



LPG Prices Today and Tomorrow

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LPG Prices Today and Tomorrow



- The main price markers for LPG in Asia
- The Saudi CP – what lies ahead?
- FEI and MOPS
- Belvieu pricing and its future impact in Asia

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The LNG and LPG shipping orderbooks are looking eerily similar.

LNG and LPG Shipping—The Similarities

As the year 2014 begins, there are some eerie similarities between the LNG carrier orderbook and that for VLGCs.

LNG Shipping. The table below shows the current LNG orderbook status. The fleet will expand by approximately a third when all these newbuildings get delivered.

LNG Fleet (as of January 2014)	
#vessels	358
Existing Fleet	358
Newbuildings	117
N/B percent	33%

The market turnaround here occurred some two years ago when the Fukushima disaster tightened the Asian LNG market. The trade shift of Western LNG moving East increased shipping ton-miles and raised market freight levels.

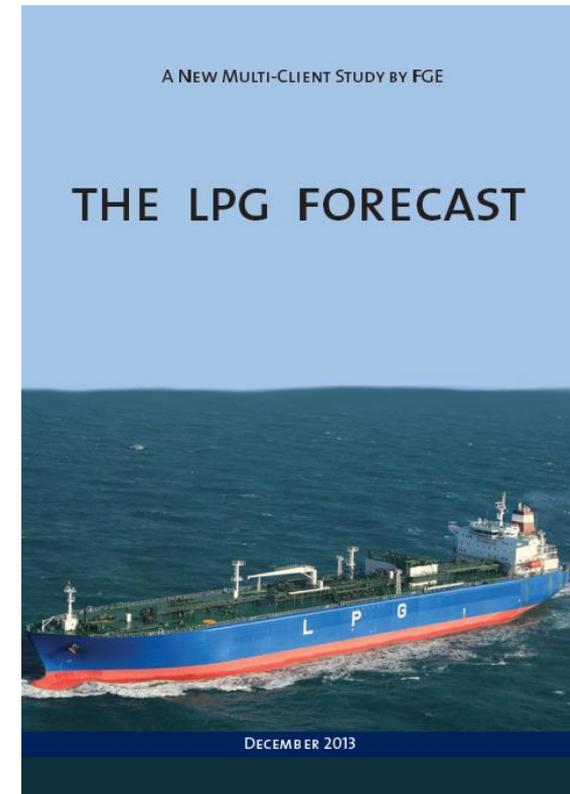
Fukushima also encouraged a wave of speculative LNG vessel orders. Some 36 of the 117 orders shown above may be classified as speculative.

LPG Shipping. The next table shows the position of the VLGC fleet, existing and newbuilding.

VLGC Fleet (as of January 2014)	
#vessels	152
Existing Fleet	152
Newbuildings	48
N/B percent	32%

The newbuilding percentage is almost identical to the LNG fleet shown above.

Again, it has been supply out of the West—in this case out of the US Gulf Coast—and perceived increased shipping ton-miles that have driven newbuilding orders. And the share of speculative orders may be even higher (see the VLGC orderbook following).



The Various Price Markers for LPG in Asia

- **Saudi CP** monthly pricing for propane and butane set by Saudi Aramco.
- **FEI** daily pricing for propane and butane published by *Argus*.
- **MOPJ** daily pricing for naphtha published by *Platt's*.
- **Belvieu** daily pricing for propane, n-butane, and isobutane published by *OPIS*.

The Saudi CP – What Lies Ahead?

- The CP (and its predecessors) have been the benchmark for LPG prices in Asia for more than thirty years.
- Although Saudi LPG exports have declined in recent years, other Middle East LPG suppliers with rising export volumes (such as Abu Dhabi and Qatar) price on CP.
- The CP remains the basis for LPG prices in Japan and Korea, two of the large LPG importers in Asia. India has no alternative to LPG for its import pricing.
- A conflict with Saudi LPG trading aspirations?
No, on the basis of present set-up.
- Will FEI replace CP?
No, when contract buyers need Middle East LPG and it is only available on a CP basis.
- Does Belvieu pricing pose a threat?
Not at present because US-supplied LPG comprises only 5% of the Asian trading market now.

The Role for FEI and MOPJ

FEI

- FEI and the window has its supporters and its critics.
- FEI does offer present and forward prices on a daily trading basis (there is also a CP forward swaps market).
- But there are criticisms of the FEI butane price quotation and sometimes of trader influence on the prices reported.
- How good are the reported prices? On LNG, the new Japanese system of reported prices may give us some guidance.

MOPJ

- MOPJ became a more important LPG price marker in 2013 with the purchasing activity of FPC for LPG use versus naphtha in steam cracking in Taiwan.
- However, the new petrochemical use, particularly in China, will be as PDH feedstock. Here naphtha won't be the benchmark.

