How LNG Promises to Change Natural Gas Markets

...and how the markets are already changing LNG!

LNG Opportunities Seminar,
DnB markets and the Canadian Embassy

Oslo

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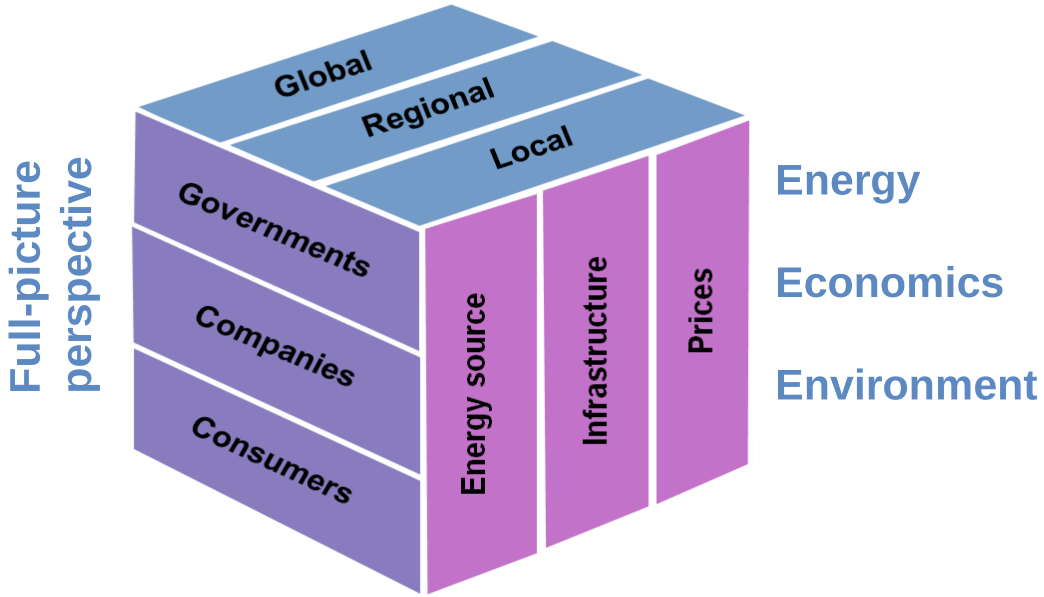
Sund Energy helps navigate into the energy future…



Learning between countries, industries, energies, technologies and more…

In the global LNG and gas arena, clients include:

- Sellers
- Buyers
- Investors
- Governments

Typical assistance:

- Strategy and business model
- Market analysis
- Gas and LNG contract negotiations
- Partner search
- …and more

…by understanding the full picture of stakeholders

Impact of more LNG on the market – more like oil!

Commoditising – all gas is gas – nationality less important

Equalising prices – spare LNG can go anywhere

- Low cost transport cost versus arbitrage opportunities
- More than 30% of deliveries now NOT on LTCs

Lithuanian FSRU

Cheaper security of supply

- Easier to build re-gas terminals (or hire FSRU) for backup than rely on new pipelines – optionality

Established truths die – several!

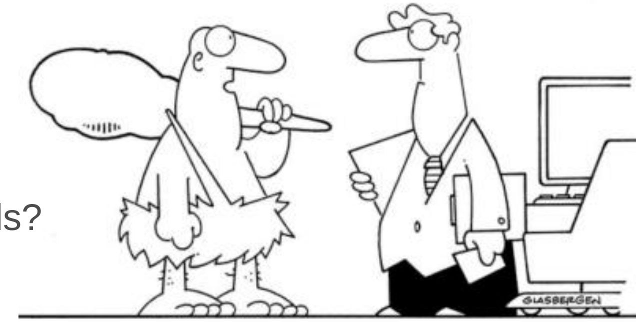
- “Everyone gets rich in Japan”/“US wants all the LNG we can make”
- Value of optionality in uncertain times – infrastructure and sales

All fearless developers forget to look around – oversupply

- When will they ever learn?

