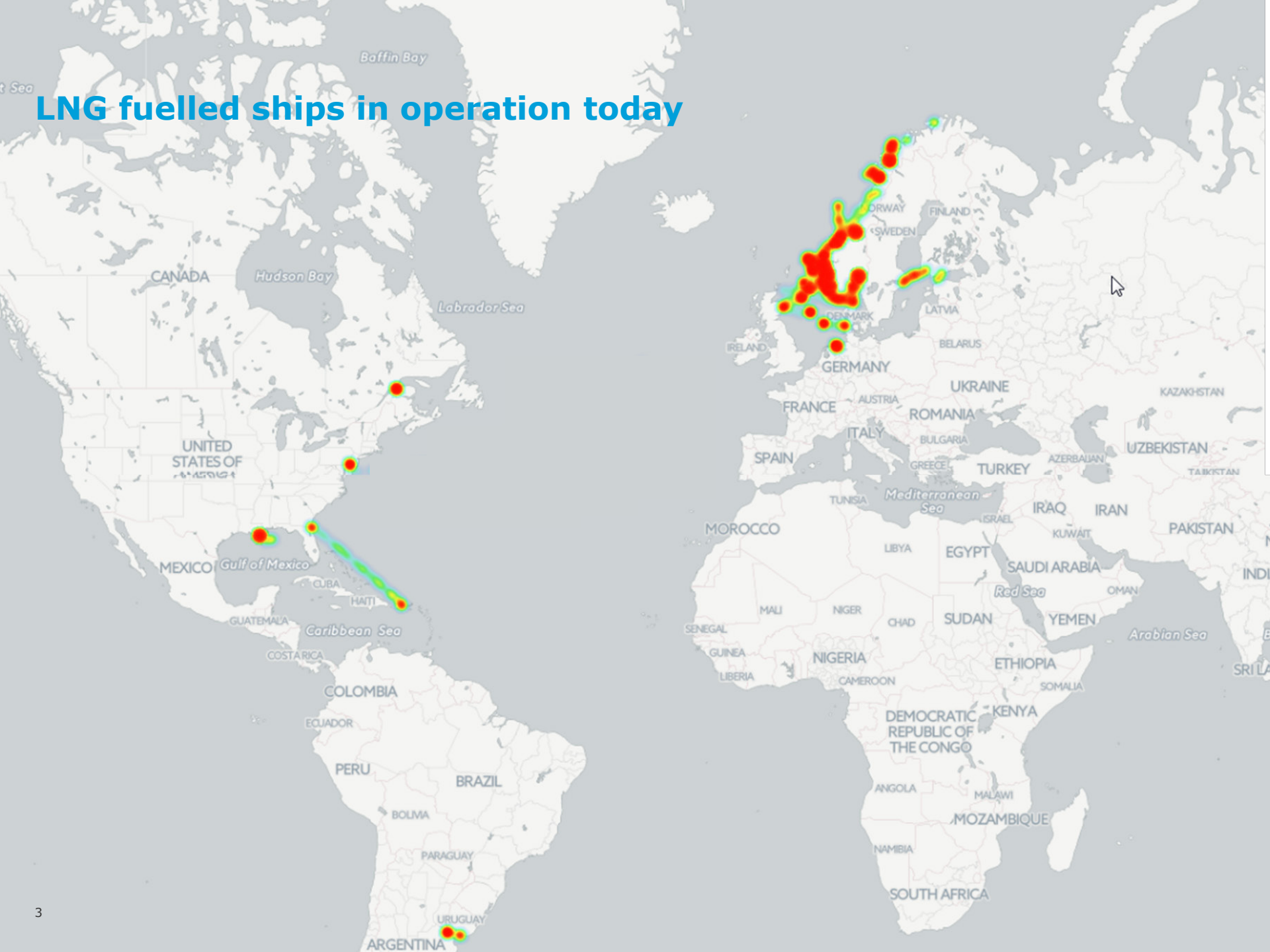
## Understanding Today's Supply Options for Marine LNG – Modelling the Marine Demand for LNG

