

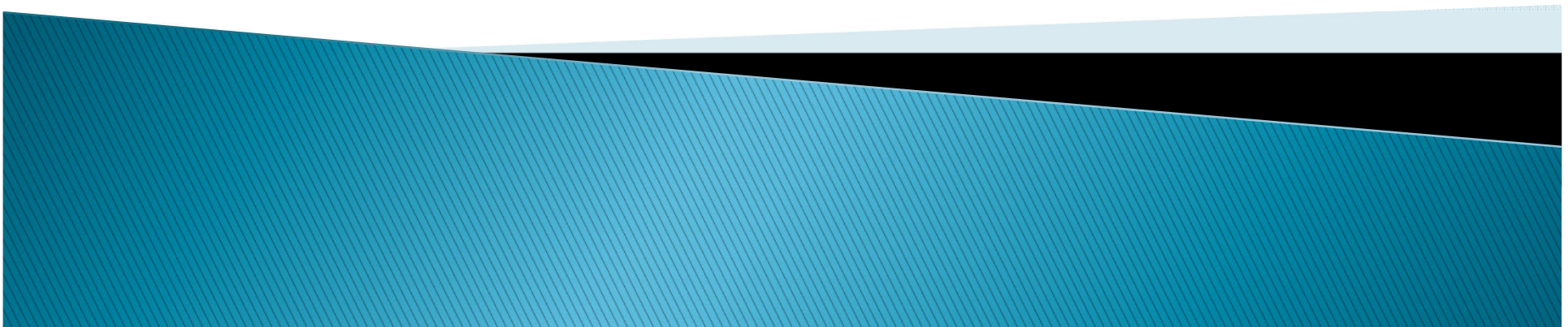


LPG SUPPLY & DEMAND

PRESENTATION TO NZ GAS INDUSTRY FORUM

November 2016

Queenstown



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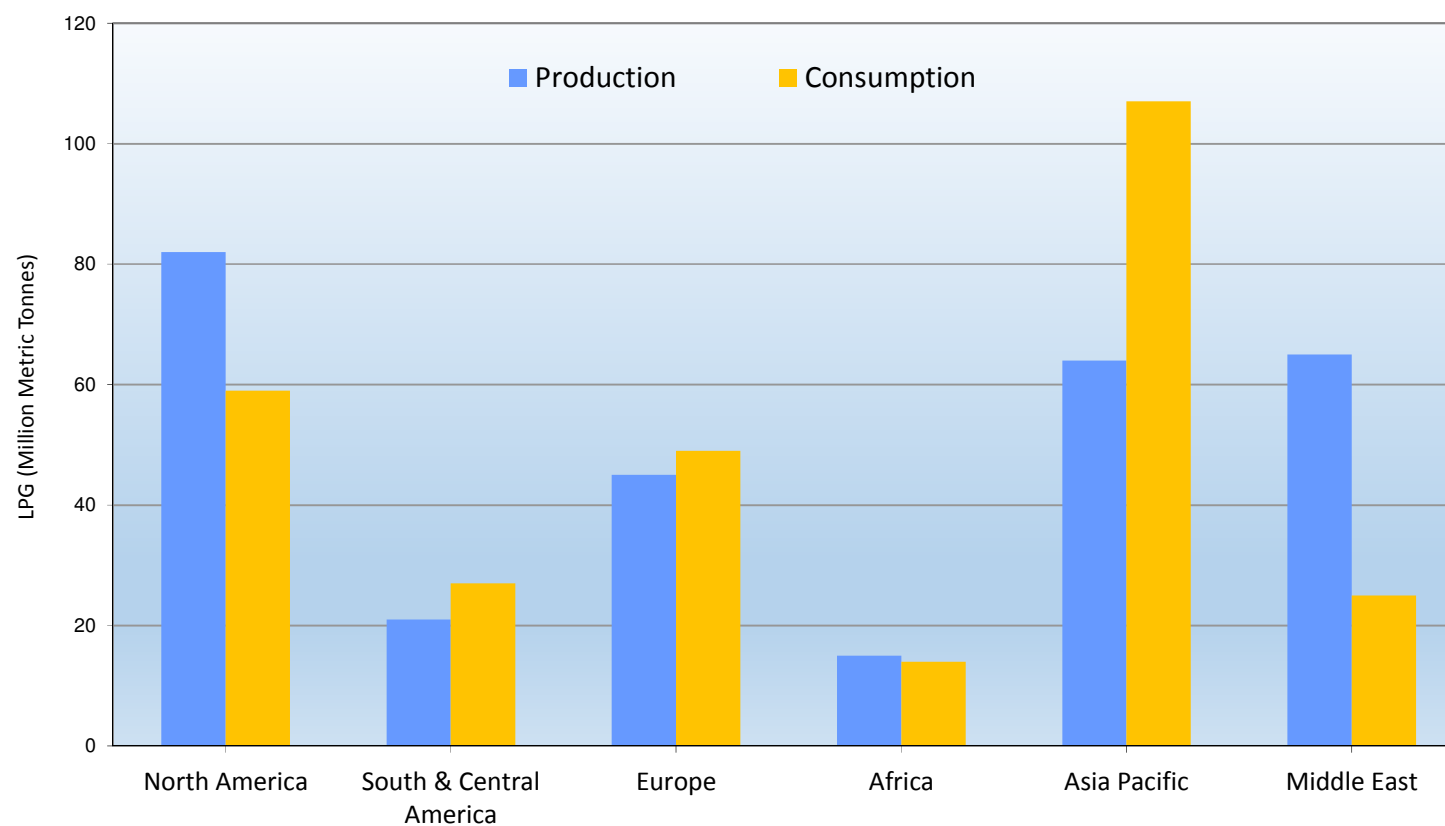
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2015 Global LPG Production and Consumption