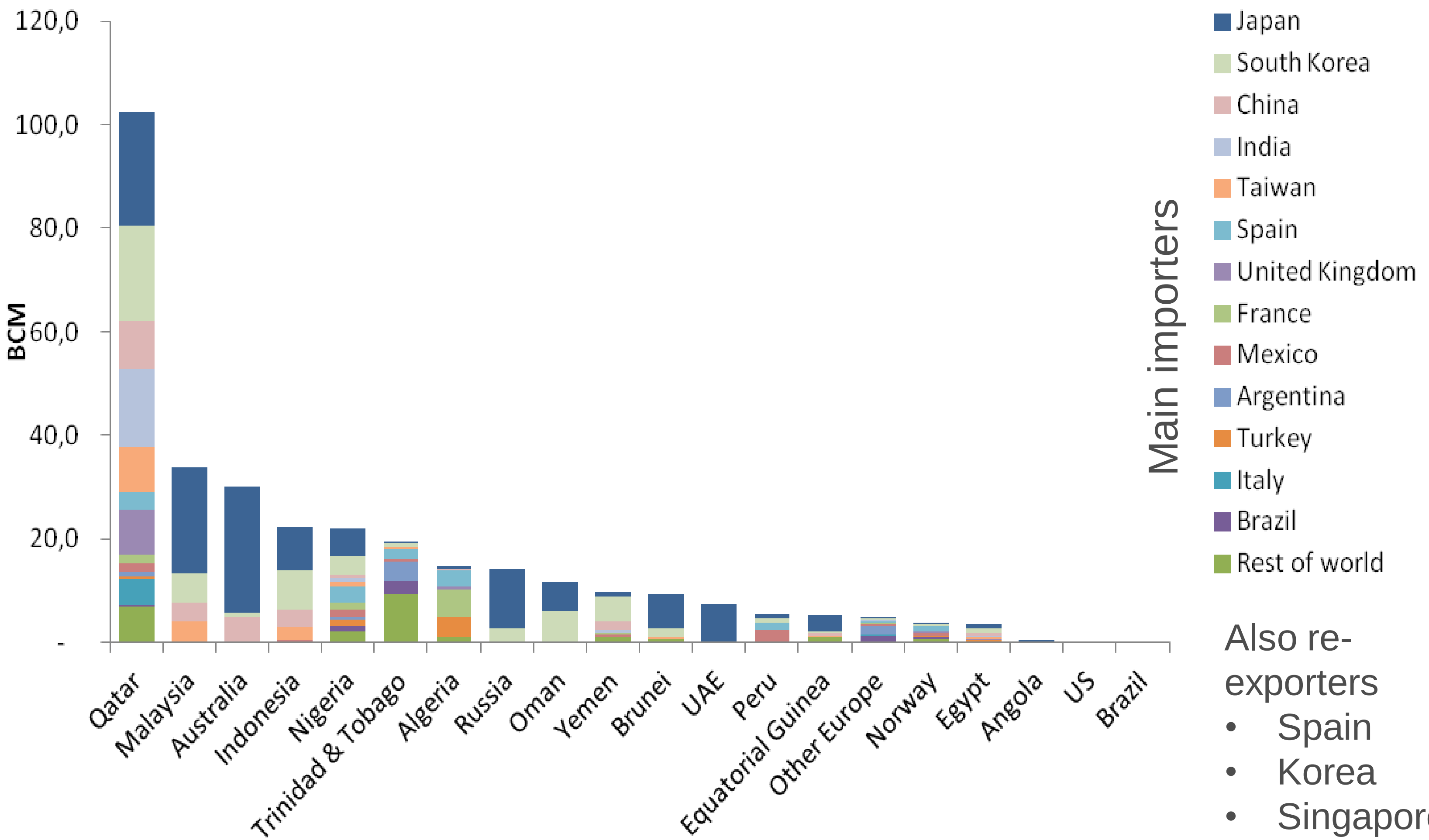
What next?

