



The current business context and future role of LNG in Europe

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Agenda

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Current situation LNG market

2



The dynamic business context of LNG

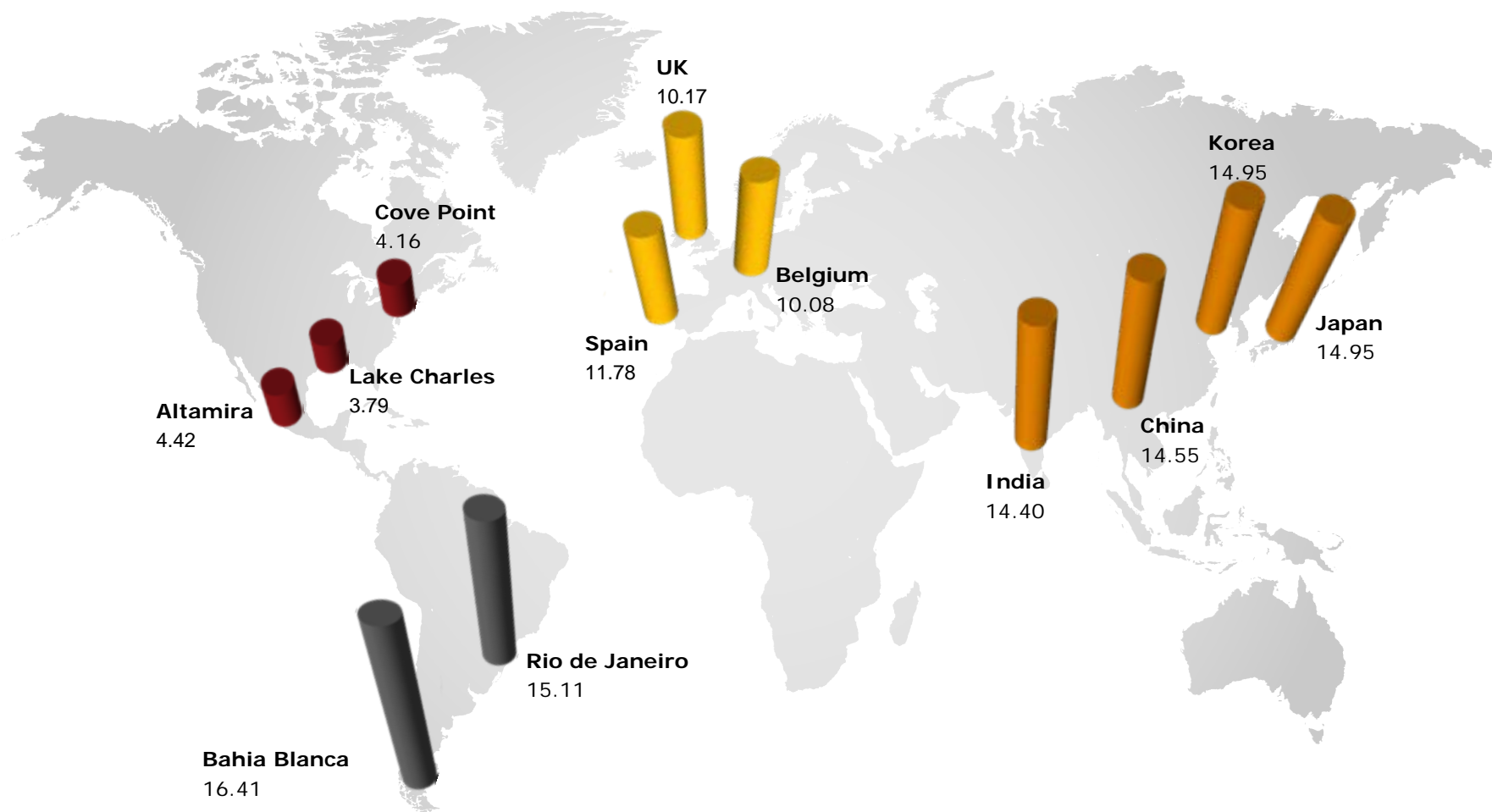
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Exploring the future for LNG in NW Europe

Dynamism in gas price development

World LNG Estimated May 2013 Landed Prices (USD)



LNG business environment: dynamism is a characteristic (1)



Past

- Diversification and security of supply is key concern
- Few years ago: fierce competition for terminals: Eemshaven, Liongas,

LNG business environment: dynamism is a characteristic (2)



Present

- Fukushima: Japan LNG prices up
- shale gas forces cheap coal towards European power generation
- surplus subsidized sustainable power Germany puts pressure on power price
- economic situation in Europe

Past

- Diversification and security of supply is key concern
- Fierce competition for terminals: Eemshaven, Liongas,

LNG business environment: dynamism is a characteristic (3)

Future

- effects of liquefaction projects all over the world
- uncertainty
- dynamism
- and... new markets!