28 November 2016

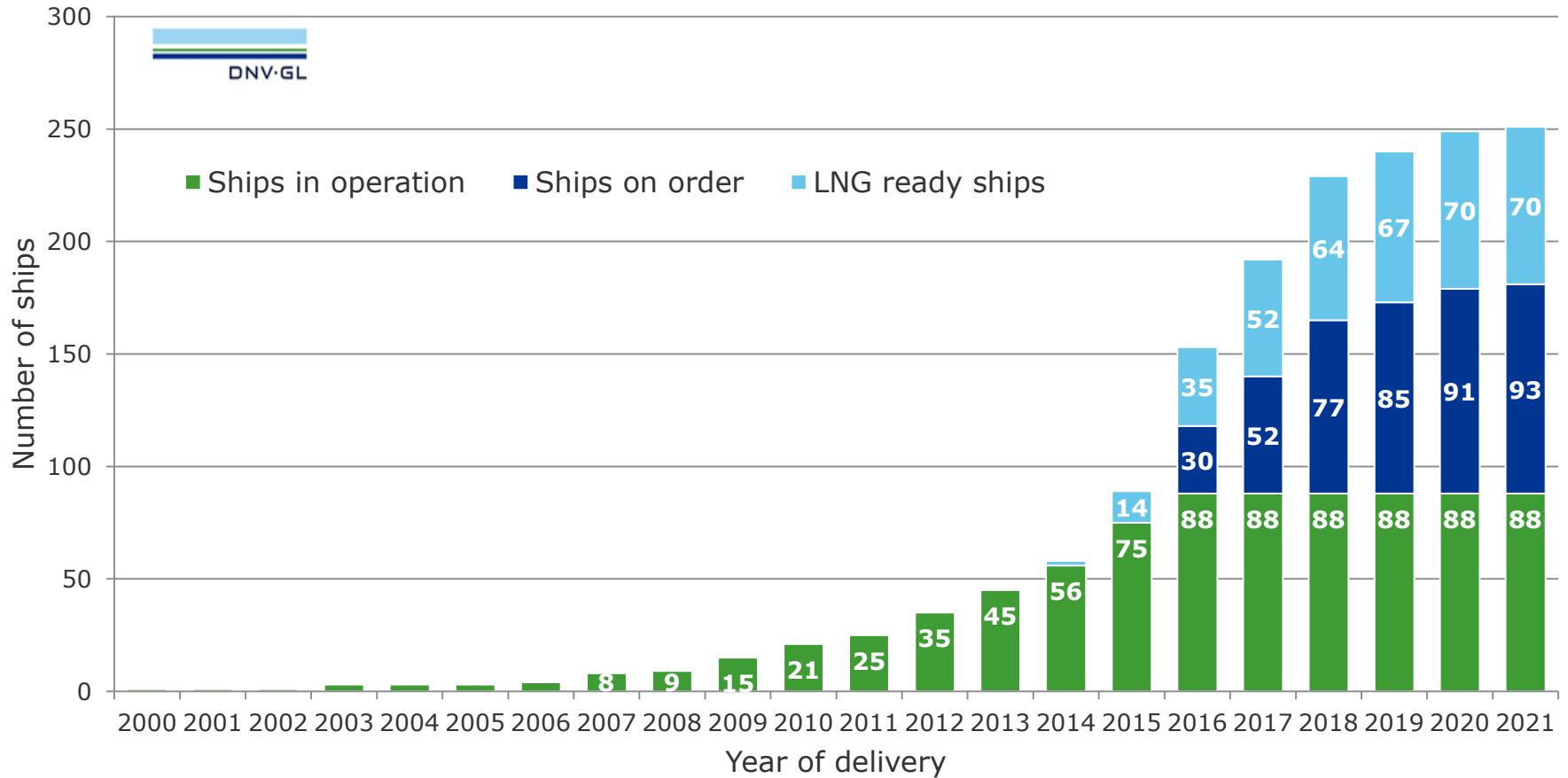
# Ships

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# LNG fuelled ships in operation today



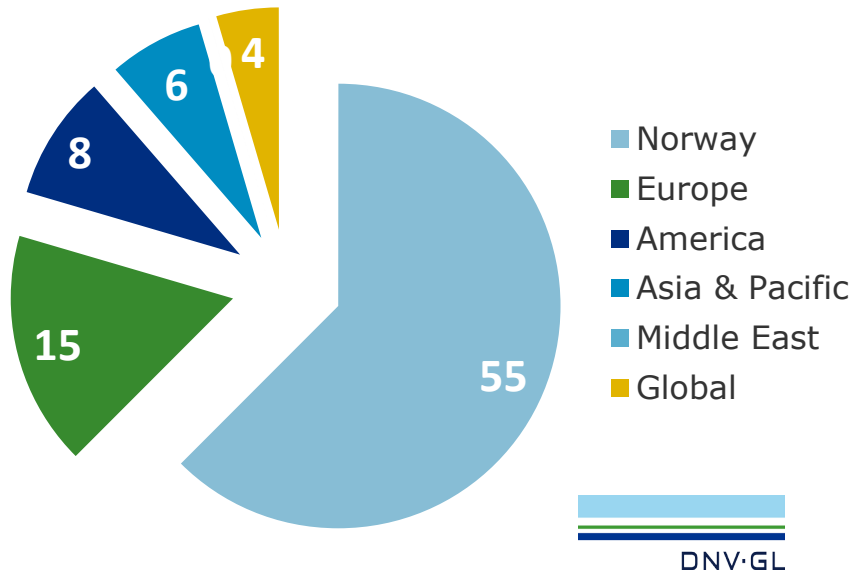
# A visible share of the world fleet order book is LNG fuelled



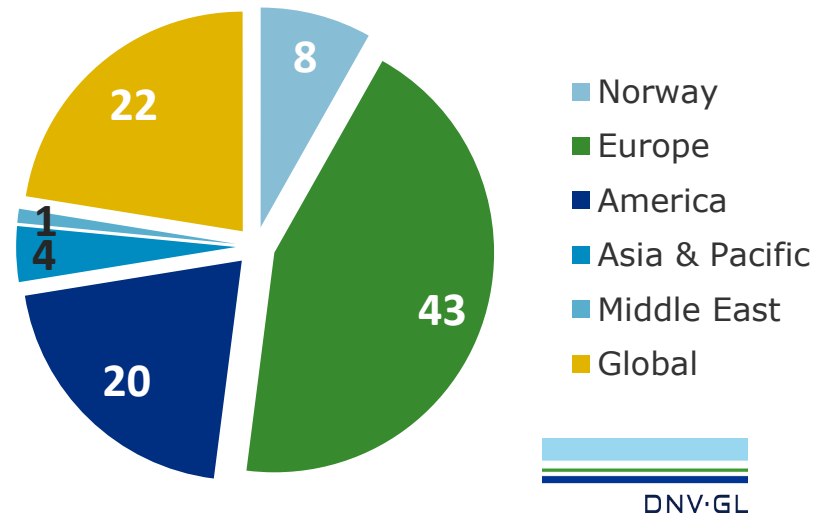
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# Beyond Norway – LNG fuelled shipping goes global

