

# A possible roadmap for LNG as fuel in Italy; How to learn from existing experiences in Northern Europe

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Mohamed HOUARI, mohamed.houari@dnv.com  
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# Agenda

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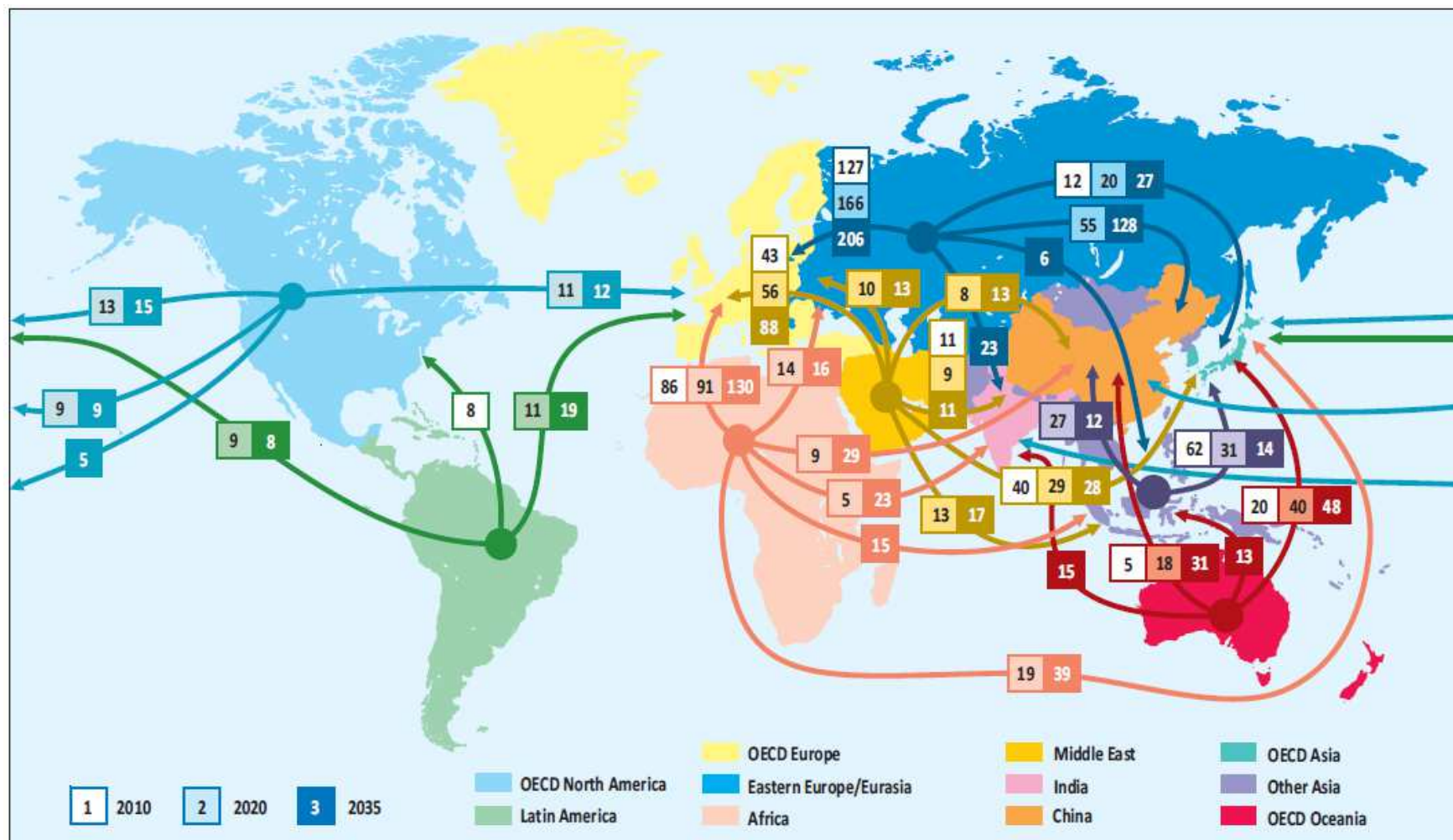
- Global Market Perspective: LNG as fuel development
- EU Plans - Status
- Context in Italy
- The Need for a Roadmap in Italy
- Latest Development in “LNG as Fuel” Arena in Europe
- Our latest contribution

# Latest News : “*DNV GL = One Company*”

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# Global Market Perspective: LNG as fuel Share



This map is without prejudice to the status of or sovereignty over any territory, to the delimitation of international frontiers and boundaries and to the name of any territory, city or area.