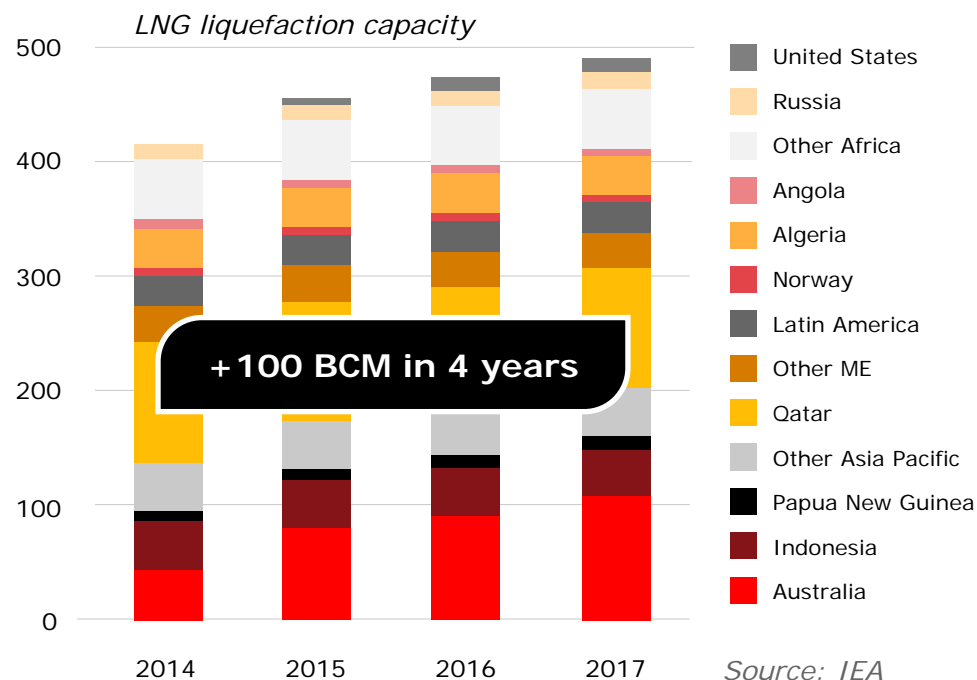
Present

- Fukushima: Japan LNG price
- shale gas forces cheap coal
- surplus subsidized sustainable
- Economic situation in Europe