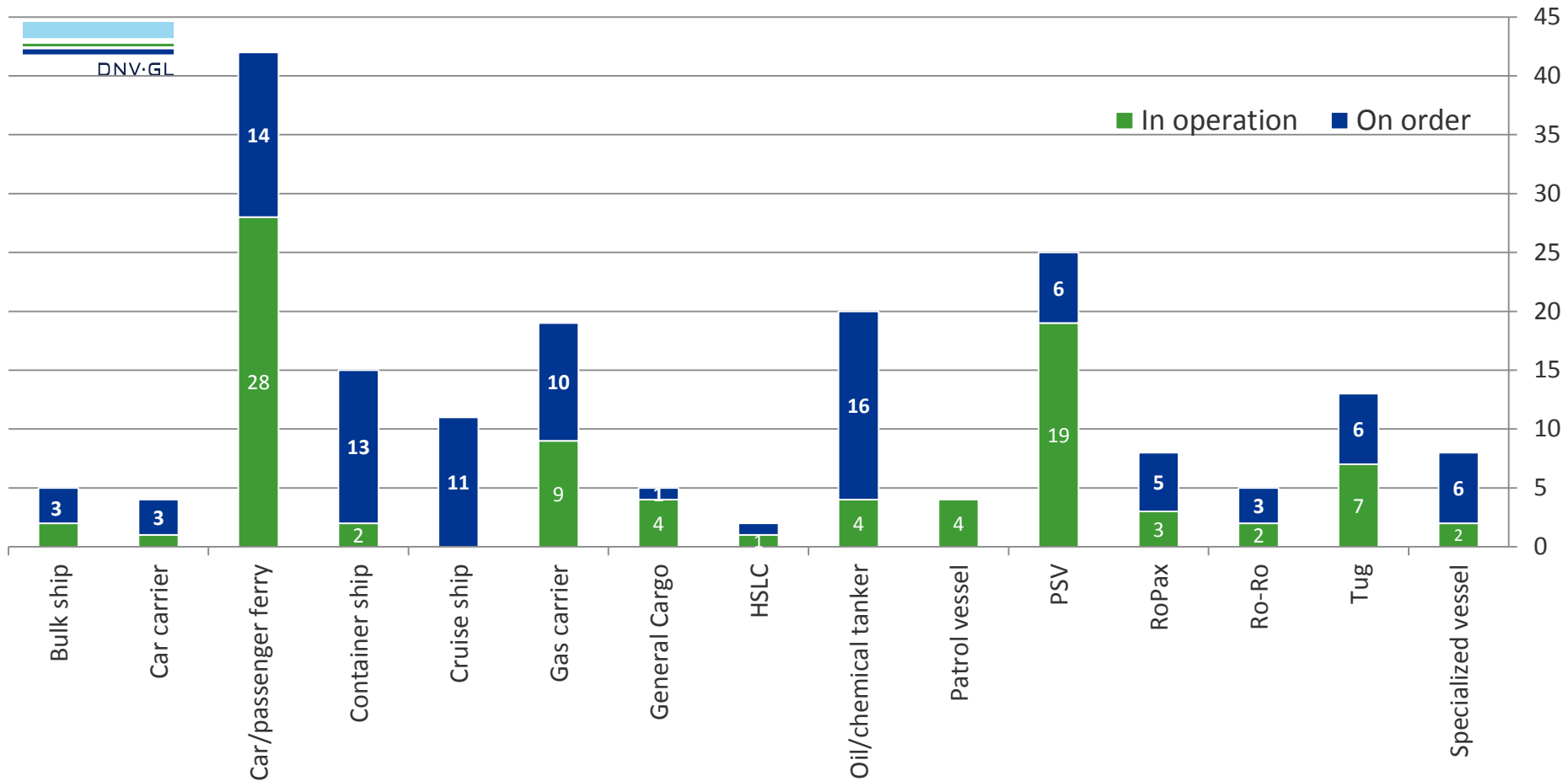
Operating area of the 88 ships in operation



Operating area of the 98 ships in the confirmed orderbook



# LNG is leaving Norwegian niches



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Updated 7 November 2016  
Excluding LNG carriers and inland waterway vessels