THE LPG WORLD BY NUMBERS AND PERCENTAGES



Consumption by Sector:-

Domestic 44%

Petchem 26%

Industry 12%

Transport 9%

Refinery 8%

Agriculture 1%

➤ Global consumption is up 32% over the last 10 years

➤ Up 4% from 2014 to 2015

SOME CURRENT MARKET OBSERVATIONS



- World Market is in over-supply – with production in excess of consumption by 8-10mmt.
- USA has added 20mmt to world supply and exports in the last 5 years.
- Peak is likely in the next couple of years (28-30mmt).
- As a result, LPG prices are starting to de-couple from the rest of the barrel. LPG is a by-product and must find a home. Depending on your perspective, this is likely to be good news for most of the people in this room – including end consumers.
- Traditionally the biggest sink for LPG over-supply has been Petchems but there is price sensitivity to Ethane and Naptha.

CURRENT SHIPPING OBSERVATIONS



- Shipping is fundamentally long due to overbuilding in certain sectors, namely VLGC (Very Large Gas Carriers) – 84kcbm, MLGC – 35kcbm and Handy – 22kcbm for Ethylene.
- There is a new kid on the block – Ethane.
 - Has also seen ship building ahead of new production.
 - The first new trade from ECUSA to NWE has started this year.
 - Ethane is displacing LPG in the Petchem sector and is adding to the price de-coupling of LPG to crude oil.
- The small ship sector (pressurised up to 11kcbm) is perhaps the most stable, but still under pressure. This sector does not attract speculative money at the same rate as bigger ships.