Past

- Diversification and security
- Fierce competition for termi

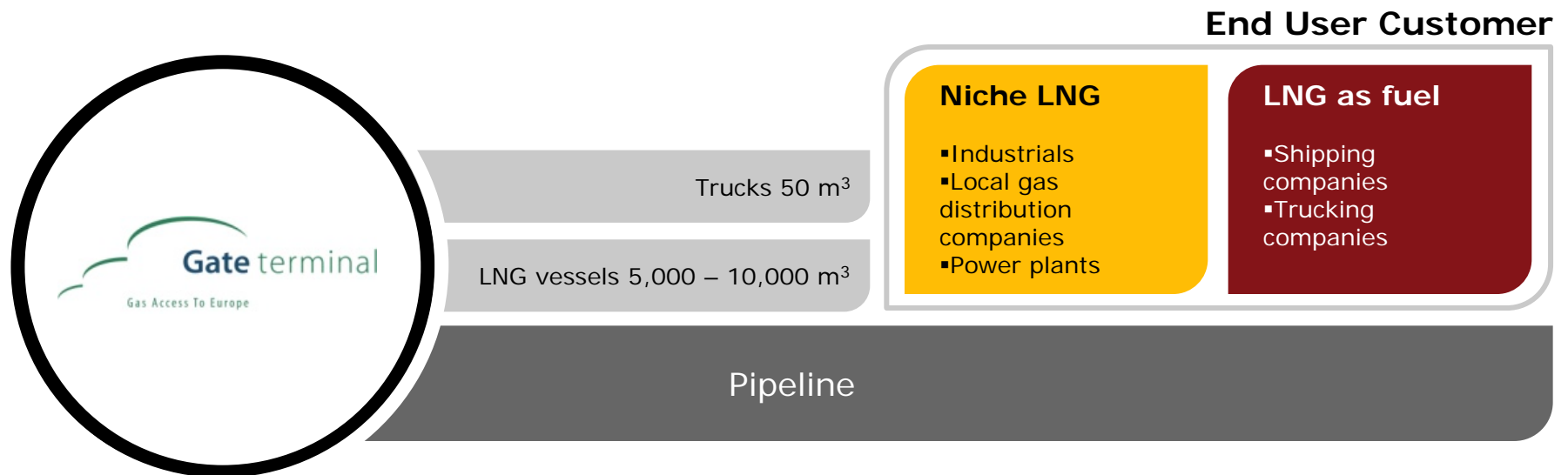
25% liquefaction capacity increase



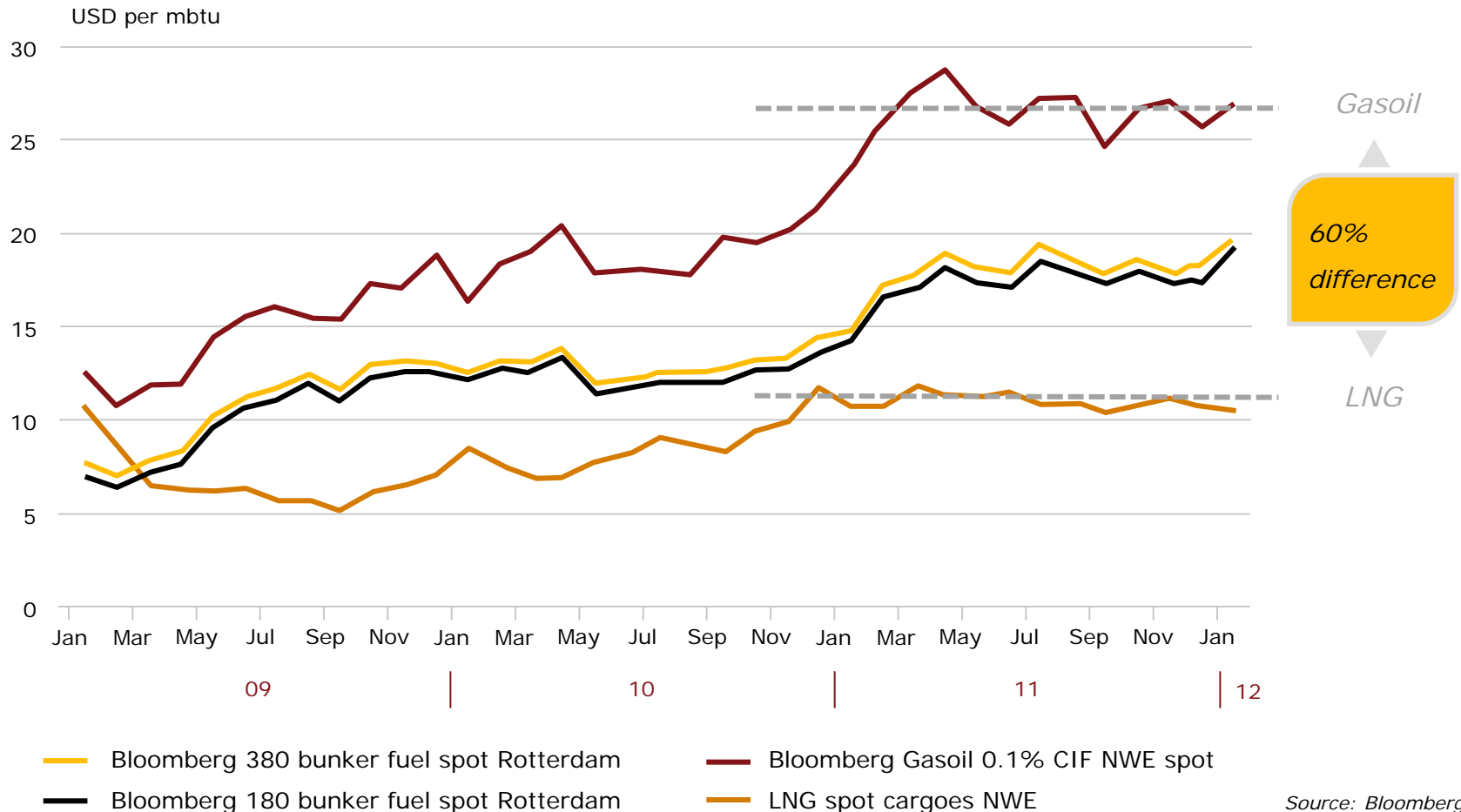
- Will impact current supply shortage
- Shift from Middle East to Australia enlarges availability of LNG for Europe

LNG, the next step...

