



# LNG Pricing Trends and key considerations

Jacques van Rhyen-Deloitte

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## About this session

Australia's LNG industry is moving from construction into production at a time when LNG Pricing is under pressure.

In addition governments have increased their focus on how multinationals set their LNG pricing to maximise tax collection.

### **Business Outcomes:**

Participants need to understand the current pricing landscape, how the transfer pricing rules apply to Australian LNG projects and the factors affecting LNG Pricing in MNE's.

## About this session-continued

### By the end of the session, participants will:

- i. Have an understanding of current market forces, LNG Pricing fundamentals in the Asia-Pacific region and how they affect related party LNG pricing;
- ii. Demonstrate an understanding of the JCC LNG Pricing mechanism in the context of transfer pricing;
- iii. Understand how transfer pricing and current business models impact LNG prices; and
- iv. Be able to apply the transfer pricing rules to current LNG Sale and Purchase Agreement negotiations.

# Outline

1. Australian and Global Oil and Gas markets
2. The context – why is pricing important?
3. LNG pricing
4. Q&A

# Australia and the Global Oil and Gas Market

## Australian LNG landscape

1. Australian projects are moving from construction to production which will see a significant rise in LNG exports:
  - Australia is expected to move from the 3<sup>rd</sup> largest LNG producer in 2013 to the largest by 2018 with around 85 million tons per annum
  - A key trend in Australian LNG projects is project participation by key buyer's of LNG to secure supply-creates an interesting transfer pricing dynamic
2. The bulk of these exports will be to the Asia-Pacific market under long-term contracts linked to oil pricing:
  - Due to high capital investment and security of supply approximately 80% of Australian LNG is sold under 15-20 year contracts
  - Historically linked to JCC with limited flexibility in volume, price and destination
  - Recently new sale and purchase agreements have 3-5 year price reopeners

## Australian LNG landscape

### 3. Australian LNG prices linked to oil prices in Japan

- Long term contracts for LNG based on Asian LNG markets linked to oil prices imported into Japan-Japan custom's-cleared crude oil referred to as JCC
- Asian pricing higher than American and European markets which created concerns with Asian buyer's calling for a change in pricing of Asian LNG
- JCC adopted by most Asian buyers such as China, Korea and Japan
- LNG pricing lags oil prices by approximately three months using JCC index

## Global Oil and Gas market

**What?:** The price of Brent crude fell more than 50 per cent from \$115 per barrel (bbl) in June to below \$50/bbl by early January in 2015 and shows no sign of reaching the bottom just yet. For four years up to June 2014 oil prices had remained consistently above the \$100/bbl mark

### **Why?:**

- *Low demand* (due to weak economic activity), increased efficiency and a transition away from oil consumption, have contributed to price of oil per barrel falling by almost 50%. This has had profound effects of the LNG market.
- Another factor contributing to falling oil prices is the *over supply of oil*. Despite falling oil prices, the world's larger petroleum exporting countries (such as Saudi Arabia and Qatar) continue to supply oil into an already saturated market
- *...failed to meet demand expectations*- Although the global economy continues to recover, growth has been weaker and slower than many expected. For example, softening Chinese growth continues to cause concern and growth in Japan and the Eurozone remains fragile at best.



## Global Oil and Gas market-continued

### Why? Continued:

- Higher oil prices have allowed companies in the United States of America(USA) to pioneer new technologies to efficiently extract oil and gas from unconventional reservoirs using more costly techniques such as fracture stimulation(fracking) and horizontal drilling, contributing to a surge in US production
- This has contributed to the sudden surge in shale gas production in recent years, leading to a fundamental shift in global natural gas production. As at 2012, North America led the world in shale gas production growing by an average rate of 1.6% a year and it is estimated that shale gas production will double between 2013 and 2040
- Notably, in September 2014, the US Department of Energy approved the export of LNG to non-Free Trade Agreement countries (including Japan and other Asian countries) representing a significant milestone for the industry.

## Global Oil and Gas market-continued

- **Can shale survive in a lower-price environment?**

While producers have been seeing their revenues decrease and debt levels swell since June 2014, share prices of US shale producers have been steadily falling. This makes the short-term outlook for many shale oil projects very challenging, and the prospect of bankruptcy for low-margin producers is quickly becoming a reality.

