The Long-Term LNG Contract Pricing Problem: Case Solved

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Long-term global LNG contracts start expiring *en masse* post-2020; what will replace them in the spot market era?

**LNG contracts by buyer**

**Changes in LNG contract obligations pre/post 2020**

- **2017-2020**
- **2020-2030**

- Americas
- Portfolio
- Europe
- Rest of Asia
- Japan
- Mideast
- China
- Europe
- Americas
- Mideast
JKM liquidity takes off in 2018 and creates possibility for spot indexation for LNG contracts in Asia for the first time

~300 lots = 1 cargo
Marginal cubic meter of gas feeding LNG supply driven by Oil/NGL economics

Permit IRR Scenario

Gas Prices Matter Little to Permian Returns

Source: S&P Global Platts Analytics
Outside of $29-$64 per barrel, reverse the direction of oil-indexed contract LNG price for seller to stay revenue neutral.

- **Weaker oil, Stronger gas**
- **No adjustment**
- **Stronger oil, Weaker gas**

Source: S&P Global Platts Analytics
Outside of $5-11 JKM and $29-$64 oil, reverse the direction of JKM-indexed contract by $0.16/MMBtu for every $1/BBL oil move.

- **Upward adjustment to JKM Index** if oil below $29 and JKM below $5.
- **Contract tied to JKM Index only if oil price in $29-$64 per bbl range.**
- **Downward adjustment to JKM Index** if oil above $64 and JKM above $11.

Source: S&P Global Platts Analytics
Long-term gas prices show a weaker few years ahead followed by stability tied to greater supply elasticity.

Source: S&P Global Platts Analytics
Key Takeaways

- Oil/gas price relationship has shifted from being downstream and competitive to upstream and inverted

- LNG contracts needs to be based on upstream economics as much as downstream competitiveness versus coal/carbon and battery storage
  - Both buyers and sellers are now much more vulnerable to outside risks

- Goal of new LNG contract structure is to protect both upstream revenue for the seller and limit downstream costs for buyers
  - Sellers accept revenue neutrality for producers in high price case
  - Buyers accept revenue neutrality for producers in low price case