- Merit order elasticity?
  - Delay projects, optimise flows, turn off completely?
- OR find new demand, risk management or business models?
  - New use for gas when LNG is available: transportation



“My financial strategy? Hope for the best, but plan for the worst.”

LNG 2013: More sellers, more buyers – same demand

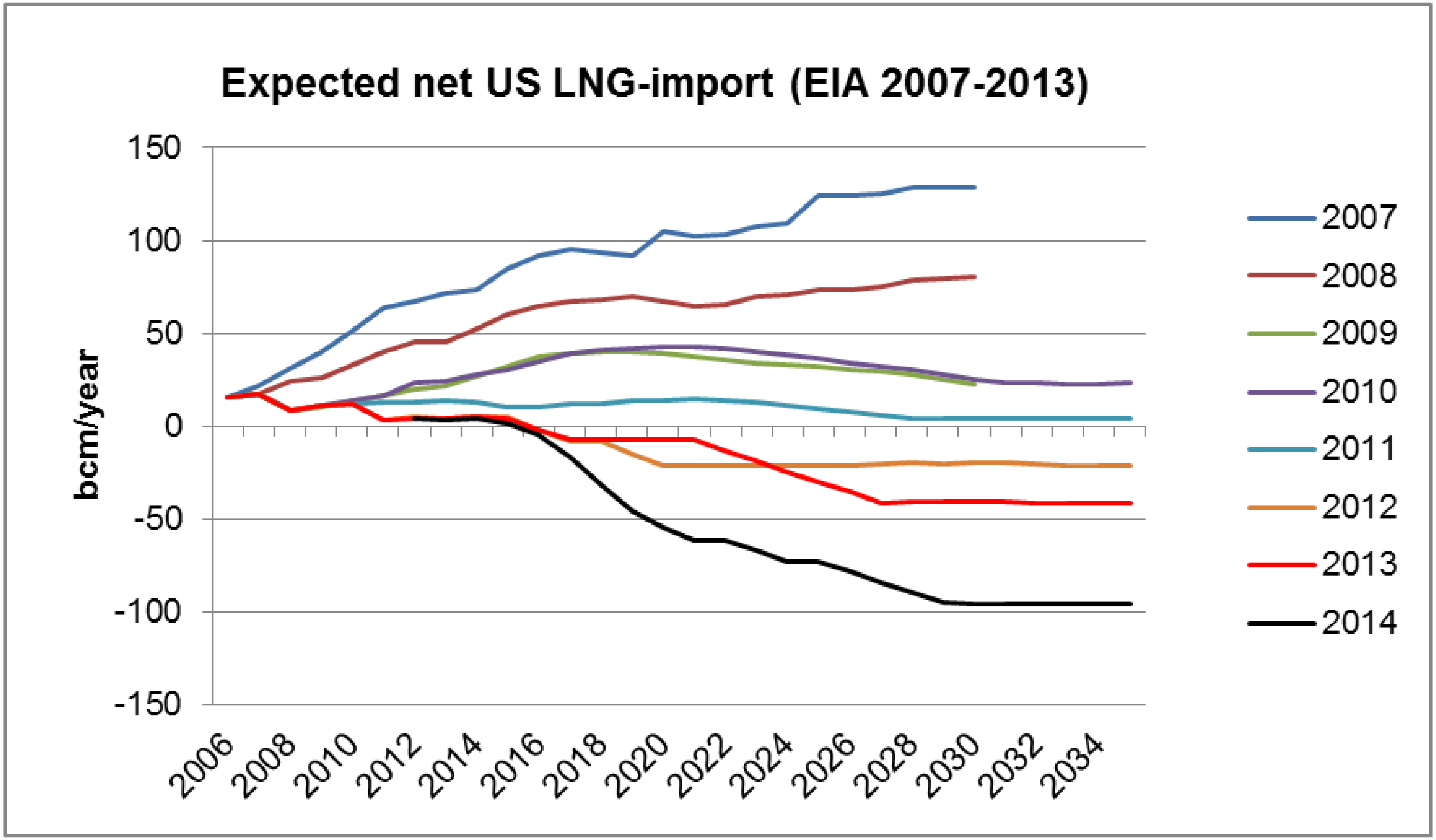


Also re-exporters

- Spain
- Korea
- Singapore

Source: Sund Energy with data from BP Statistical Review, 2014

Much of the existing capacity was built for the US



Global LNG production set to increase further

More planned capacity than expected demand for LNG

- New projects will compete for demand
- Price only differentiator?

Some decisions based on history

- Experience with high margins

Long lead times and strong minds

- Little interest in weak signals

Meanwhile demand stagnates

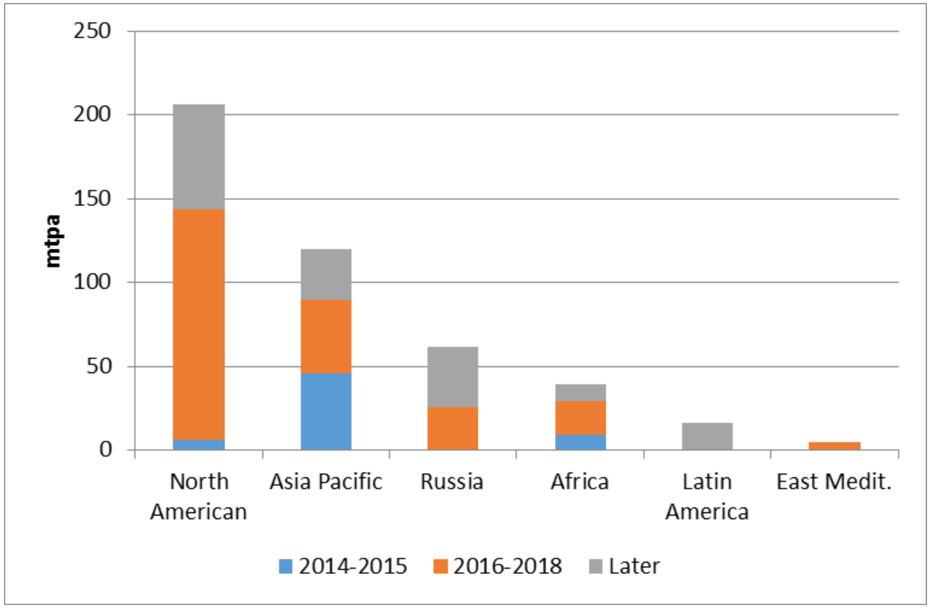
- Recession, climate, price

“But my project is better!”

- Perhaps…
- Price still matters most,
  not only cost

Much new liquefaction capacity expected

Current liquefaction capacity at around 300 mtpa



Source: Sund Energy with data from Interfax

From seller's to buyer's market – then what?

LNG a last resort for producers and "a luxury" for buyers

- LNG plants were seen as very expensive, and there was a "queue" of projects (stranded gas to stranded markets – few skilled builders)
  - LNG was seen as difficult, dangerous and "luxurious", only for the few

Traditional shortage helped sellers in pricing high

- Long term contracts, premium prices, especially to Japan
  - Limit to how much each project could sell to Asia (not large enough)
- Diverse supply portfolio (and growing own ownership)
  - Security of supply and consensus on pricing (among sellers)

Overflow of new supply options has changed the tone somewhat

- Why should we pay more than others?
  - Why should we pay more for projects that are overrun?
- Learning from new offers in negotiations with others
  - More comfortable with hub prices in other markets now
- Selling to optimise own portfolios – mainly Europe, but also Asia