Yet the long-term future of shale oil seems more promising. Analysts believe that currently a median US shale project needs a crude price of \$57/bbl as opposed to \$70/bbl last summer. This is because larger players are able to produce oil more efficiently as they begin to achieve economies of scale. A shale oil well can also be drilled in as little as a week, at a cost as low as \$1.5 million, which enables producers to react quickly to market conditions.

Australian LNG projects are rumoured to need a crude price of \$75/bbl and existing domestic pipelines and terminals are able to be converted to export facilities at a fraction of Australian pricing

## Global Oil and Gas markets-continued

### • **USA's oversupply of natural gas**

- The US has experienced a rapid increase in natural gas and oil production from shale and other tight resources. Rapid growth of shale gas will provide an important source to the Asia-Pacific.
- In 2014, the contracts signed for LNG exports from the US to Japan was 12 MT (or the equivalent of 15% of Japan's current LNG demand). The US' LNG export is projected to roughly increase to 72.8 Mt in 2029 and remain at that level through 2040.
- The first sea-borne exports of US shale gas are expected in Asia in 2015, while a wave of Australian output is also coming on stream over the next four years, giving a boost to spot buyers by increased supply.
- Asian LNG prices are expected to fall by up to 30% in 2015 as the market heads to a period of oversupply. Explosive growth in LNG consumption as seen in recent years is stalling on cooling Asian economies and the resumption of nuclear energy in Japan. Indeed, if Japan resumes operation of its nuclear power plants (or develops increased non-fossil fuel generating capacity), its demand for LNG will fall by 25 metric tonnes per annum (Mtpa). The latter point is crucial; Japanese prices are a benchmark for LNG in Asia.

Why is pricing  
important?

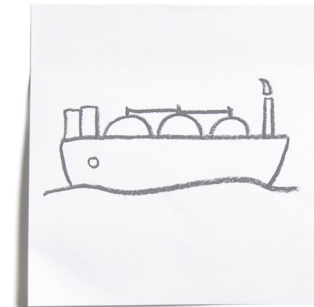
## Pricing – Why is it important?

- Income Tax
  - Assessable Income
  - Related Party Export Transactions
- PRRT
  - Assessable Receipts
  - Value at Taxing Point



## Pricing – Income Tax

- Driven by commercial marketing, sale and distribution structure and model
- Sale to Unrelated Party (e.g. direct offtake with LNG buyer)
  - Assessable Income = Sales Value
- Sale to Related Party (e.g. global/regional marketing/trading arm, equity liftings, etc.)
  - Assessable Income = Arm's Length Price
    - Transfer Pricing Considerations
    - Valuation / Pricing Methodology
    - Separation of Functions & Risks of Buying, Selling, Marketing, Shipping



## Pricing-Transfer Pricing

### What is transfer pricing and why is it important?

- Shifting profits from high to low tax jurisdiction
- Ensuring each country gets its fair share of tax from non-renewable resources
- Australia does not have a related party threshold
- Reliance on the arm's length principle

*Where...conditions are made or imposed between the two enterprises in their **commercial or financial relations** which differ from those which would be made between independent enterprises, then any **profits** which would, but for those conditions, have accrued to one of the enterprises, but, by reason of those conditions, have not so accrued, may be included in the profits of that enterprise and taxed accordingly.*

# Pricing-Transfer Pricing

## New legislation

- Focus on profit allocation rather than the pricing of transactions
  - Are returns in Australia commensurate with economically significant functions, assets and risks (in the context of the full value chain involving international related parties)?
- Broader powers for the ATO to reconstruct transactions
- TP rules brought into a self-assessment context
- Proposed new penalty regimes
- Potential for double taxation