PANAMA CANAL LAST 102 YEARS OPENED IN 1914 – GATUN LOCKS



PANAMA – SINCE 1914



AFTER 102 YEARS – NEW LOCKS FOR LONGER, WIDER AND DEEPER SHIPS



SO NOW – ANY OF THESE



Liquigas

INCLUDING THE BIGGEST VLGC'S CAN
TRANSIT THE PANAMA

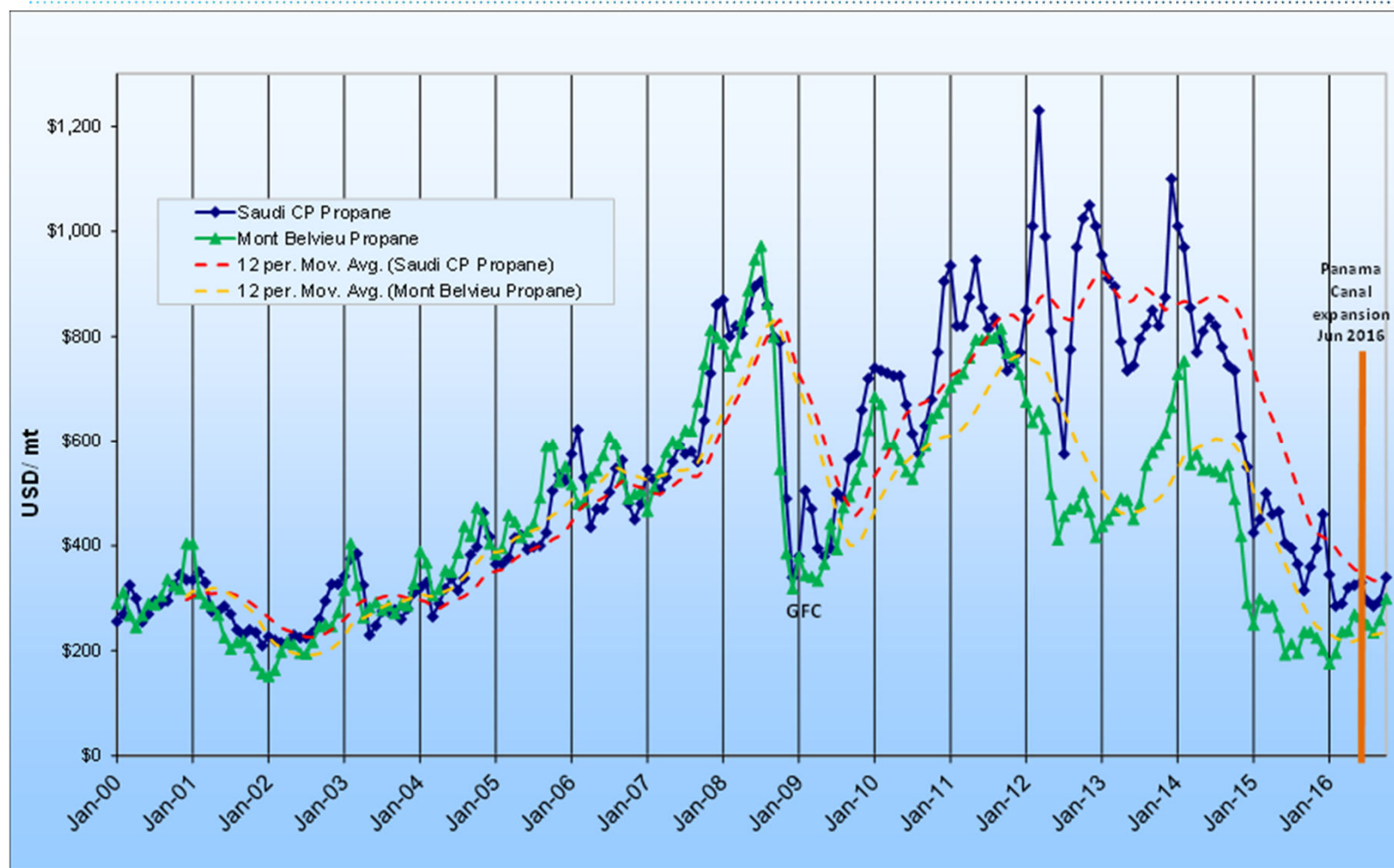


Liquigas

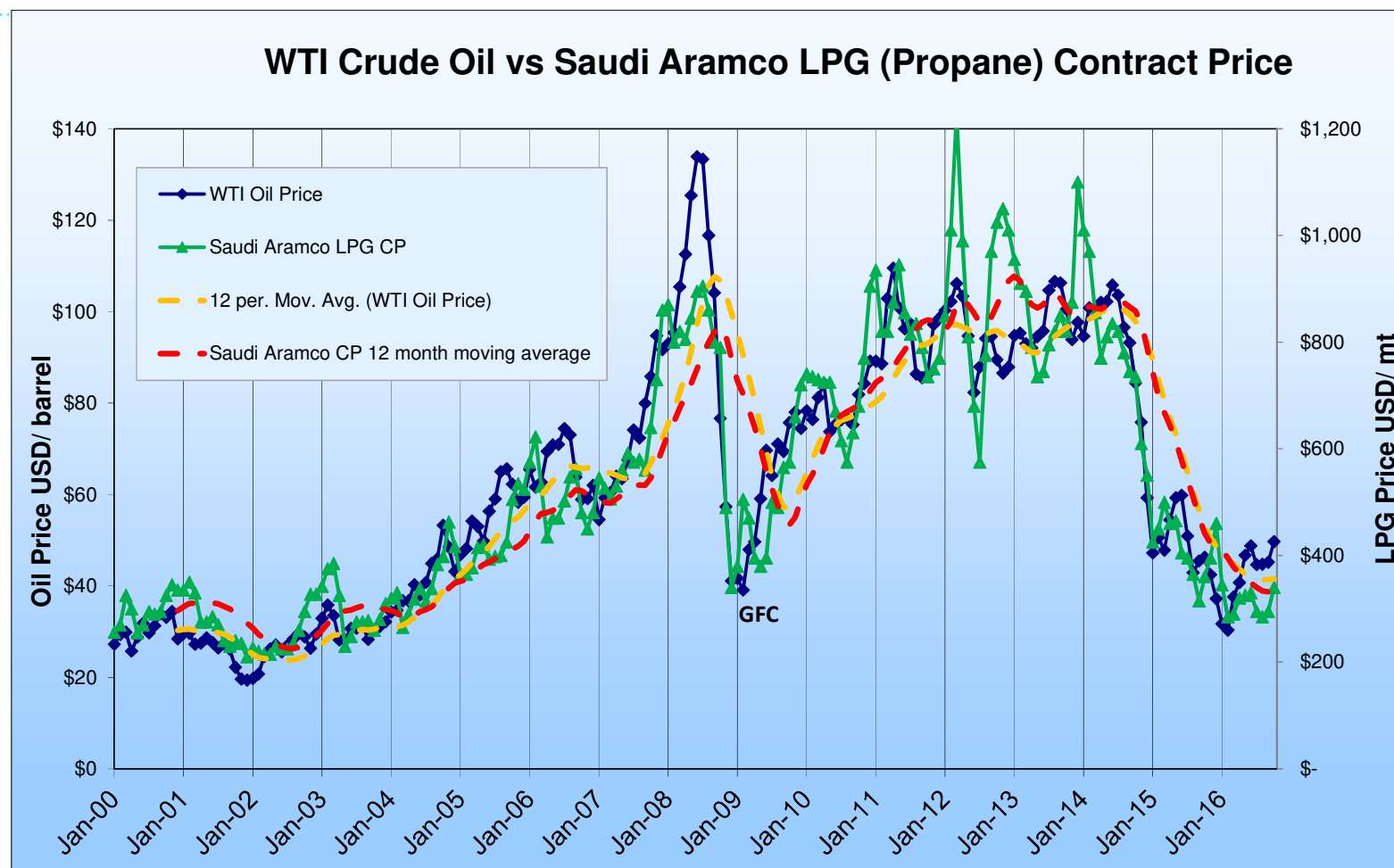
CLOSE UP FOR SCALE



EAST MEETS WEST – SAUDI CP V MONT BELVIEU (US)