# EU plans & Status

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- EU launches clean fuel strategy
- The Clean Power for Transport Package consists of
  - a Communication on a European alternative fuels strategy,
  - a Directive focusing on infrastructure and standards
  - an accompanying document describing an action plan for the development of Liquefied Natural Gas (LNG) in shipping.
  - →The Commission is proposing that LNG refuelling stations be installed in all **139 maritime** and inland ports on the Trans European Core Network by **2020** and respectively 2025
- Priority fields for EU action
  - Infrastructure challenge
  - Common Technical specification
  - Consumer acceptance
  - Technological development
- → Proposal for a Directive of the European Parliament and of the Council on the deployment of alternative fuel infrastructure



# Context in Italy

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- No existing LNG Bunkering station in Italy
- Italian ferries company looks for LNG Fuelled ships
- Business plan for LNG Bunkering station in Messina, Sardinia
- At least, 3 Italian yards could be able to develop LNG fuelled vessels : Fincantieri, Rosetti Marino, Polargas Vanzetti Engineering Group.
- Involvement of Italy in Costa Project
- Development of the gas grid supply in Italy, including projects of FSRU and onshore regasification terminals
- LNG as vehicle fuel: *The strong position of NGVs in Italy, with 760.000 natural gas vehicles (75% of the EU market) is the result of a very active retrofit conversion industry in the 70s and 80s.*

# The need for an LNG as fuel Roadmap for Italy

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What are the drivers for LNG as a fuel

Time  2014 | 2015 | 2016 | ... | 2020

What

How

Todo

# Other Stakeholders → Different roadmaps



LNG bunker station-to-ship

- Which bunkering operations fit your needs?
- What kind of small-scaled LNG distribution fits your needs?
- What are the hazards during bunkering operations?