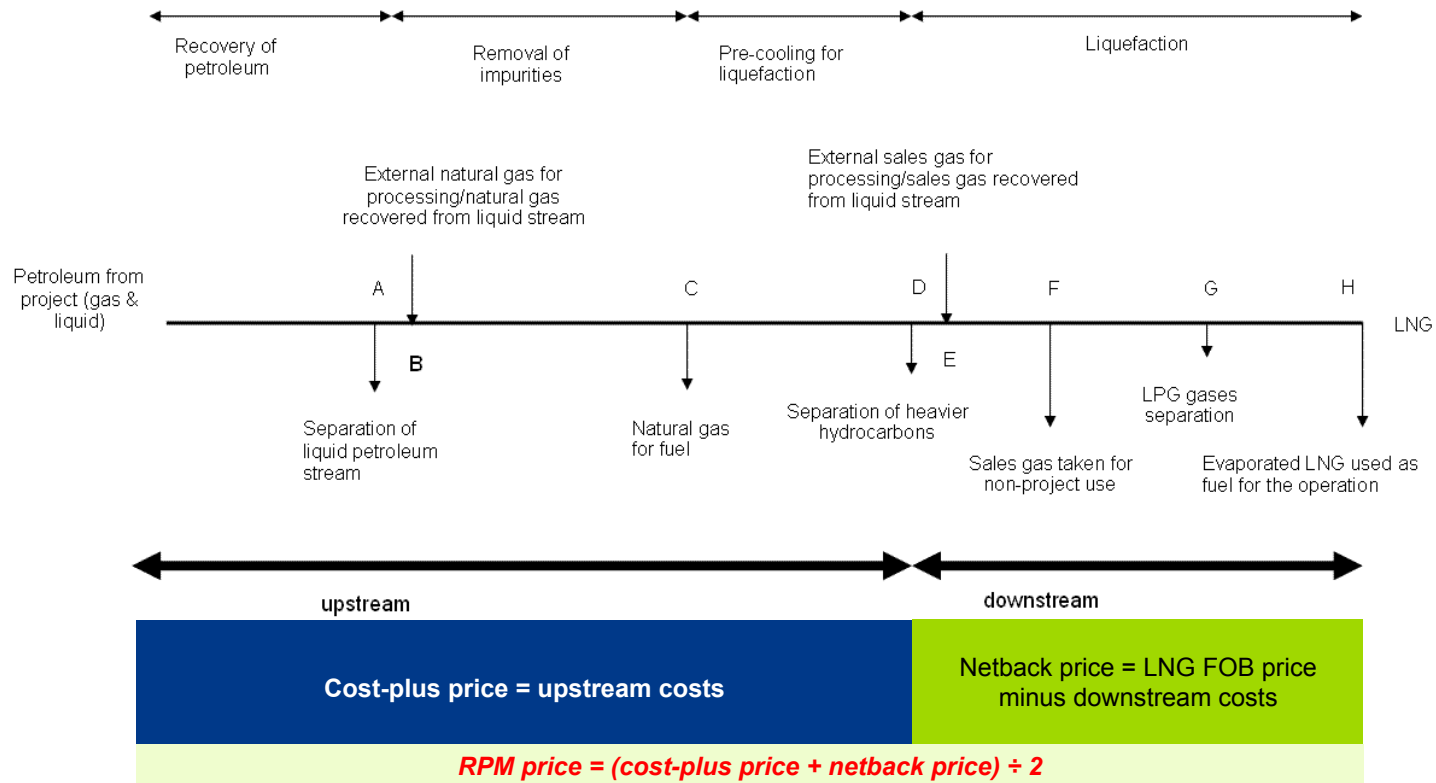


## Pricing – PRRT

- PRRT is concerned with the ‘upstream’ value of petroleum extracted
- Where petroleum is subject to an arm’s length sale at or before the taxing point (e.g. certain crude oil and domestic gas projects), the sale proceeds will represent assessable PRRT revenue
- In all other cases, taxpayers will be required to apply an appropriate methodology to determine the value of the resource at the taxing point
- LNG sales price incorporates both the value of the gas extracted by the upstream facilities **AND** the value added by the downstream facilities in converting the gas to LNG
- Therefore, necessary to apply an appropriate methodology to determine the value of the LNG feed gas at the taxing point (the ‘Gas Transfer Price’)