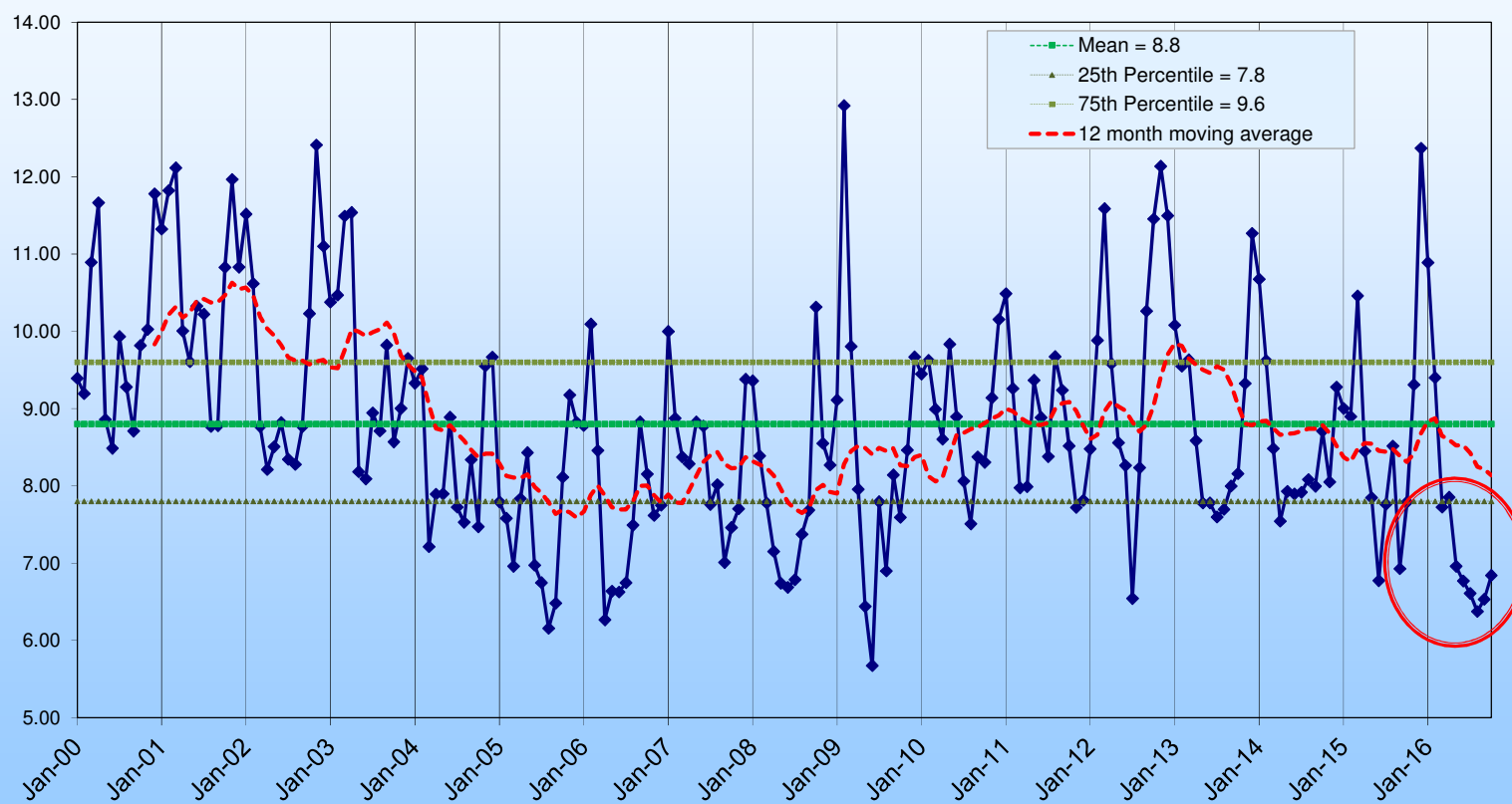


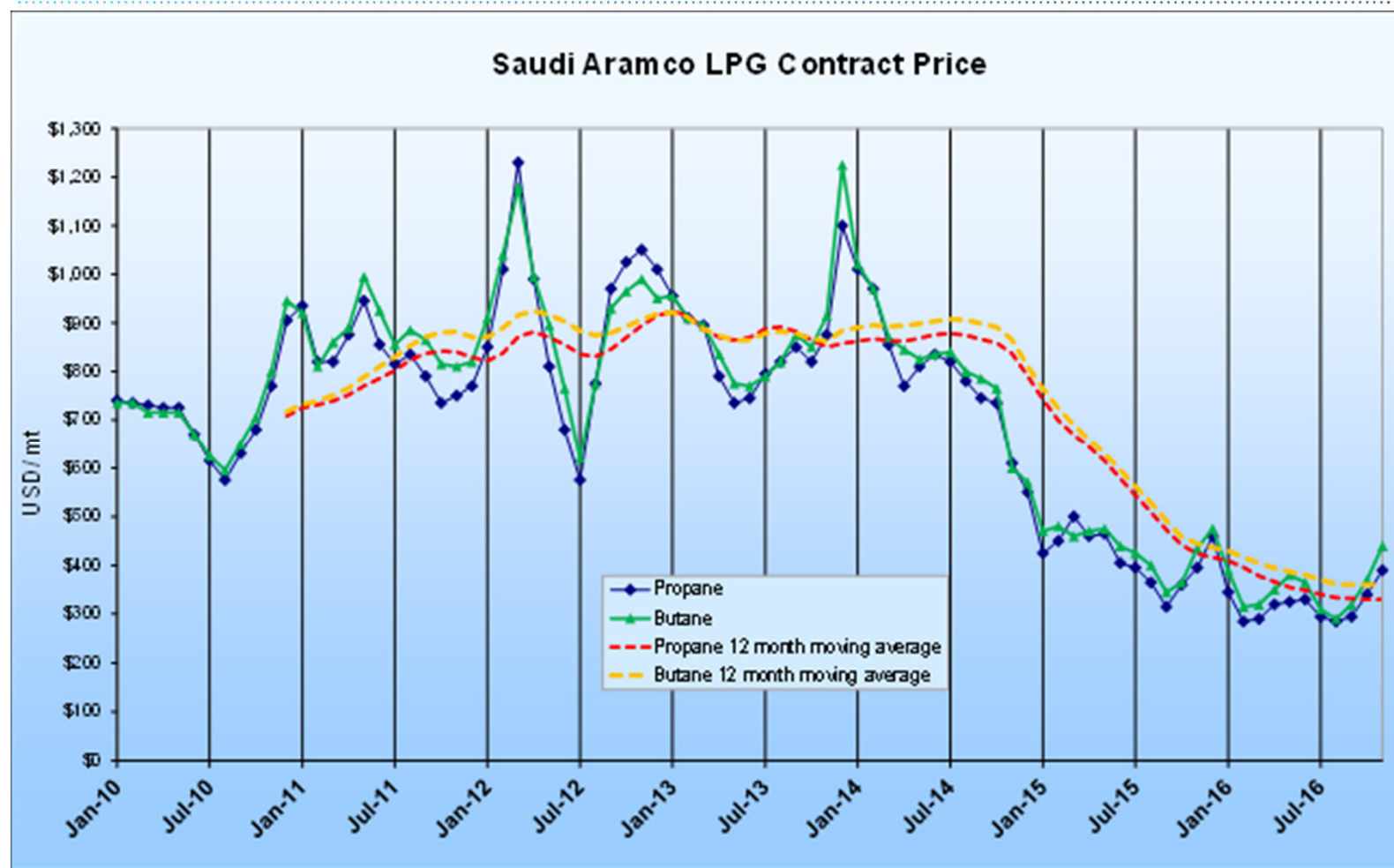
ENERGY COSTS OVER TIME





