LNG market evolution, contracting & asset value

Timera Energy

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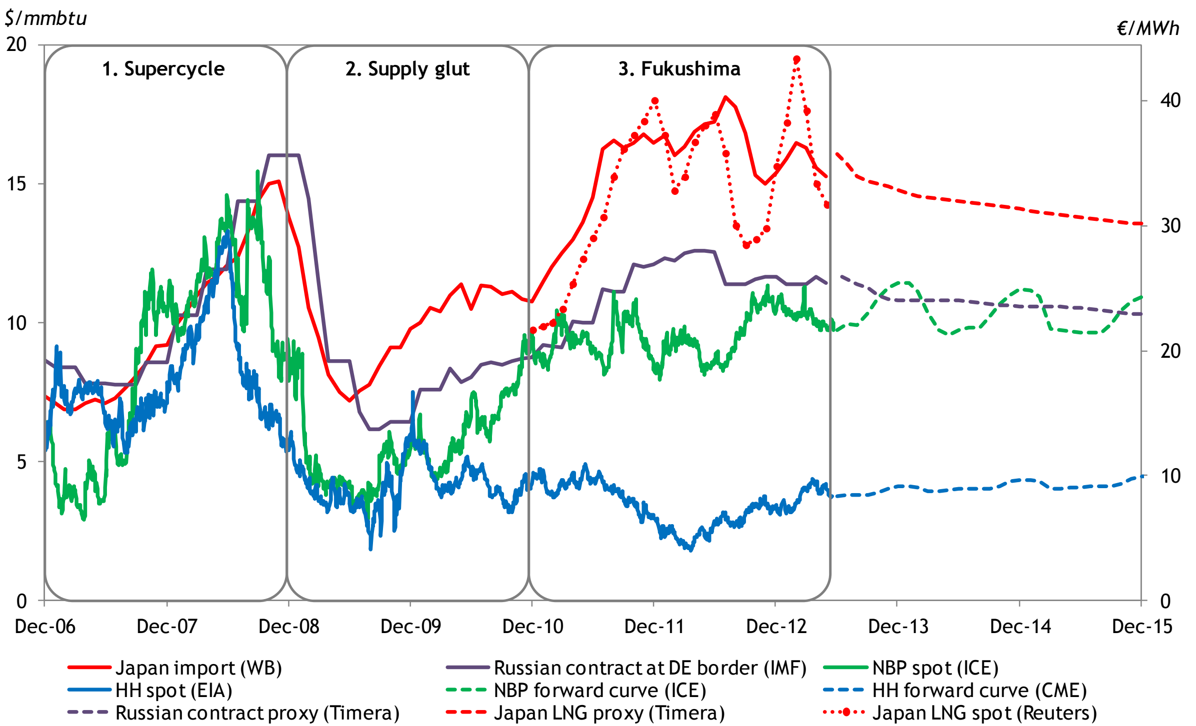
Headlines

- A tight LNG market pre-2015 is likely to support the value of LNG supply flexibility
- But... several factors may structurally alter the LNG market balance post 2015
- Key risk 1 → LNG supply flexibility value is eroded as price spreads and volatility fall
- Key risk 2 → US exports drive an evolution in supply contract pricing and flexibility
- View on market evolution drives approach to monetising asset value
- Opportunities exist to create value from different expectations

3 phases of global gas market evolution

'History doesn't repeat but it does rhyme'... Pronounced regional price spreads over the last 2 years are unusual in an historical context



Forward prices as at 20 Jun 13

Broad range of market dynamics over the last 5 years provide a useful insight into the future:

1. **2007-2008 Commodity super cycle**
   - Correlated boom/bust
   - Strong oil-linkage
   - Regional convergence
2. **2009-10 Gas supply glut**
   - Crisis, new liquefaction, US shale
   - US/European hub prices de-link from oil
3. **2011-13 Fukushima tightness**
   - Fukushima -> Asian spot divergence
   - Tight & volatile spot LNG market
   - European hubs reconnect with oil linkage