Asian optimism has moved from Japan to China

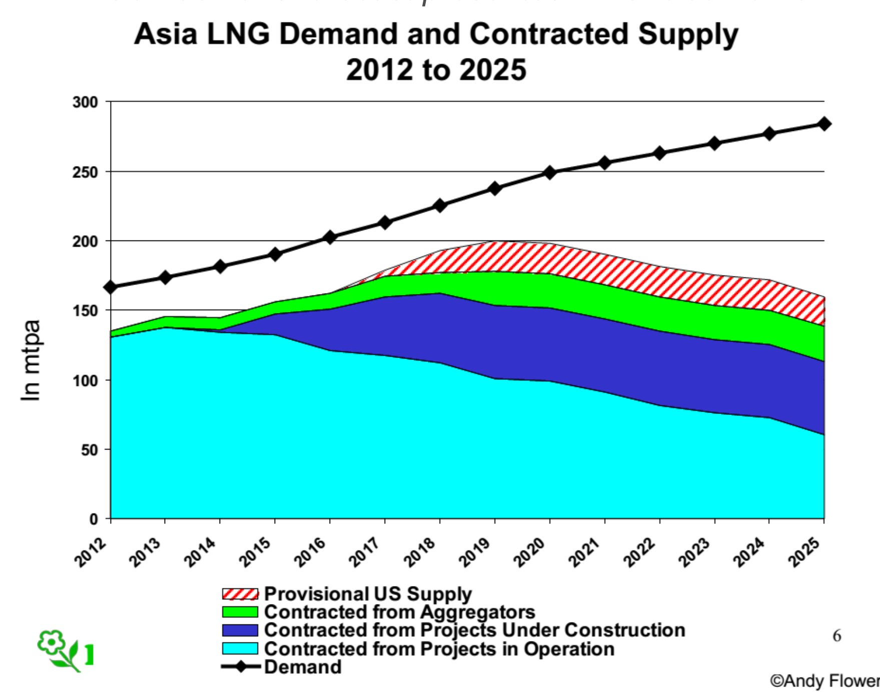
Large and growing economy – already importing LNG

- Experts were encouraging more capacity for the market as late as last year

Now forecasts seem a bit more sobering

- UBS China reduced forecast gas demand by 14%
  - Now 285 mtpa for 2020
- PetroChina 238 mtpa in 2020

Asian demand forecast presented in 2013 at Flame



Other factors

- Pipeline imports
- Domestic production
- Renewables

Demand is more difficult to forecast than liquefaction!

In this age of uncertainty, investment decisions change

This could be an advantage for LNG – much more flexible!

- Assets that could be used for several markets – better than pipelines
  - Even added value of floating – FLNG and FSRU
- Easier to reach smaller markets – by smaller ships and trucks
  - Where there will never be pipelines
- Able to meet unexpected peak demand or serve as backup