# Future demand

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## Forecast methodology

Baseline

LNG demand forecast

*For each segment*

AIS tracks



Ship data

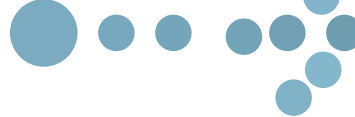


Regional filter



Current energy demand

Shipping growth



Efficiency gains



Future LNG demand

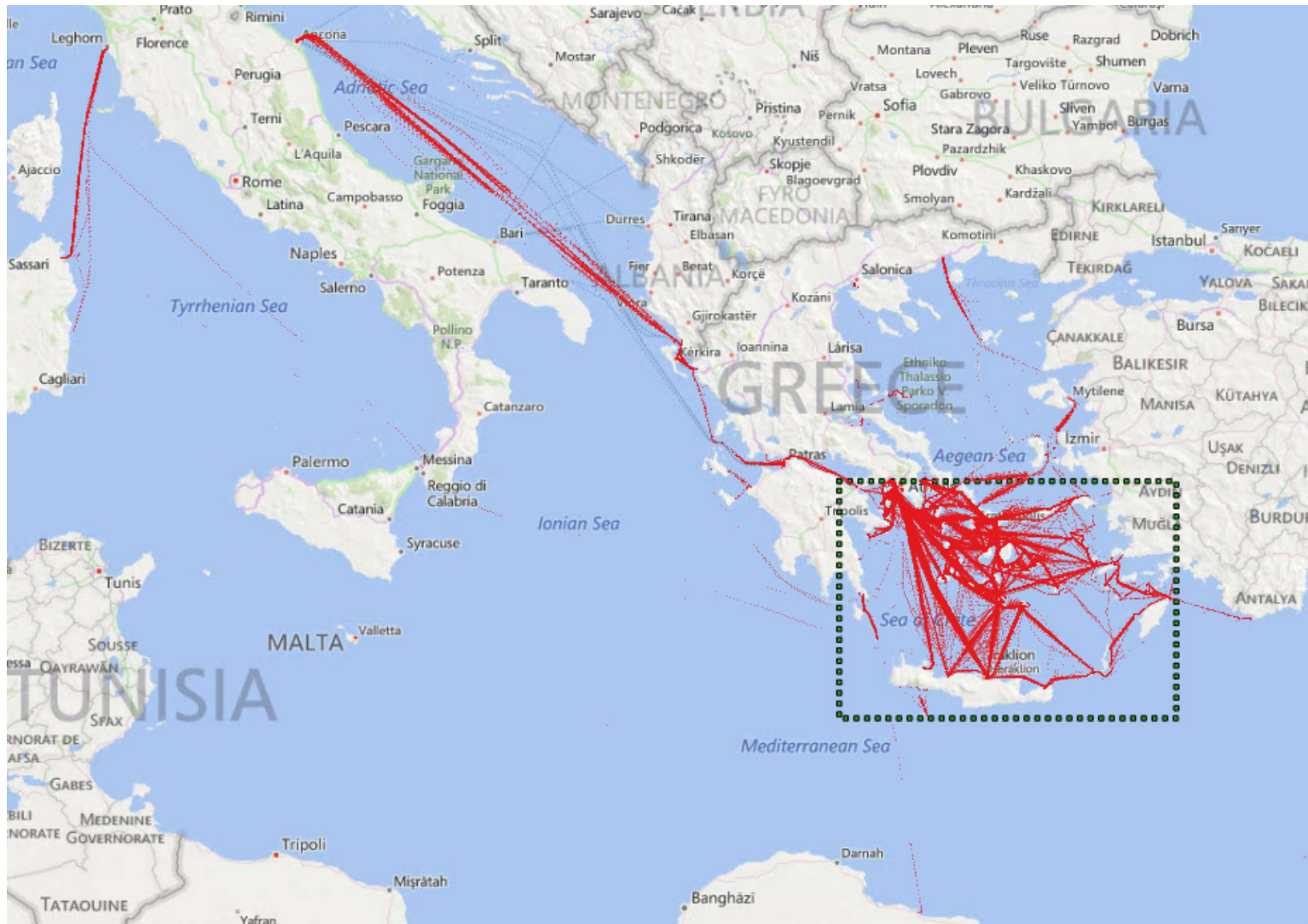
LNG uptake



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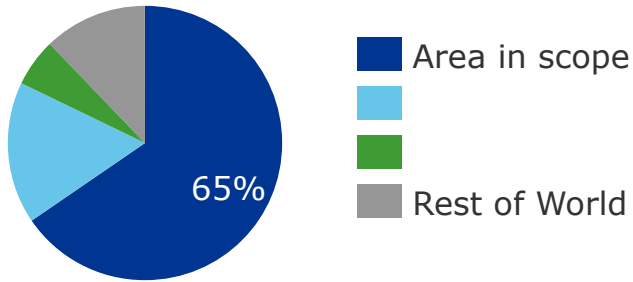
# Ship tracks and selected geography



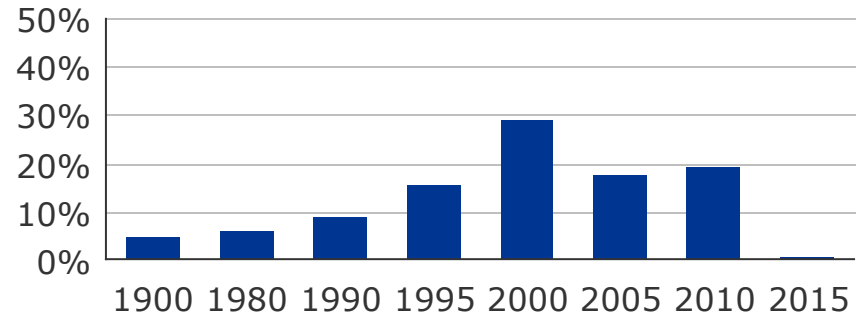
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# Analysis of ship segment

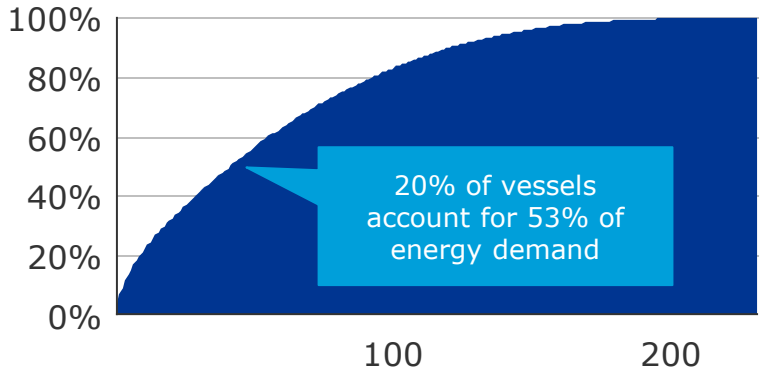
**Total energy demand by area**  
(in %)



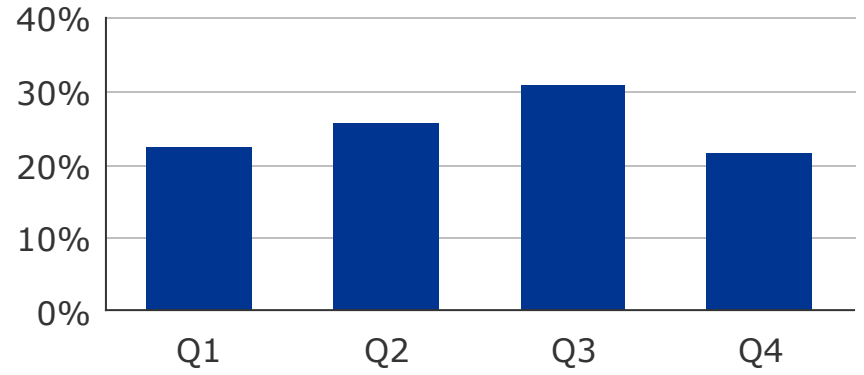
**Relevant energy demand by year built cluster**  
(in %; lowest year in cluster shown)