# Offshore integrated gas-to-liquids project

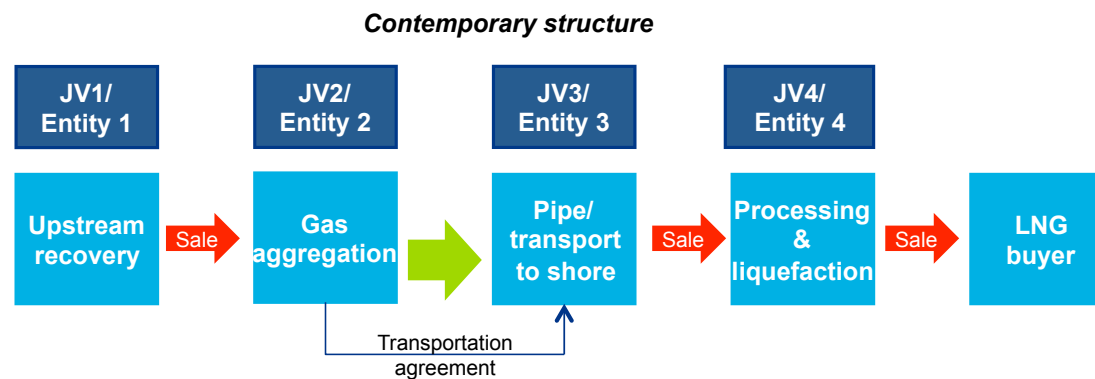
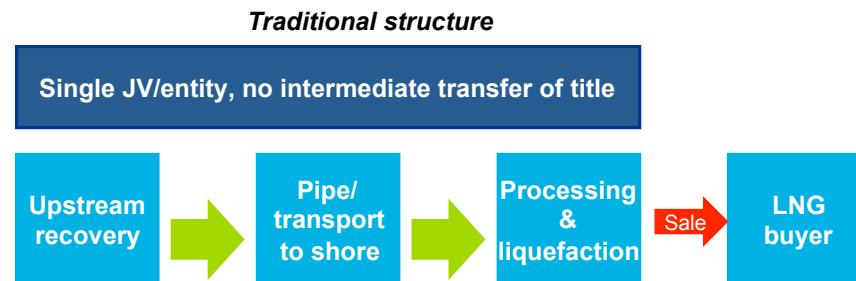
A simplified diagram showing flow of petroleum in a typical integrated GTL operation



Adapted from: ATO Taxation Ruling (TR) 2008/10

# LNG Pricing – PRRT

- Integrated gas-to-liquids projects are increasingly becoming more structurally segregated resulting in the taxing point(s) being triggered earlier in the value chain and the emergence of varying prices (and pricing models) for intermediate transactions



# LNG pricing

## LNG pricing- sales and pricing trends

- Critical to note that there is no long-term traded LNG index to set prices between related parties-all negotiated based on pricing formula
- Historically LNG has been sold pursuant to long-term contracts, typically 20-25 years, with limited flexibility in volume and price (e.g. take or pay contracts)
- In the Asia Pacific region, long-term contract LNG prices are usually linked to crude oil prices
- The Japan Crude Cocktail (JCC) is a commonly used market price index, though there has been a recent shift to Brent pricing. Different indices are used in Continental Europe and the US / UK
- Given recent pricing pressures alternative pricing formulas emerging-ATO not accepting new models and Japan reluctant to follow status quo
- The discount factor (i.e. gradient or slope) to index prices is critical – the slope and intercept vary depending on contract terms, market situation and/ or other commercial contract conditions such as trade volume flexibility, contract period, Incoterms (e.g. FOB, DES)

## LNG pricing- sales and pricing trends

- MNEs may adopt a blended price based on an average of different price indexes (e.g. JCC and HH plus margin indexed LNG contracts)
- LNG trade patterns are evolving, adding to liquidity on the spot market - e.g. multiple and single cargoes are being sold outside of long-term SPAs, with brokered trades and speculative trading positions taken up by non-traditional players
- The Platts Japan Korea Marker (JKM) benchmark price assessment for spot physical cargoes is a recognised reference point for spot sales hence a JKM based netback may be appropriate
- Price openers in LNG SPAs are becoming more common, given the focus on the arm's length nature of terms and conditions between international related parties
- Shipping playing a more prominent role in pricing