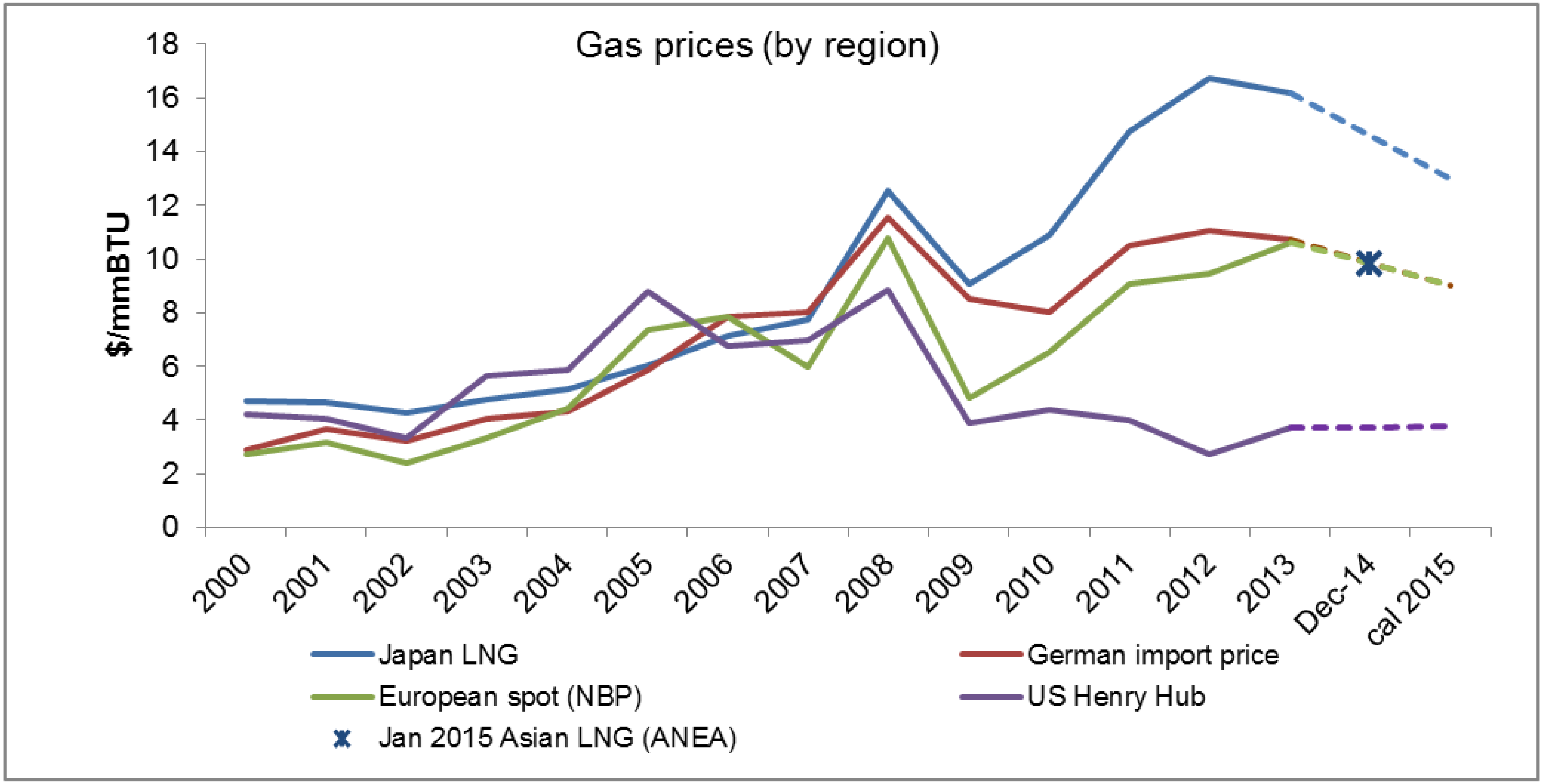
Investing in pipelines much more difficult with uncertain demand

- Pipelines have always been the first choice of developers
  - Large economies of scale – easy with steady growth
- Lower demand brings risk of stranded assets – more so with pipelines
  - This risk is not acceptable to long term infrastructure investors
- LNG appears more attractive for mobility and flexibility
  - This requires different risk management and business model
  - The old “pipes on ships”/long term contracts not flexible enough

Global gas prices diverged since 2008 – what next?

Shale gas in the USA, recession in Europe, Fukushima among reasons

- But LNG acts as "glue" in the market and will bring them closer again



Source: Sund Energy with data from BP Statistical Review ICAP

Time to look at market payability, not only cost?

«We do business as we always have»

- Traditional approach is easier:
  - Sell to large importer for sale to grid, industry and power sector

High value segment has been growing lately

- Using LNG to replace oil – new market and better alternative prices

«We don’t have time to deal with little things»

- Volume still better than value?
- Prices in Japan have fallen from the perceived guarantee of $16-18
  - More realistic price for new deliveries $10-12
- Meanwhile LNG competing with oil to end users double that
  - Some already capturing this segment

China deliberately keeping oil demand down

- Gas and other fuels preferred for growth to reduce pressure on oil price

This strategy seems to be working (with US/Can production)

- Last week's oil price fall was wake-up call for many – signs in LNG, too!