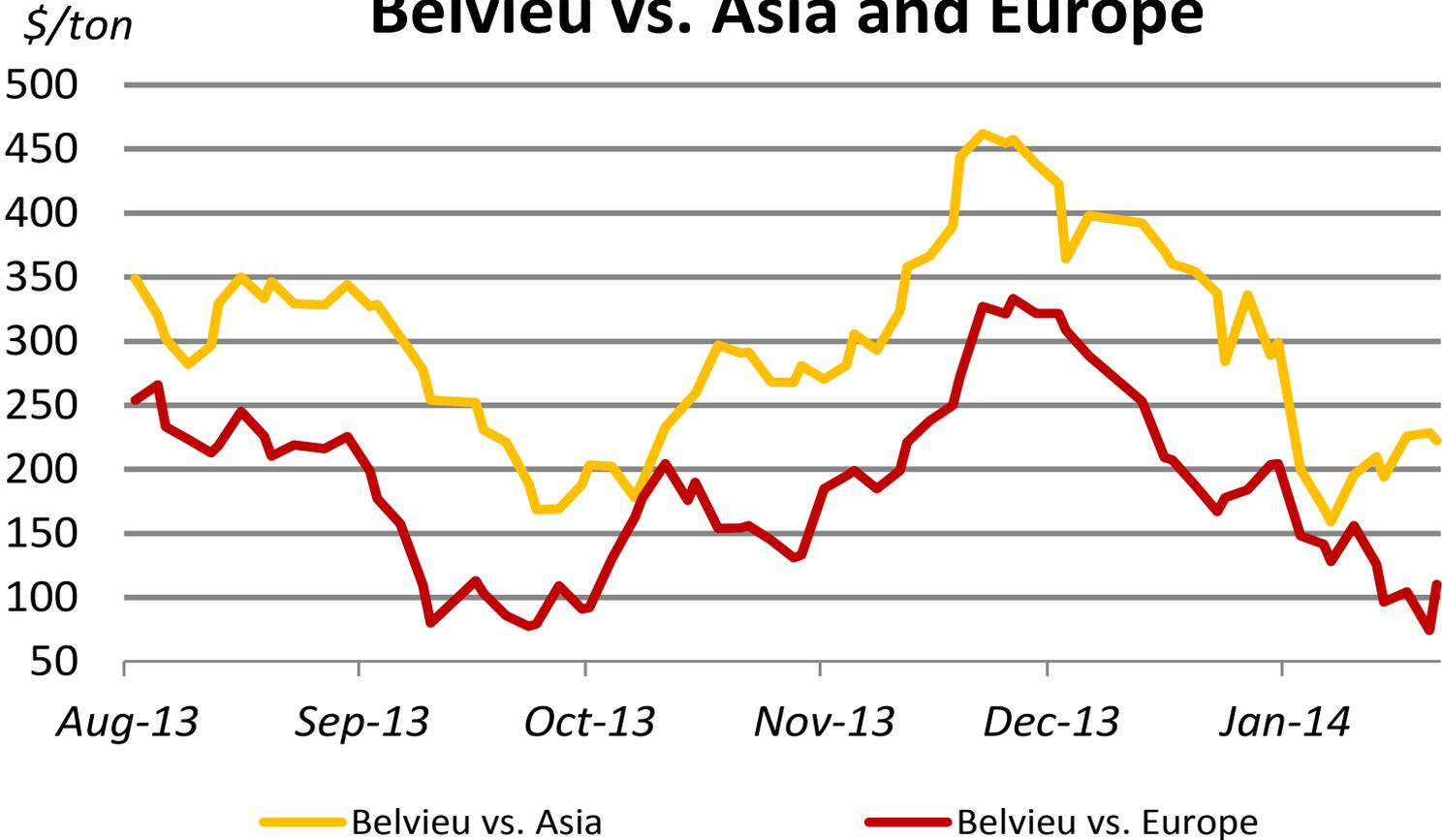
Mont Belvieu LPG Pricing

- Mont Belvieu offers NGL trading on both a cash basis and via electronic screen.
- The main product traded is propane (TET and non-TET).
- The basis for this trading is the large salt dome cavern storage that is available at Mont Belvieu.
- Mont Belvieu pricing is the basis for US LPG export pricing (with the addition of terminal fee).
- US seaborne exports of LPG (mainly propane) are now significant. They exceeded nine million tons in 2013.
- However, domestic factors are more important in setting Belvieu propane prices.
- The industry watches the weekly trend in propane inventories closely.
- The mild winter of 2011-12 contributed to the subsequent fall in propane prices; the very cold weather this winter to the January price run-up.

Mont Belvieu and LPG Price Spreads

- The American shale gas revolution has helped create the gap between US and international gas and gas liquids prices.
- In gas this gap exists between Henry Hub gas prices and LNG prices in Europe and Asia.
- In NGL's this gap exists between Mont Belvieu propane prices and CFR propane prices in Europe and Asia.
- So far, the resulting propane price spreads have resulted in a very profitable business for:
 - the terminal operator
 - the trader or lifter
 - and the shipowner.
- But not always.
- Spot trading prices can be volatile. The recent Belvieu price run-up squeezed margins. And some lifters delayed or cancelled lifting slots in February.