## LNG pricing-Challenges for Asian LNG pricing

- Lower crude oil prices are making oil-linked (i.e. JCC indexed) LNG contracts cheaper. This in turn places pressure on the LNG spot market.
- Majority of the LNG contracts in the Asia Pacific market use the Japanese Crude Cocktail (“JCC”) price as the method of indexation
- Given LNG contract formulas are “locked-in” around three/six months behind oil, it is likely that prices, in both spot and long-term contracts, will remain single-digit from the second quarter until the end of 2015
- As such, there is most certainly scope for the market to fall further.
- The US model of pricing LNG is based on how much gas is bought, not the price of Brent, the global crude oil benchmark.
- Advent of US Shale Gas will impact Asian purchasing power over Australian LNG
- Impact of changing pricing mechanism can be detrimental to buyers

## LNG pricing-A Shift from Japanese Crude Cocktail Indexing?

- One of the most significant factors directing Asian demand towards US LNG is price.
- In this regard, both a shift away from the JCC index or the gradual emergence of an Asian LNG spot market have been proposed in attempts to reduce the price competitiveness of US LNG exports (especially given the additional transportation and liquefaction costs).
- Pricing has also been impacted from changes in demand, supply and geopolitical economic events. This has made pricing more complicated than ever (as analysed in a number of studies).
- Rogers and Stern (2014) argued that JCC pricing hasn't reflected market fundamentals for 20 years.



## LNG pricing-Oil linkage

- Northeast Asia and China have largely adopted the Japanese approach to oil-linkage
- It utilises a simple formula which is linked to the Japanese Customs Cleared Price for Crude Oil-JCC or the "Japanese Crude Cocktail"

- It is in the Form of:

$$P=C+S*JCC$$

- Where P is the price in \$/MmBtu, C is a constant expressed in \$/MmBtu and S is the "Slope", a dimensionless number applied to JCC in \$/bbl because of the constant, gas prices do not rise proportionally with oil prices as do European prices

### **Other Indices:**

- Brent Index
- Henry Hub

## LNG Pricing-a typical formula

- A Typical Formula -  $P = \$0.80 + 0.1485 * JCC$
- In This Case, When  $JCC = \$100/\text{bbl}$ ,  $P = \$15.65$
- Because oil prices have gone through wide swings over time, “S curves”(sometimes caps and/or floors) were introduced at one point in Asian contracts
- S curves reduce the slope at upper and lower "pivot points"; they thus have the effect of protecting the buyer at high oil prices and the seller at low oil prices
- but as oil prices began to move to much higher levels in 2004/2005, S curves increasingly put the seller at a disadvantage
- with the tight Asian LNG markets towards the end of the decade, producers were successful in removing most of them with the exception of high-cost Australia-

## LNG pricing-Components of an LNG Price

LNG Price = fixed component + proportion of oil price

Usually has bands to reflect movements in the agreed LNG price based on fluctuations of the oil price. An **S curve**.

Example

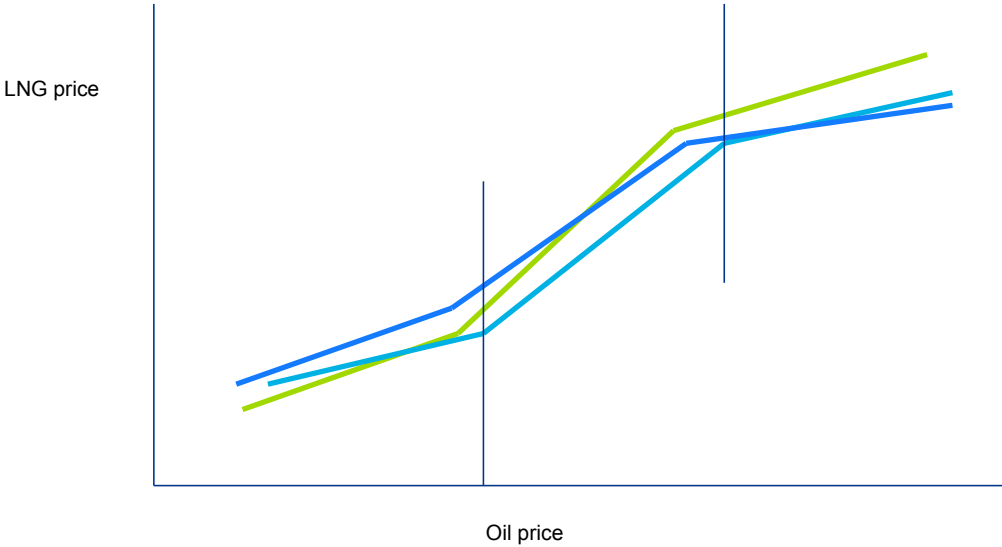
$\$2 + 0.11 \times \text{INDEX}$  where INDEX is  $< \$55$