- Challenging – but high potential
- Diesel market Europe: 200 bcm gas equivalent
- Bunker market: 50 bcm gas equivalent

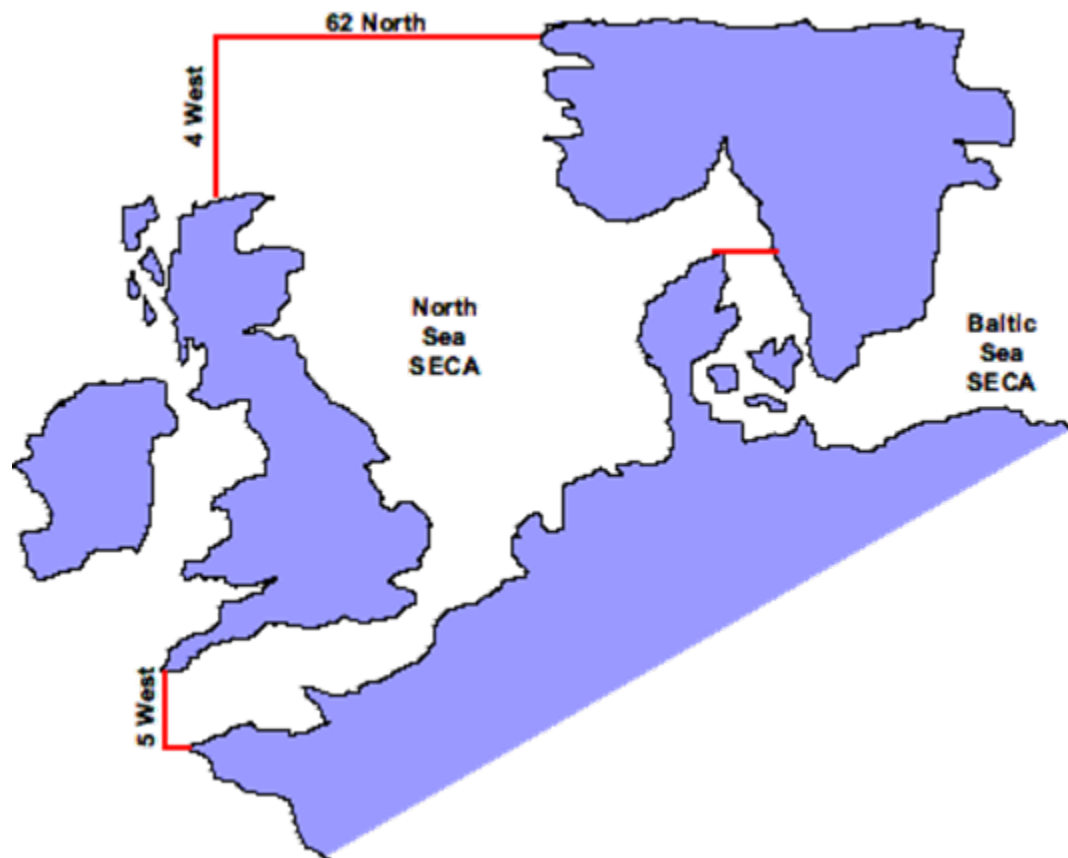


Market for road and shipping fuels provides opportunities for sound LNG business: cleaner and cheaper

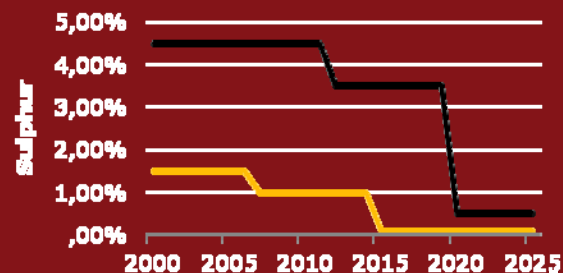


Source: Bloomberg

Sulphur Emission Control Area: emerging market for LNG in North-West Europe



Sulphur limits for shipping fuels



Binding legal obligations:

- for all marine fuels used
- by all ships in the SECA area
- as of 1/1/2015
- International Maritime Organization (MARPOL Treaty, Annex VI)
- European Union (Sulphur Directive 2012/33/EU)

The power of LNG as an alternative fuel

Three solutions are available to meet SECA requirements:

Use 0,1% sulphur fuel (diesel)

- No modifications required
- High operational (fuel) cost
- Will significantly increase diesel demand & price