**Energy demand concentration**  
(in %; vessels sorted by volume)



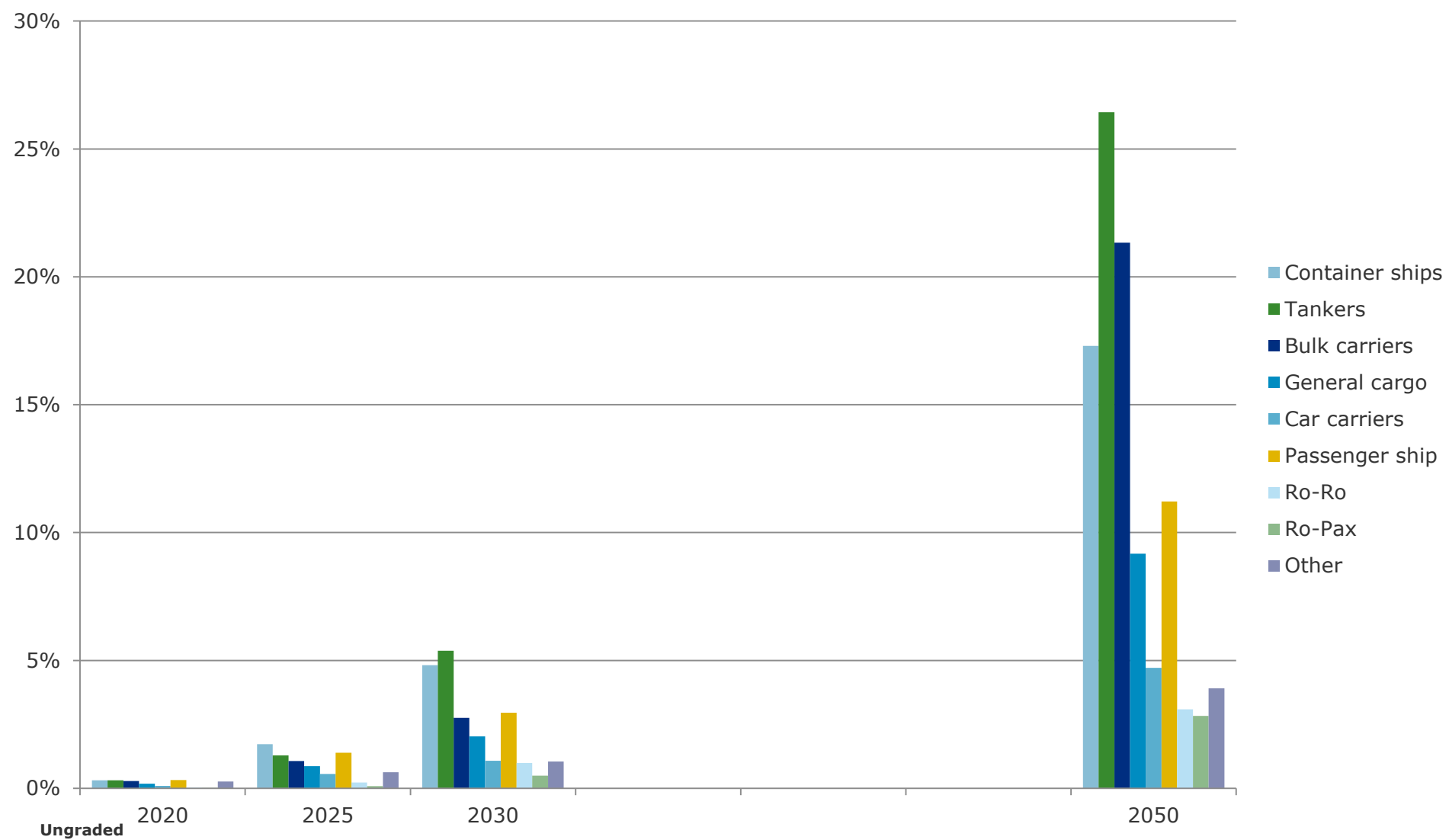
**Seasonality**  
(in %; by quarter)



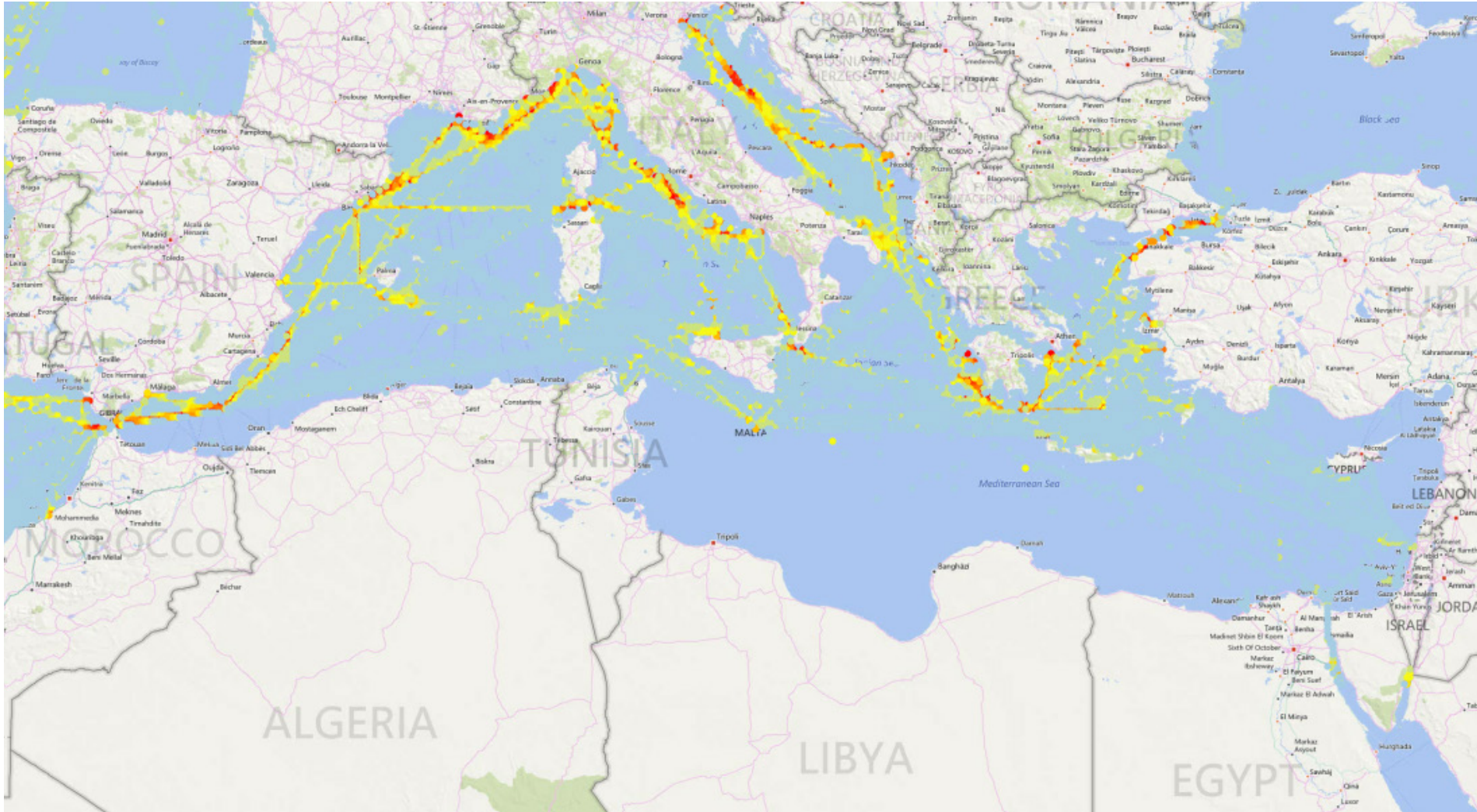
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Source: DNV GL AIS based analysis; IHS