LNG market conditions to 2015

Market tightness and price volatility will likely continue to support the value of LNG supply flexibility over the next 2 to 3 years…

Tight medium term supply

- Little new liquefaction capacity before 2015 (+ project delays?)
- Export declines driven by feedgas issues (e.g. Indonesia, Egypt)

Medium term demand swings

- Growing influence of buyers with low contract cover (e.g. China, India, Brazil, Mexico)
- 'Blocky' fluctuations in demand

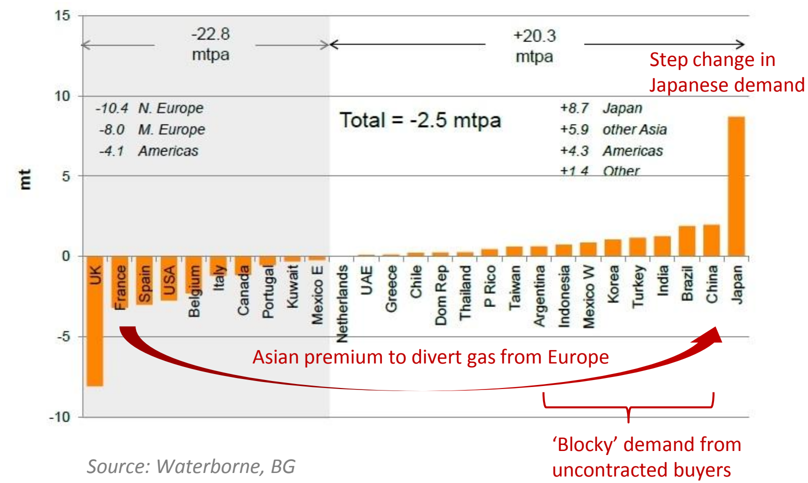
Inelastic supply

Demand swings

Higher LNG flexibility value

- LNG spot price volatility likely to continue
- Asia spot premium required to attract divertible supply
- High value placed on supply flexibility
- Contract re-negotiation to access/share flex value

2012 incremental demand illustrates medium term issues



Source: Waterborne, BG

LNG market conditions post 2015

Risk that price spreads, volatility and supply flex value erode over time… Consensus view of tight market is vulnerable to downside surprise

- Large volume of new liquefaction capacity under development
- Projects in Australia, Canada & Africa targeting oil-indexed Asian buyers
- But… Large potential volume of US exports that are destination flexible and linked to hub prices.
- Chinese demand is key, but uncertain given (i) slowing growth/energy demand (ii) requirement to displace cheap coal and (iii) pipeline/shale alternatives

Evolution of pricing and value will be driven by market balance

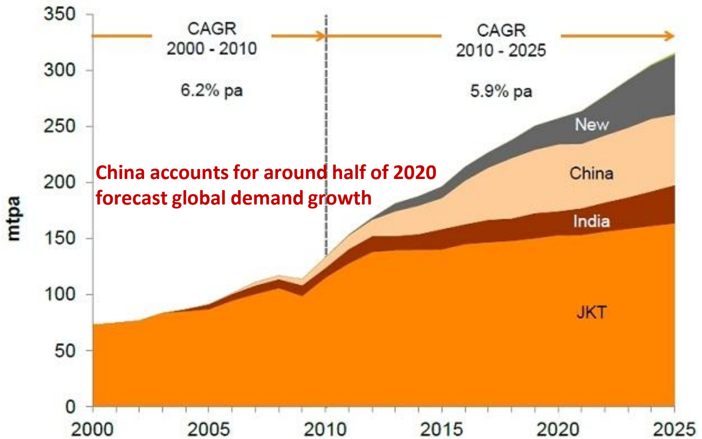
Tight market continues

- Demand outpaces new projects
- Premium to divert flexible gas
- Spot volatility drives flex value
- Oil-indexation dominant

Transition to oversupply

- Surplus gas flows into spot market
- Global prices re-converge
- Volatility and flex value declines
- Hub indexed supply increases