$\$0.50 + 0.15 \times \text{INDEX}$  where  $\$55 < \text{INDEX} < \$90$

$\$4 + 0.11 \times \text{INDEX}$  where INDEX is  $> \$90$

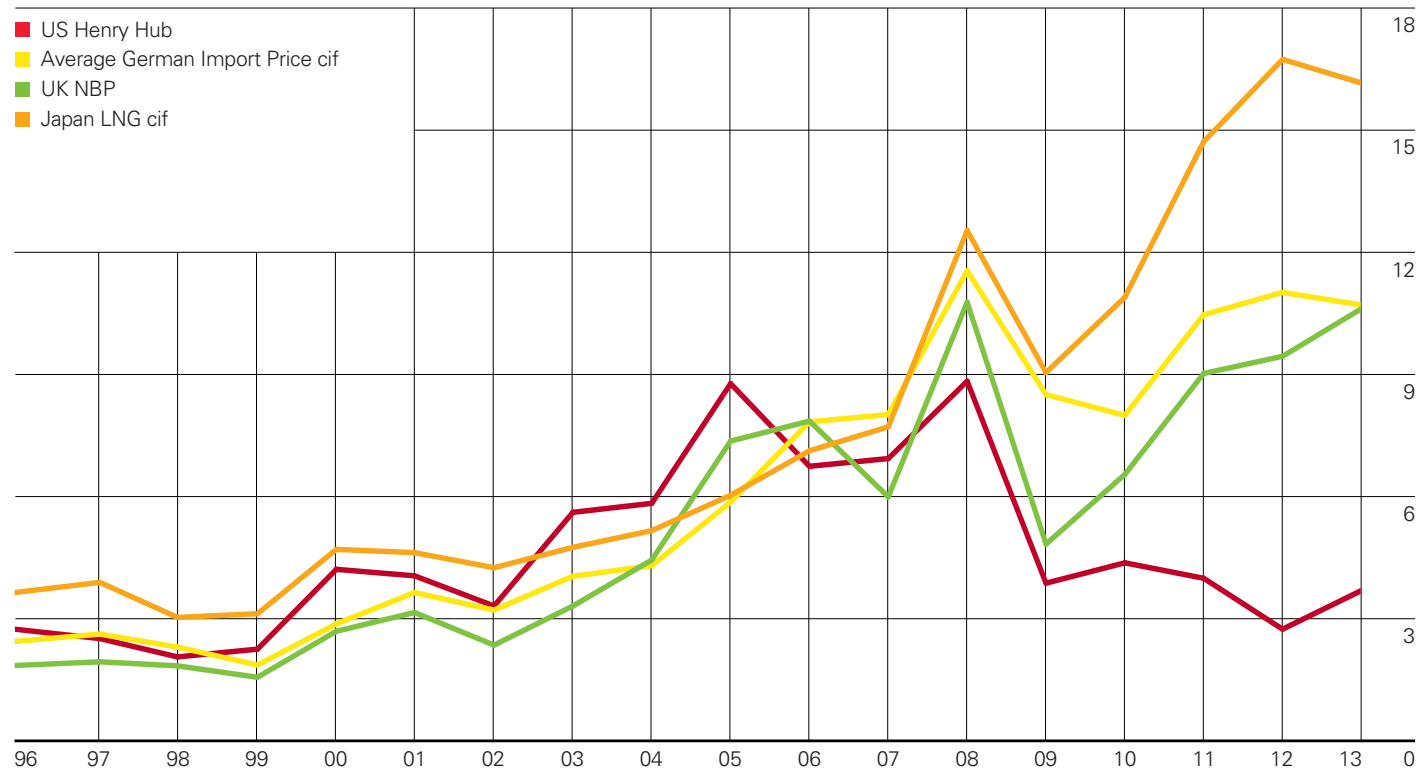
Adjustments may be required to reflect other terms, i.e. shipping

