LNG Bunkering: Market Development & Solutions

Palanga, 10 December 2014
Agenda

1. Introduction to Bomin Linde LNG

2. Experience: the first ever LNG bunker vessel, infrastructure and customers

3. Market Outlook
Bomin Linde LNG is backed by solid and highly committed shareholders

Bomin Linde LNG: global Player with German roots

Key Facts

The Linde Group
- Revenue: 16.7 bn. EUR (2013)
- FTE: 63,500 (2013)
- Over 400 locations on 5 continents
- 130+ years of experience in gases, cryogenics and process engineering

Marquard & Bahls
- Revenue: 17 bn. EUR (2013)
- FTE: 9,280 (2013)
- Over 100 locations on 5 continents
- 60+ years of experience in fuel storage, handling bunkering, and trading oil products

Bomin Linde LNG was founded in 2012 and aims to be the leading supplier of LNG to the marine sector

11/12/2014 Source: Marquard & Bahls, Linde
Linde and Marquard & Bahls (Oiltanking, Mabanaft & Bomin) have a strong global presence

Worldwide 320+ locations: Oiltanking and Linde Industrial Gases

- **Oiltanking** owns and operates 73\(^1\) tank terminals in 23 countries in Europe, North and South America, as well as in the Middle East, India and Asia.

- **Linde Industrial Gases** operates 253 facilities in 84 countries on 6 continents.

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1) Some have recently been sold to Enterprise

11/12/2014 Source: Marquard & Bahls, Linde
Bomin Linde LNG covers the entire value chain and develops the infrastructure for marine LNG bunkering

**Small-Scale LNG Supply Chain**

- **Bomin Linde LNG is covering the entire LNG value chain**
- **What do we deliver**
  - A competitive product
  - A solution that works and meets the highest standards
- "Tailor made solutions" such as a dedicated bunker vessel or a small terminal needed to deliver significant volumes to a customer
- "Economies of scale" are essential
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Bomin Linde LNG is a front runner in the development of the complete marine LNG value chain

**Bomin Linde LNG in Europe**

**Key Facts**

**Stockholm**
- Operational
- World’s first LNG fuelling vessel: SEAGAS

**Fuelling Vessel**
- 2nd fuelling vessel will be able to supply LNG to all possible ship types and tanks

**Hamburg**
- Flagship infrastructure project, under development

**Emden**
- First seagoing vessel in GER, to be supplied early 2015

**Impressions**

11/12/2014 Source: Bomin Linde LNG, AGA, AG EMS
The world’s first LNG bunker vessel "SEAGAS" is unmatched: over 500 ship-to-ship transfers completed

Bunkering operations in Stockholm and Nynäshamn

Comments
- LNG supply: via 20,000 m³ Nynäshamn LNG terminal based near Stockholm (The Linde Group)
- LNG fuelled ferry Viking Grace as lead customer
- Experience: already 500+ safe ship-to-ship bunkering operations
- Fast fuelling operation; finished in less than 45 minutes
- "State of the art" cryogenic technology manufactured by Linde company
Bomin Linde LNG is the exclusive supplier to the first sea-going LNG-fuelled vessel in Germany

Impressions

- Bomin Linde LNG will be the exclusive supplier to Germany’s first marine LNG customer
- Bomin Linde LNG currently developing the LNG fuelling solution and procedures
- Operations starting in the coming winter
- Truck-to-ship fuelling, location: Emden

11/12/2014 Source: Bomin Linde LNG, AG EMS
Bomin Linde LNG has secured a contract for LNG deliveries to the new Heligoland ferry from AG EMS

Germany’s first LNG-fuelled newbuilt ferry

Comments

- Bomin Linde LNG has secured its second contract with AG EMS
- Newbuilt ferry is operated by Reederei Cassen Eils, a subsidiary of AG EMS
- Heligoland ferry is en-route between city of Cuxhaven and the North Sea island of Heligoland – regular departures from port of Hamburg planned
- Operations starting in Q2 2015
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LNG spot market development

Supply/Demand Balance is softening.

Japan has announced to have reached peak LNG demand and will rely more on coal power production in future.

Restart of Japanese nukes could enhance the current trend.

LNG Far East spot prices [$/mmBtu]

11/12/2014 Source: Reuters, METI Japan, Bomin Linde LNG
Re-loading from North West Europe less attractive

Netback NWE – Far East [EUR/MWh]

Comments

- Attractiveness for re-loading from North West Europe to Far East has decreased significantly on the back of lower Far East spot prices as well as low oil prices filtering into the long term contracts.

11/12/2014 Source: Reuters, METI Japan, Bomin Linde LNG
The new wave of LNG: US and Australian LNG Export Projects

LNG volumes to come online 2014–2018 [mtpa]

- 7 projects in Australia are under construction and due to come online 2014-2016
- In total, Australia will add about 60 mtpa in the coming three years
- The US with the Sabine Pass project will contribute another 18 mtpa in 2016 and 2017
- Advanced US projects like Cove Point, Freeport and Cameron will add a very significant amount of additional capacity

What will happen to the market once the first projects go live?

Source: Reuters, Bomin Linde LNG
LNG as a ship fuel: it’s all about the value proposition
Thank you for your attention