# Ship type segmentation in fuel demand

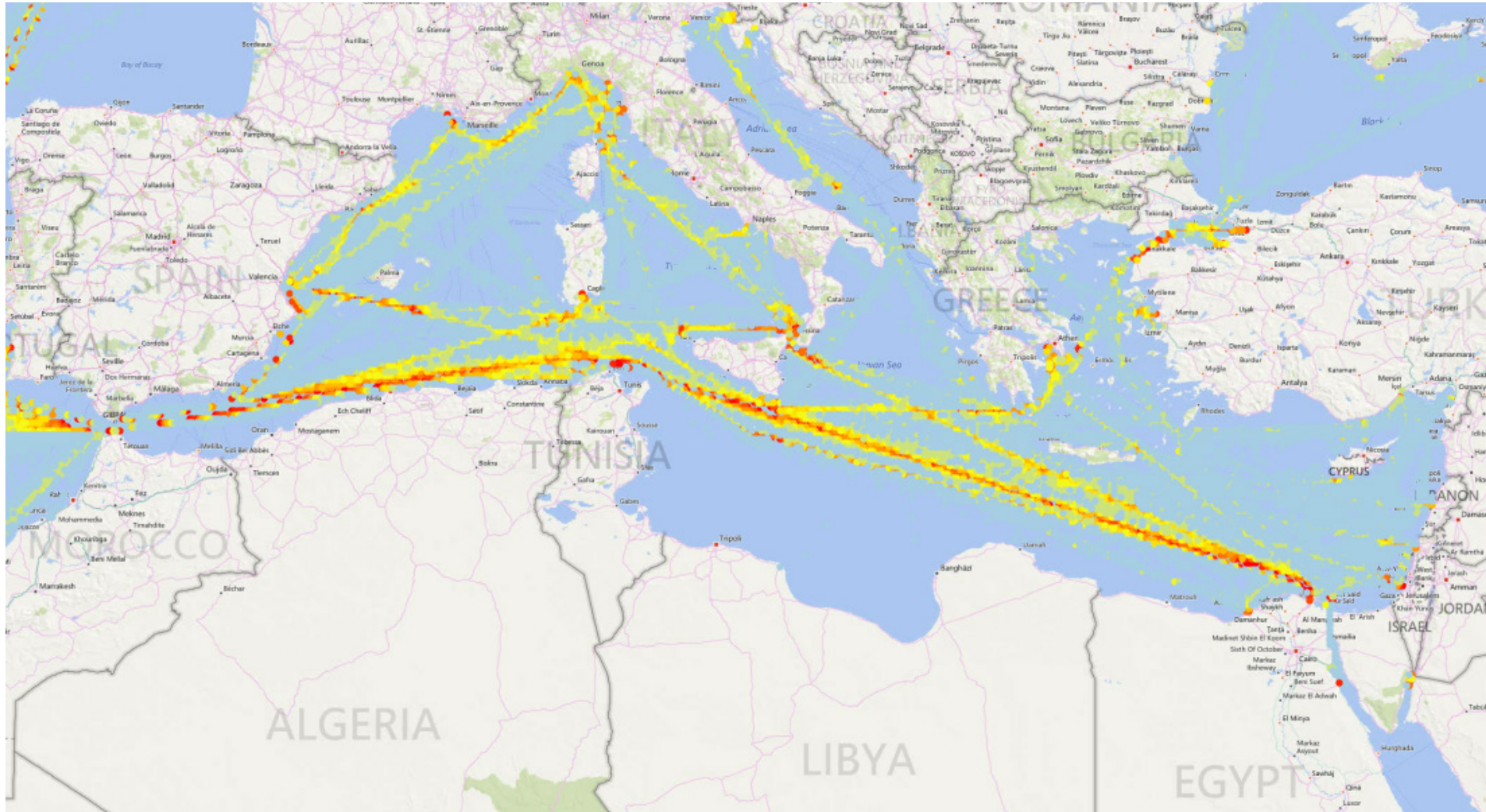


# Traffic density heat map – shiptype A

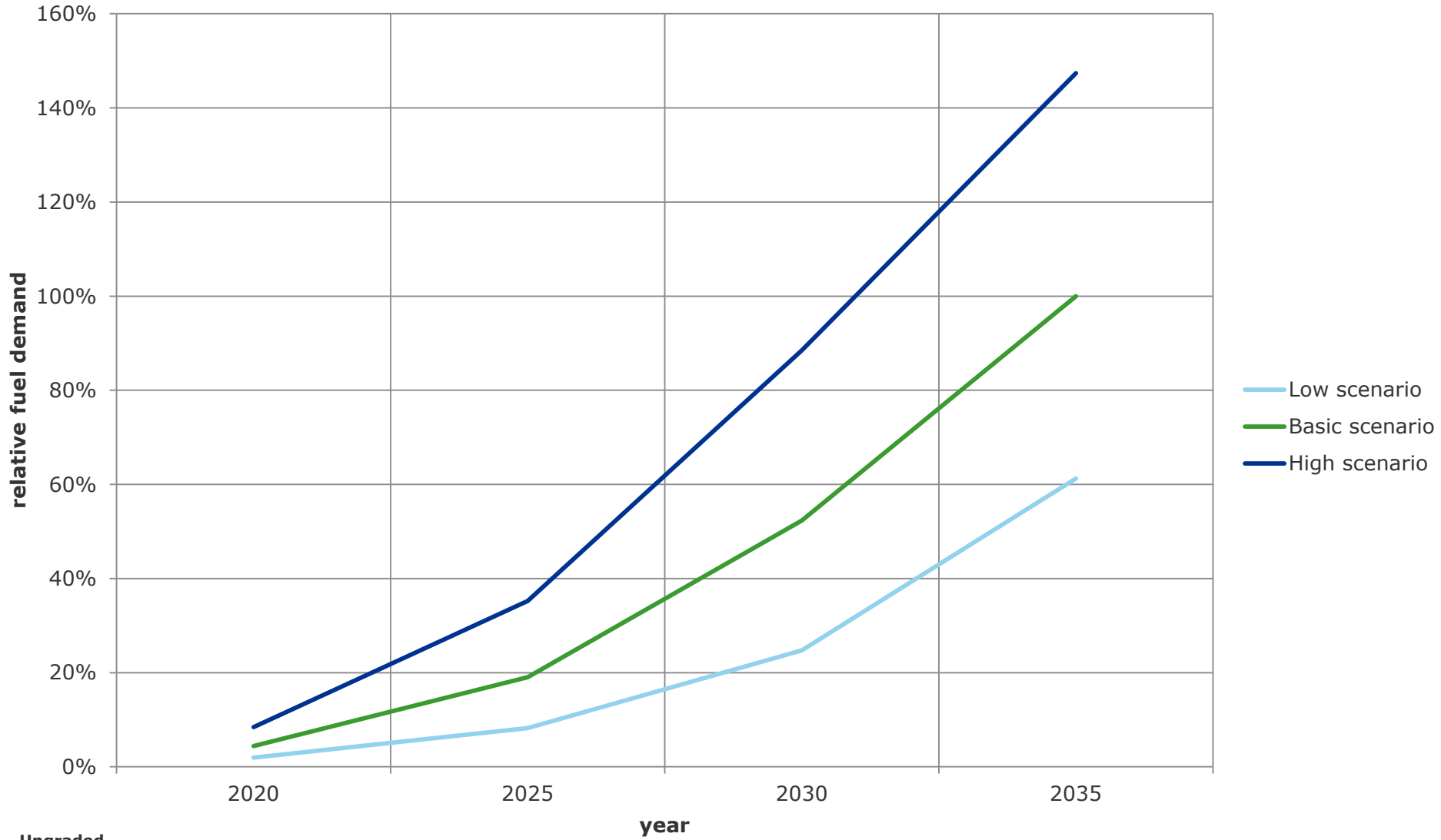




# Traffic density heat map – shiptype B



# Scenario forecast

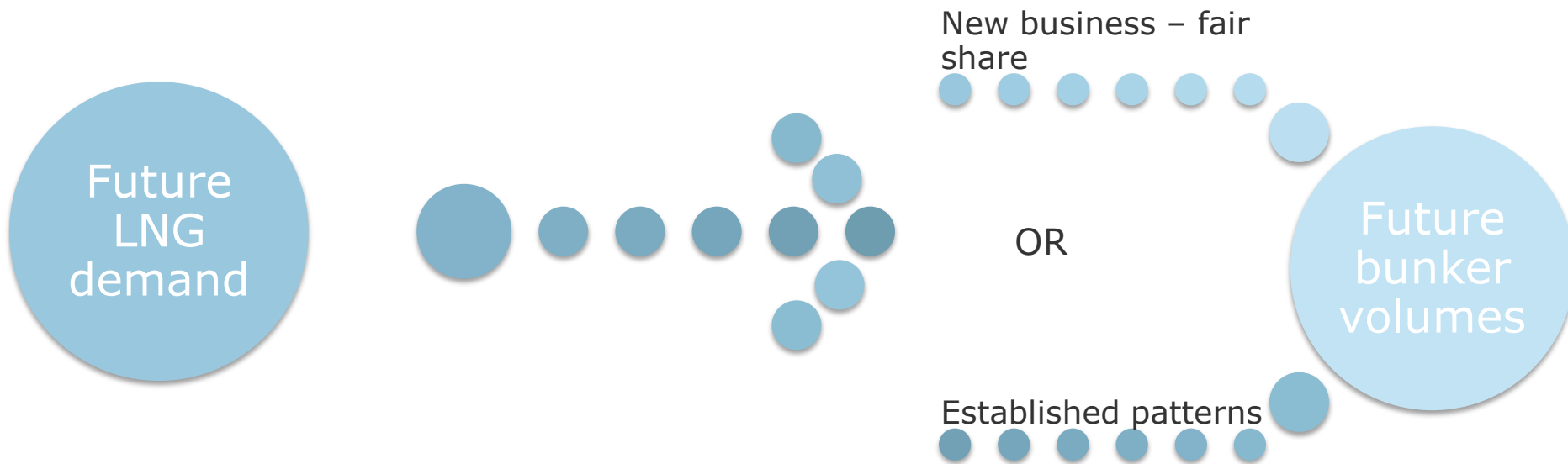


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## Forecast methodology

LNG demand  
forecast

Bunker volume  
forecast