China is the key driver of global demand growth



Source: Wood Mackenzie, BG

Evolution of LNG pricing and flexibility

US exports threaten to change global pricing dynamics... Growth in flexible supply will increase the influence of hub pricing

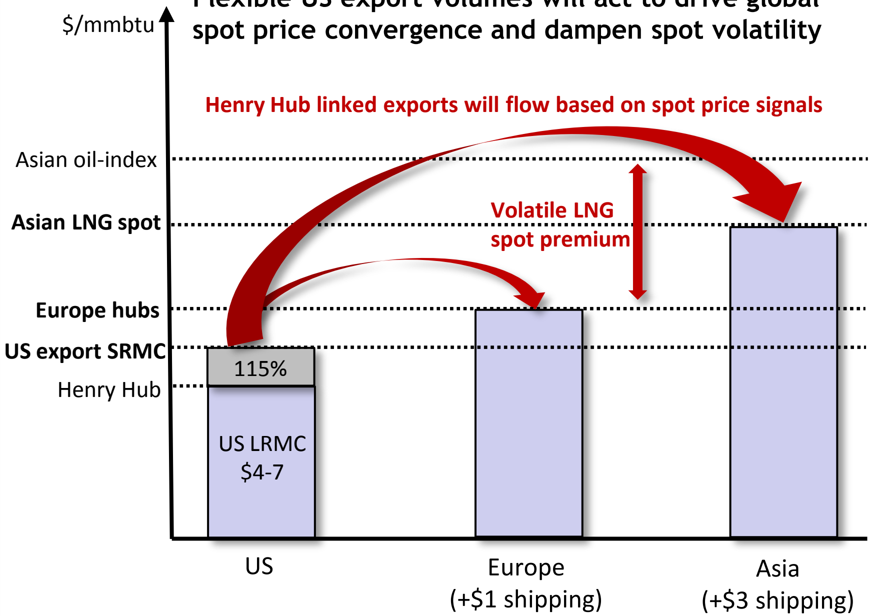
Tight market continues

- Sellers market with US export volumes 'absorbed' without major pricing impact
- But US exports still act to drive convergence and dampen volatility
- Aus/Canada/Africa LRMC cost curve drives long run contract pricing
- Oil-indexation remains dominant
- But.. flexible US exports increase the influence of HH on LNG spot market price dynamics
- HH/NBP driven 'Atlantic Basin' price signal increases over time

Transition to oversupply

- Buyers market with surplus gas increasing LNG spot liquidity & the influence of hub price signals
- US exports have a disproportionate influence on marginal pricing
- Transition to hub indexation for new long term supply contracts
- Asian spot (hub?) pricing off HH/NBP Atlantic price signal
- US exports dampen volatility driving down supply flex value
- HH US production cost base an important global price driver

Flexible US export volumes will act to drive global spot price convergence and dampen spot volatility



Source: Timera Energy

Key challenges in contracting LNG supply

Issue	Commercial considerations
Recognising uncertainty	• Rapid growth & immaturity increases LNG market uncertainty. 'Betting' on market outcomes is a risky business. • Several factors could drive structural changes e.g. weak Chinese demand, high US exports, hub penetration. • Market consensus views (which may be right) are shaped by current market tightness/divergence/volatility.
Contract pricing	• Supply contract price levels and indexation will be driven by the balance of power between sellers & buyers. • Contract hub price linkage is set to increase, with US exports a key driver, particularly if oversupply develops. • Negotiation focus on (i) sharing value upside & (ii) sharing downside risk exposure (e.g. oil vs hub price risk).
LNG influence on European hubs	• Europe unlikely to have a structural requirement for new LNG this decade (given pipeline supply options). • This limits the role of LNG in influencing marginal pricing at European hubs (Spain & UK may be exceptions). • But flexible US exports will strengthen the HH vs NBP relationship over time (even if US gas flows to Asia).
US export implications	• US export contracts allow buyers to diversify away from long term oil-indexed supply to hub linked pricing. • Buyers also place a value premium on volume/destination flexibility and hedgeability of US supply. • But US supply entails HH vs NBP/TTF basis risk, i.e. only makes sense as part of a broader LNG portfolio strategy.
Monetising supply contract value	• Key risk → new supply reduces global price spreads and volatility, eroding LNG supply flexibility value. • A view on this risk should drive approach to (i) negotiating to access flex value in existing supply contracts (ii) monetising existing supply flex vs 'buying' new flex (iii) paying for flex with cash vs other contract concessions. • Opportunities exist to create value via exploiting differences in company expectations of future outcomes.