Belvieu vs. Asia and Europe



Mont Belvieu Pricing and Its Impact on Asia

- A year ago at this conference we heard of the first Mont Belvieu priced contracts in Asia – those between Astomos and Japanese utility companies.
- These contracts have had no impact on Asian LPG prices – because these contract volumes have not been traded.
- When will Belvieu prices have an impact on Asian LPG prices?
 - when Belvieu propane is traded more in Asia
 - and when US propane constitutes a significant portion of the Asian trading market. In our forecast the US percentage will be:
 - 5% US in 2013
 - 14% US in 2015
 - 20% US in 2017
 - and 27% US in 2020.

Mont Belvieu Pricing and Its Impact on Asia

How will LPG prices adjust to this new competition?

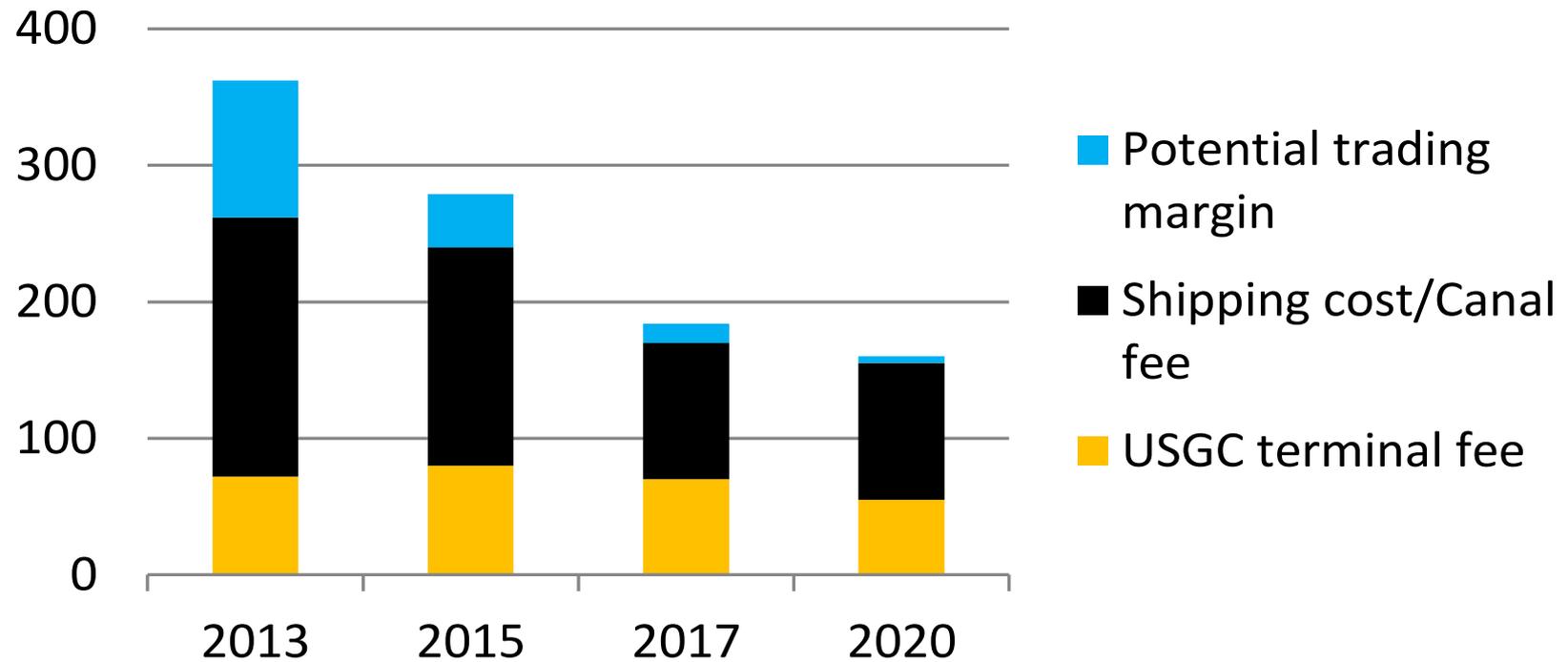
- We believe that Middle East LPG producers will adjust their prices to meet this competition (note that the competition and adjustment will be primarily in propane).
- The result will be lower prices for buyers.
- The result will also trim the margins and spreads for US propane in Asia.

What are the uncertainties?

- US LPG exports in 2020.
 - will it be 20 or 30 million tons?
- Iran LPG export rebound
 - will it back out US LPG exports?
- The Panama Canal.
 - will there be a delay in completion of the current works and how might that effect trade to Asia?
 - what will be the resulting realistic steaming times between Houston and Asia?

Propane Costs and Margins - US Gulf to Asia

\$ per ton



Thank you for your attention.