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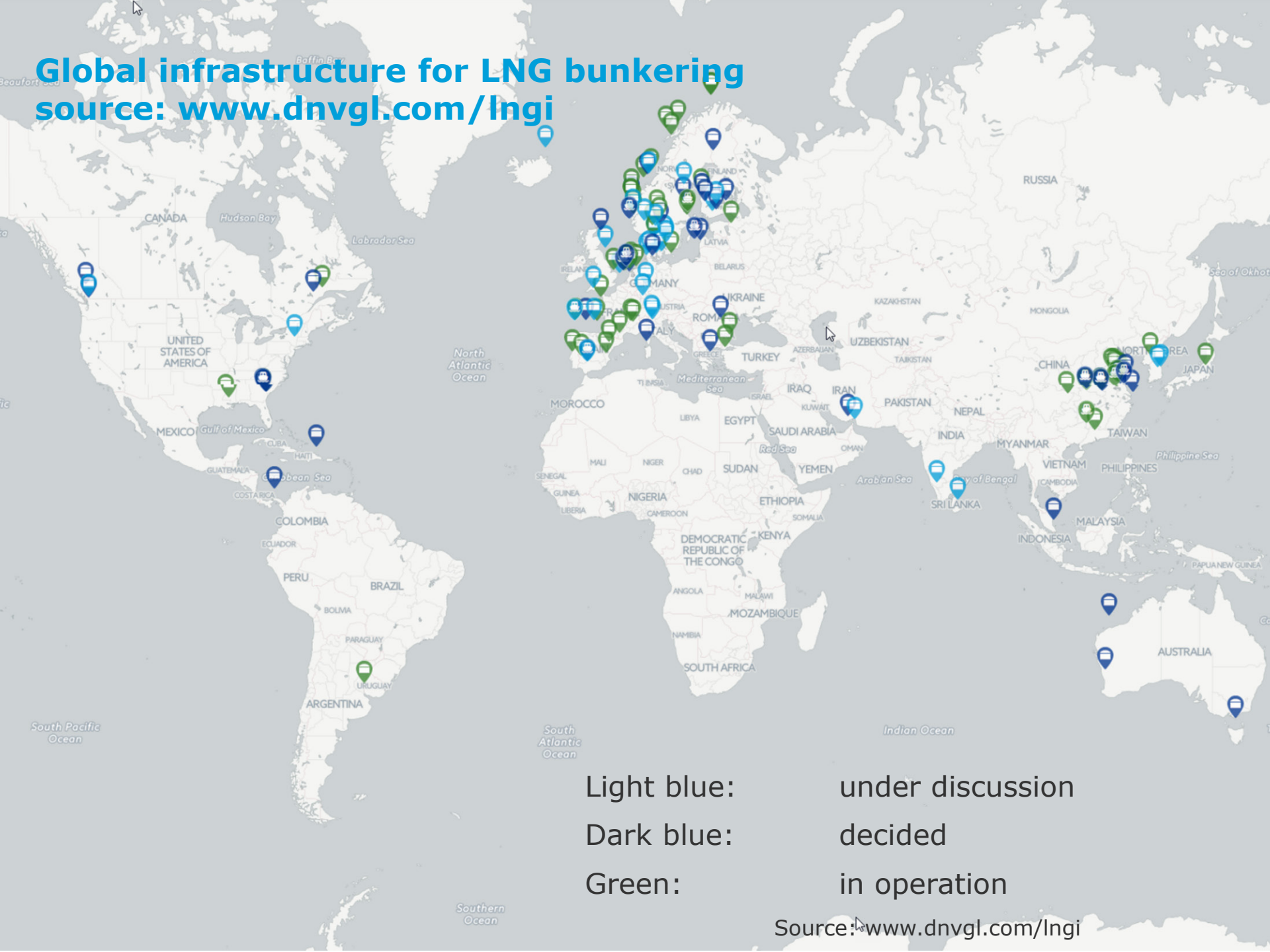
# Infrastructure

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# Global infrastructure for LNG bunkering

source: [www.dnvgl.com/Ingi](http://www.dnvgl.com/Ingi)

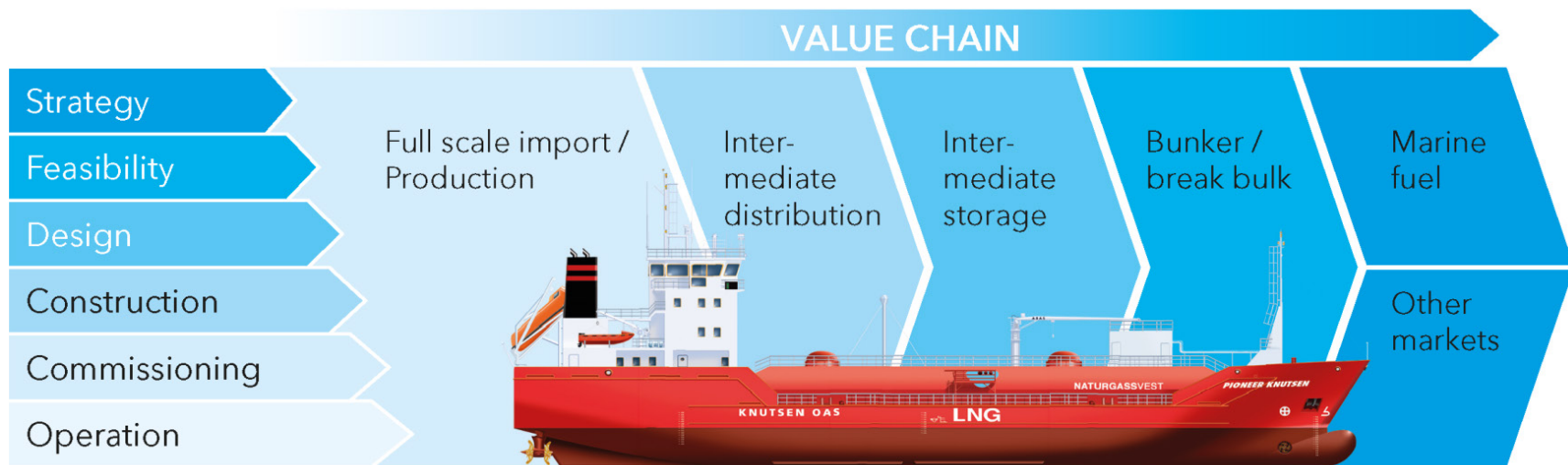


Light blue: under discussion  
Dark blue: decided  
Green: in operation

Source: [www.dnvgl.com/Ingi](http://www.dnvgl.com/Ingi)

# conclusion

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- LNG bunker demand modelling features:
  - When
  - Where
  - Which ship type
  - How much
- As basis for investment decisions for LNG bunker suppliers and LNG supply chain developers
- As basis for rule making decisions, e.g. national policy frameworks

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[www.dnvgl.com](http://www.dnvgl.com)

**SAFER, SMARTER, GREENER**

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