Truck-to-ship LNG bunker



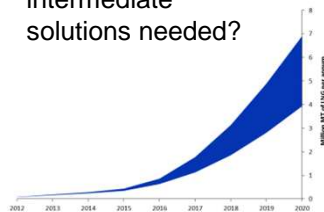
Ship-to-ship LNG bunker



Small LNG carrier at large scaled LNG terminal

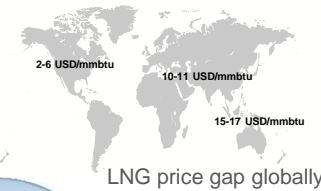
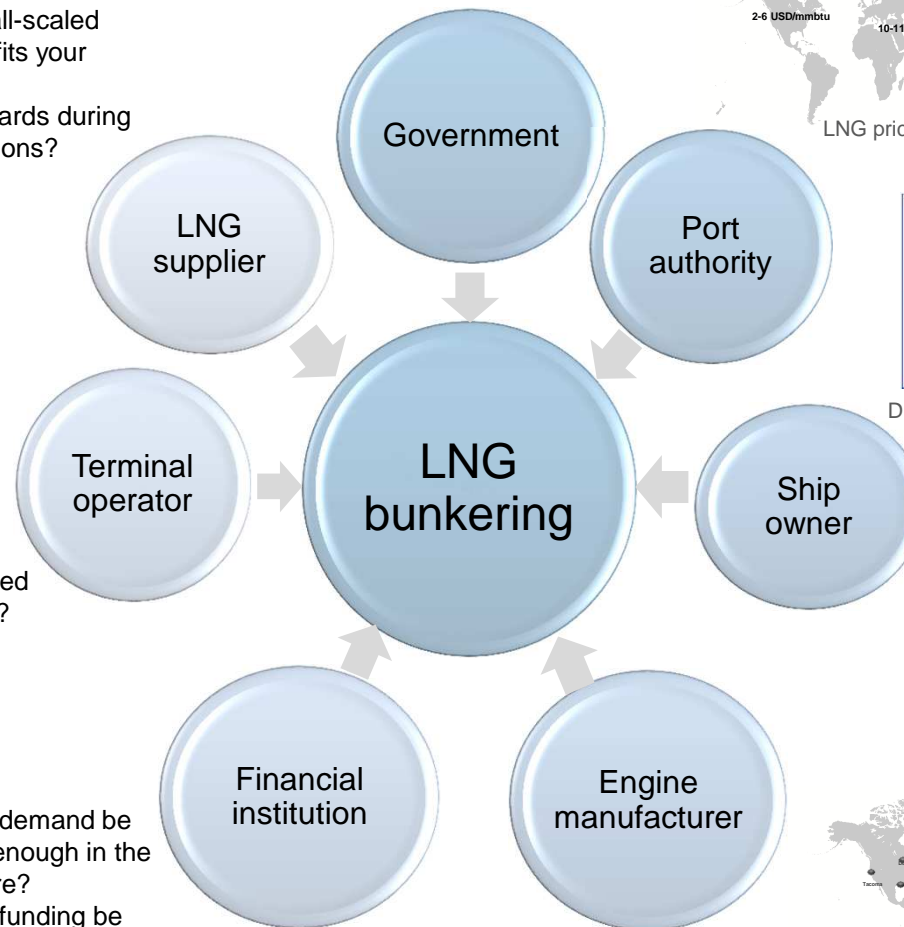
- How to solve situation of supplying LNG from large scaled LNG terminals?
- How to ensure reliability of infrastructure, equipment?
- What type of intermediate solutions needed?

- Will demand be big enough in the future?
- Will funding be available?



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LNG price gap globally

- How to overcome the price gap between LNG & other fuel type?
- What will be the price of LNG in the future?
- What kind of incentives available for the players?



DNV rules & STS bunkering procedure

- Will regulations & standards be ready in time?
- How to convince public that LNG is safe?



Bit Biking retrofit

- How much investment to be made to retrofit?
- What are hazard & risks during ship design & development?
- What is the best strategic investment – newbuild or retrofit?



- Is bunkering facility available outside ECA zones?
- How to identify the right locations for bunkering?





# Latest Development in LNG as Fuel Arena in (Northern) Europe

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- Country level (e.g. Belgium)
  - Flemish Study covering safety, logistical, legal and market aspects (old) and its follow up
  - Vision development for Short Sea Shipping
  - ...
- Organisations and EU level
  - EMSA Study: gap analysis on the regulation/standards
  - EC : Commission decision concerning the adoption of a financing decision for 2013 to finance a preparatory action in the field of mobility and transport (Follow up on EMSA study)
  - ....
- Market information
  - Antwerp Port Authority has appointed Exmar as its strategic partner for LNG bunkering in the Port of Antwerp – future collaboration will include the construction of a bunker vessel in early 2014
  - LNG Bunkering procedure for the Port of Antwerp in development by DNV GL
  - ...

## DNV GL's latest contribution → RP

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- Excellent Safety track record in LNG → Need for standardization
- ISO LNG bunkering guidelines says “what to do” and not necessarily “how do it”
- Development of a DNV GL RP (Recommended Practice)
- Purpose: The purpose of this Recommend Practice (RP) is to provide guidance to the industry to ensure safe operation of LNG Bunkering facilities. This requires guidance within the three main elements for safe development and operations of LNG bunker facilities:
  - Safe design and operation
  - Safety Management System
  - Risk Assessment
- Scope: truck-to-ship, terminal-to-ship and ship-to-ship (as introduced by the “ISO LNG bunkering guidelines”)
- When: in October 2013

# Safeguarding life, property and the environment

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