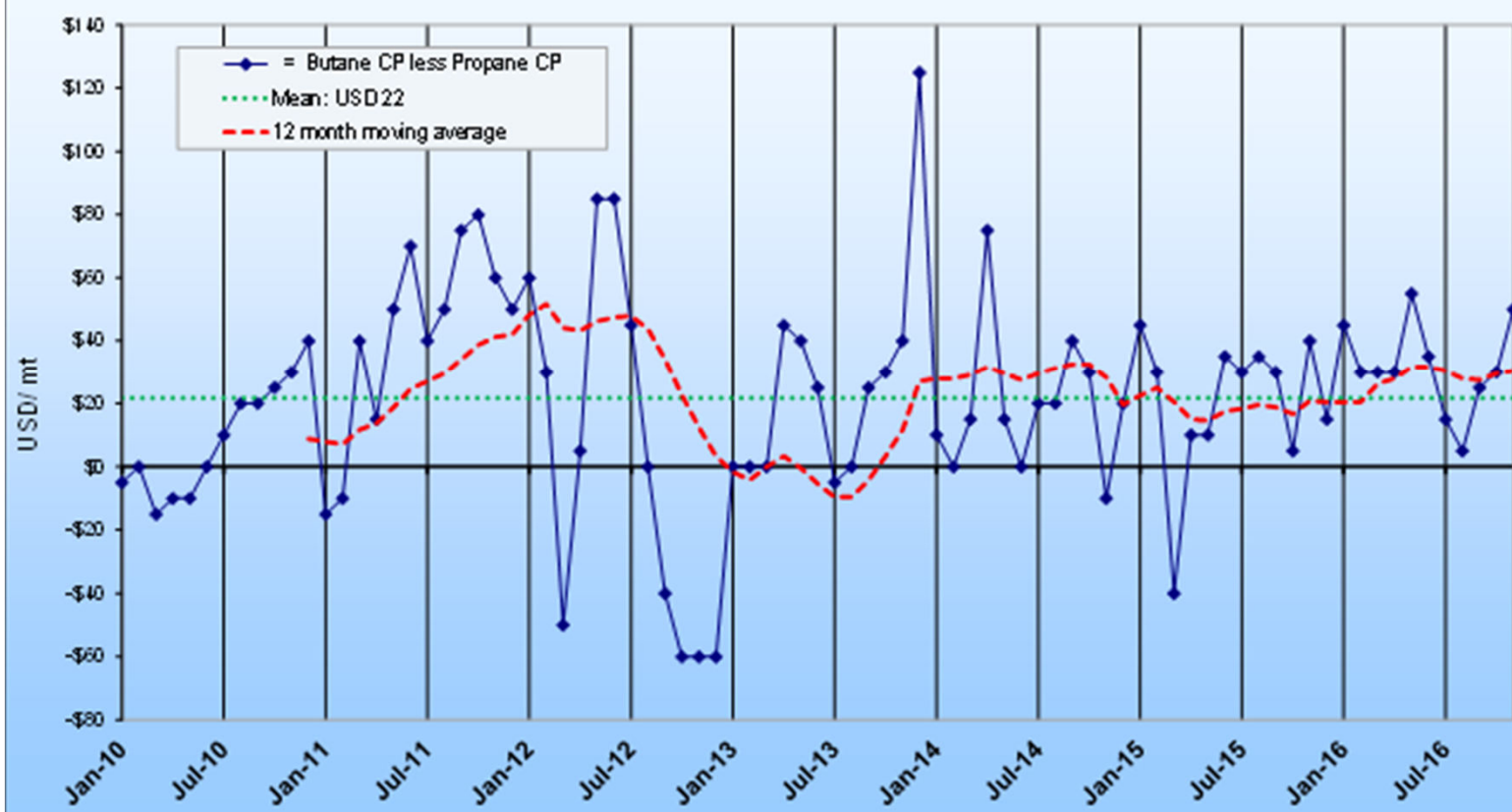
Saudi Aramco LPG (Propane) Contract Price / WTI Oil Price relationship