New LNG pricing environment – how to max netback…

The Qataris started selling LNG at market prices to UK

- "Gas is gas" – sold at market prices, not cost plus – more could come

The US has introduced cost plus gas: Henry Hub + costs

- Cheniere went public with their pricing formula early from Sabine Pass:
  - 115% of Henry Hub monthly price PLUS $2.25 to $3.00 = e.g. $7.00 / MMBtu ex terminal
  - Plus shipping to Europe at around $1.25 currently = e.g. $8.25 / MMBtu
- Unusually transparent for the gas industry – and tempting for many
  - Some uncertainty to future of "the world's cheapest traded gas prices"

Japan and other Asian countries used to pay a premium on LNG

- Now inundated by sellers from new projects
  - US, Australia, Canada – Tanzania and Mozambique next?
- More oversupply gives lower prices on new deals
  - Currently lower than LNG to Europe!

Competing with oil is better than with coal – even at $60 Brent!

…cut costs or simply turn off?

Optimising portfolios (both buyers and sellers) expected

- Not only for price, increasingly set in market
- Also logistics – more swaps, regional trades – again!

Both Canada and US could see different preferences soon

- West coast mainly for Asia, East coast mainly for Europe?
  - Would make sense if prices equalise!
- Not one owner, large diversity, even within projects
  - Large companies will optimise own, global portfolios
  - Smaller developers will just want cash, any cash…

Will any LNG projects turn down or off?

- If so, which? What's in it for them?

Much traditional merit order/supply cost thinking when building

- But in reverse: The most expensive chain «should» turn down first
  - Reluctance to change plans - arguing sunk costs and no market power

How long will banks and investors accept this thinking?

New logistical solutions are now considered

Israel could use spare liquefaction capacity in Egypt for export

- Money trumping politics

Oregon wants to import Canadian gas for LNG exports

OregonLNG

Trucks can transport LNG more than 500 km – and still have a margin

- Norway, Brazil, China and more
  - Especially when competing with oil
- Seen as a cleaner fuel for ships
  - Important to be low-sulphur soon

So, to conclude – consider different, closer markets…

Small scale: We seem to be beyond the worst chicken & egg discussions

- First motivation: Lack of pipelines – this led to small ships and trucks
  - Now economic to transport by truck, in several places more than 500 km!
- Second motivation: LNG as bunker fuel – reduce emissions of SOx and NOx
  - Local ferries, international ferries, merchant ships with base, deep sea ships next?
- Third motivation: LNG can be cheaper than oil over time – globally!
  - Initially only new-builds – conversions next?
  - Implications if oil stays low for a sustained period??

Infrastructure is changing, too

- Taking proven technology from larger scale operations to small scale
  - Truck market and blending in biogas new trend in several countries
- From dedicated/ integrated to third party access – port services

Products and contracts

- Long term, binding volume & price → short, more standard, quick negotiations?

…and embrace uncertainty!

Uncertainty in markets could well be LNG's best friend

- Easier to have LNG as option for security of supply vs another pipe

Fukushima example of value of LNG – but temporary

- Some flexibility offered not only by producers but also from buyers
  - Get used to meeting your customers as competitors

Be the risk management friend of the markets…

- Option to take LNG at peak or disruptions
- Volatility and uncertainty could make you kick yourself in future
  - Weaning players off the 20 yr contracts – both buyers and sellers
- Find a way to live more like oil – flexible and dynamic

Remember – cheap LNG to the world is a net good ;-)

- Environment, competition, security of supply
  - New tricks of the trade needed to make the margins dreamed of
- Be agile, commercial and disciplined!

We are happy to discuss further!

We offer strategic and commercial advice and partner selection

- Strong, international LNG team

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