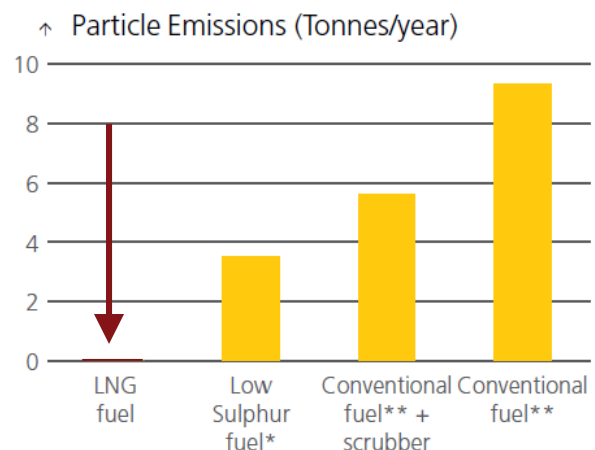
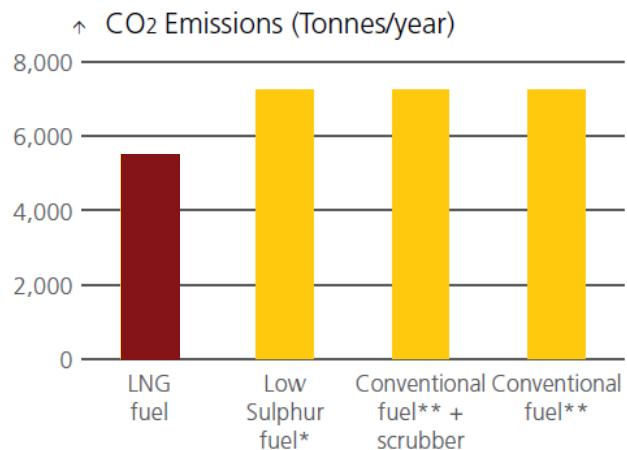
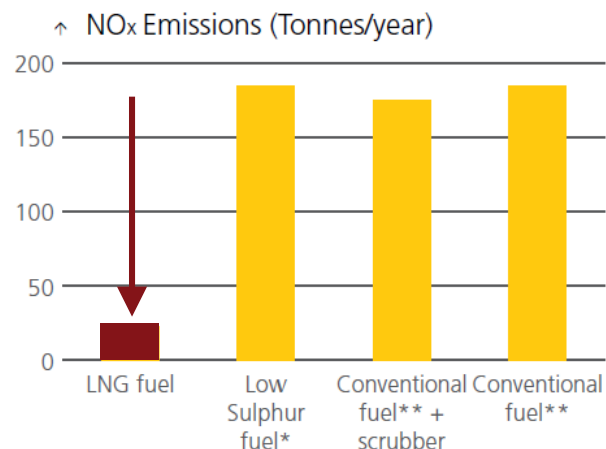
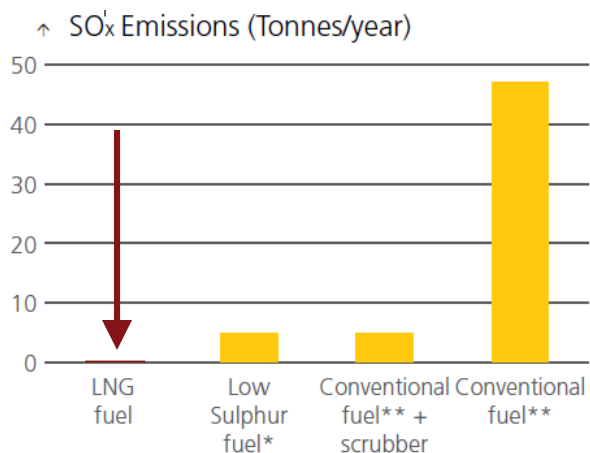
Use > 0,1% sulphur fuel (IFO/HFO) with scrubber

- Low cost fuel
- Scrubber investment needed
- Technology not proven
- Waste water

Switch to LNG

- Low cost fuel
- Technology proven
- Meets future NOx criteria as well
- Switching investment needed
- LNG market new for participants

A Revolution in Shipping: a Grand Slam for LNG



* Low sulphur fuel contains maximum 0.1% sulphur

** Conventional fuel as per 1 July 2010, containing maximum 1% sulphur

LNG for vessels and trucks is part of Dutch 'green deal policy'



- Dutch Green Deal:
 - companies take initiatives
 - climate and environment objectives
 - cleaner transport sector: license to grow
 - target: at least 50 barges, 50 sea-going vessels and 500 trucks on LNG by 2015.

To conclude

- Current situation of LNG in Europe is part of a bigger picture of LNG dynamism
- New markets ahead: small scale definitely emerging