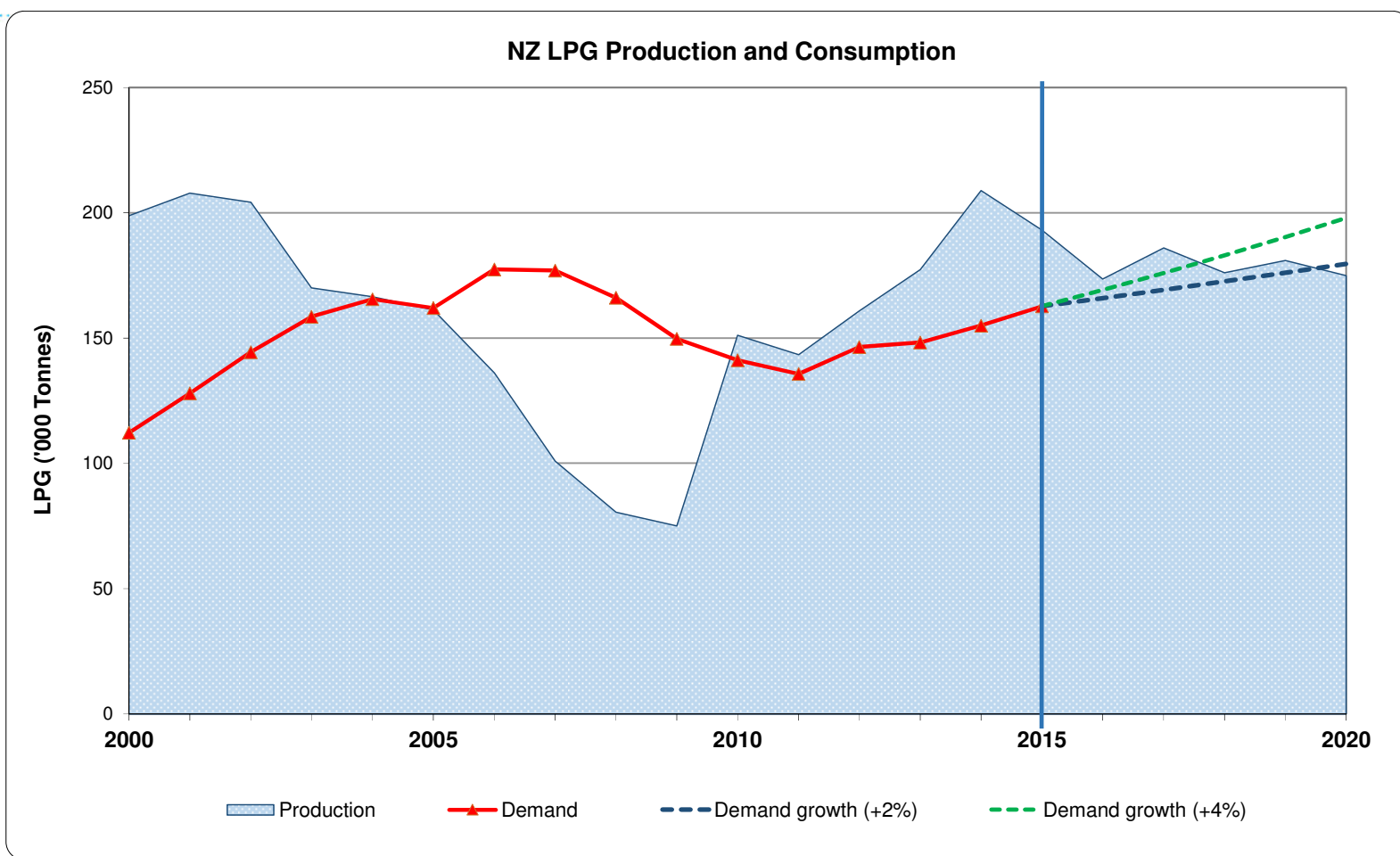
Saudi Aramco Contract Price: Butane vs Propane