LNG producer challenges

View on market evolution drives approach to monetising production value... opportunities exist to create value from different expectations

Producer challenge	Tight market continues	Transition to oversupply
Invest in new liquefaction	Sellers market with high spot price levels and volatility. Access to oil-indexed buyers. Finance accessible. Ability to pass risk through to buyers.	Buyers market with global price convergence and lower volatility. Foundation contracts key. Greater hub influence. Projects must bear greater risk.
Renegotiate existing supply contracts	Incentive to retain supply flexibility and negotiate upside profit sharing with contract buyers.	Incentive to 'sell' supply flexibility (e.g. diversion rights) to contract buyers. Preference to monetise value for cash now.
Make up feedgas shortfall	Higher risk from LNG spot market exposure. Incentive to buy long term forward contract cover.	Lower risk from LNG spot market exposure. Incentive to buy shorter term contract cover (e.g. to 2015).
Increase supply to existing trains	Incentive to selectively monetise incremental value over time.	Incentive to monetise incremental supply & flexibility value as soon as possible.

- Increasing focus on supply flexibility value (e.g. diversion rights) given current spot market premiums/volatility
- LNG buyers are currently paying a premium to 'buy'/negotiate long term supply flex value
- Pricing of flexibility reflects consensus view of ongoing market tightness
- This presents an opportunity for producers to monetise long term production value... but supply contract structuring is key
- The flipside... producers currently face higher risk from feedgas shortfalls

European LNG regas terminal challenges

View on market evolution drives approach to monetising regas terminal value and developing/selling new capacity...

Terminal challenges	Tight market continues	Transition to oversupply
Regas utilisation	High Asian spot price levels & volatility. European supply diverted. Continuation of 'peaky' spot cargo flow into Europe.	Asian prices reconnect with Europe. Lower spot volatility but increase in spot trading & cargo flow. Higher European terminal utilisation.
Regas capacity pricing	Key → extracting value from 'peaky' flow + security of supply benefits. Tariffs need to reflect short term nature of spot cargo flow.	Increase in regas capacity value given higher utilisation. Greater interest in long term capacity access. Short term access also key with increase in spot trading.
Existing terminal monetisation	Important to reduce logistical barriers (e.g. scheduling, port/storage access) to maximise capacity value from short term opportunities.	Reducing logistical barriers also important with higher spot liquidity. Profiling of capacity sales to reflect potential increase in capacity value.
New terminal development	Opportunistic development driven by reloads, new markets & security of supply (e.g. Baltic, Med).	Higher terminal utilisation may support NWE terminal expansion. Terminal development in new Med/Baltic markets supported by cheaper LNG.

Timera Energy

We offer senior consulting expertise on value and risk in the global LNG and European energy markets

Recent project credentials

- Advising an oil-major on renegotiation of LNG supply contract pricing/flexibility
- Analysis of the impact of global LNG market price dynamics on European hub prices
- Advisory on the monetisation of flexibility value of a large upstream gas portfolio
- Risk advisory on exposure deconstruction of European portfolio of LNG and gas assets
- Valuation & capacity sales strategy for two North West European gas storage asset owners

Our Director's experience

- Extensive commercial and analytical industry experience
- Previous roles at BP, Origin Energy, Williams Energy, Dynegy and JP Morgan
- Focus on asset investment, portfolio hedging and contract structuring

Our clients include

Statoil

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