# LNG pricing-An S Curve

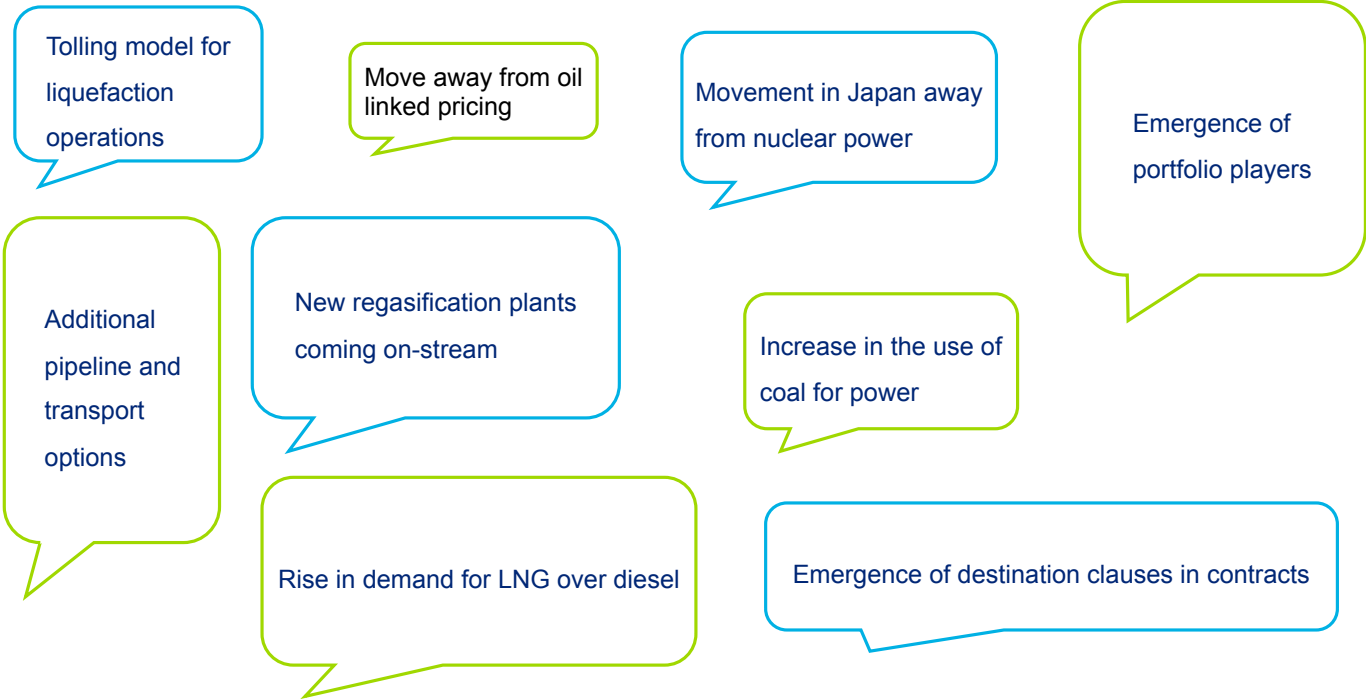


# LNG Pricing-Gas prices

\$/Mmbtu



# LNG Pricing – Macroeconomic factors



## LNG pricing-other considerations

- Role of marketing hub or trading desk in securing SPA's
- Spot vs. long-term agreements
- Real risk vs. perceived risk
- Specifications: Lean vs. rich gas
- Contract variations
- Shipping
- Floor and Capped pricing
- Blended pricing
- NTA approach to pricing-non arm's length approach
- Risk mitigation strategies

Q&A





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