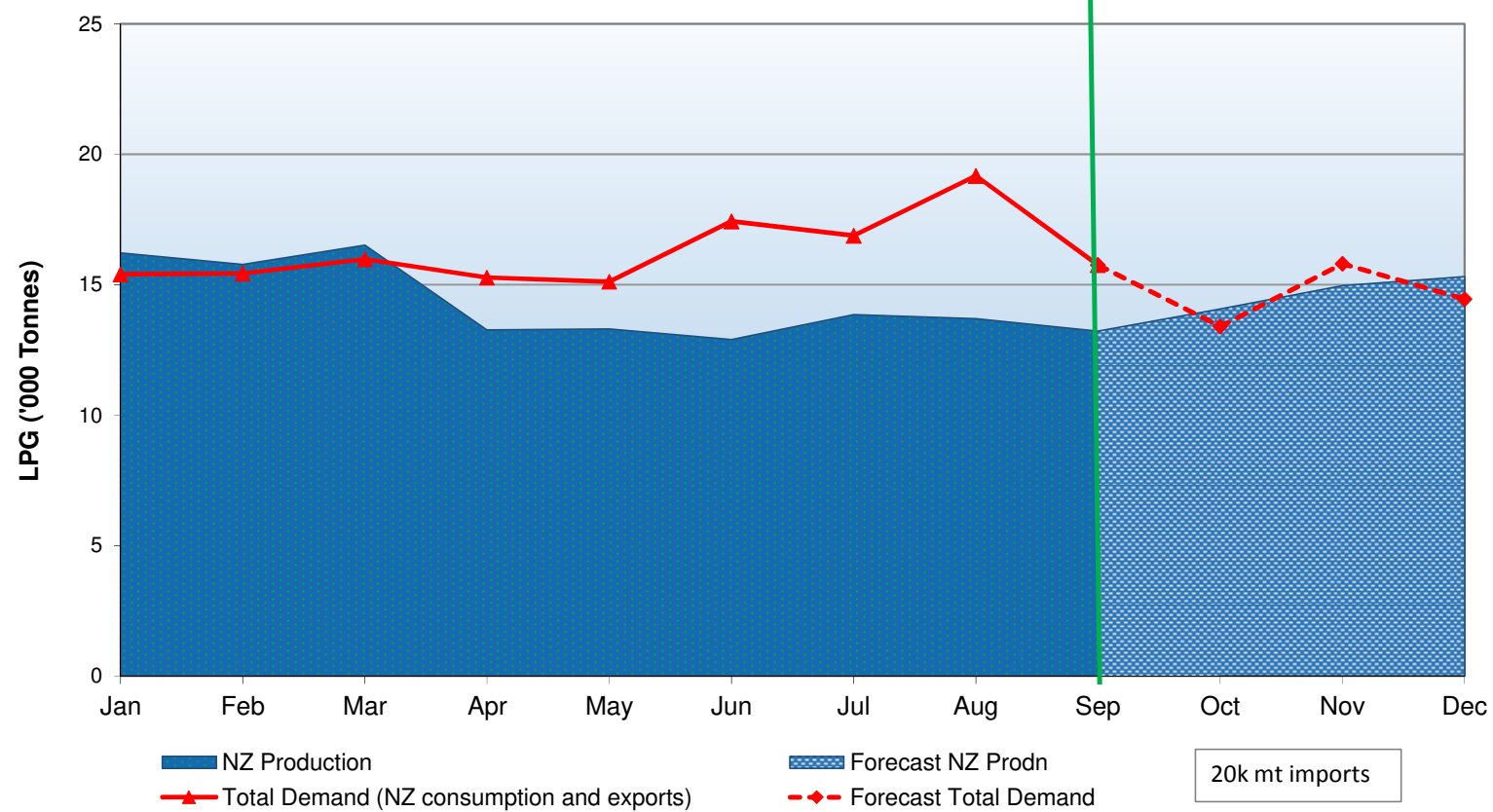
Part B

NZ Supply and Demand



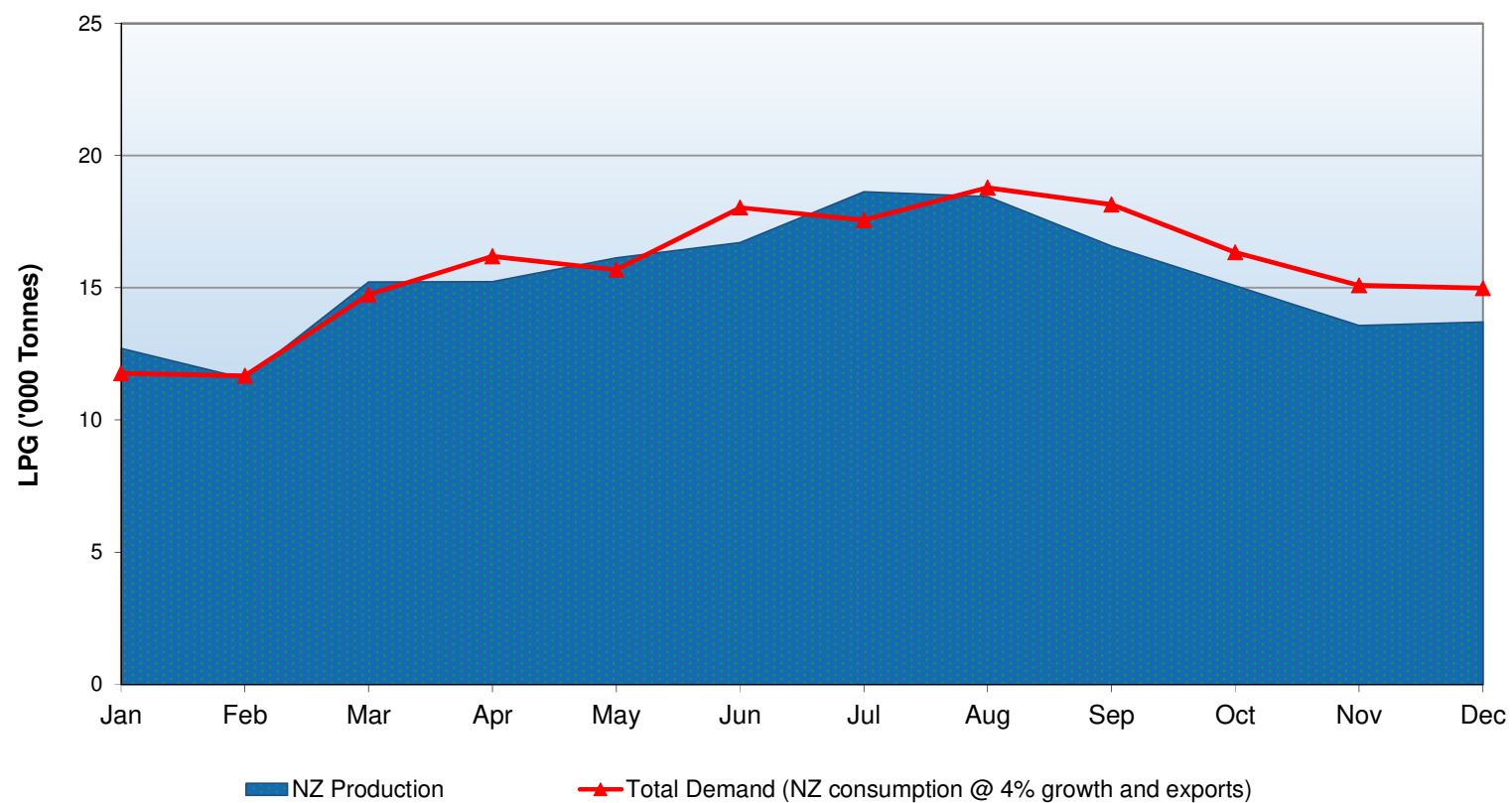


2016 LPG Production and Demand



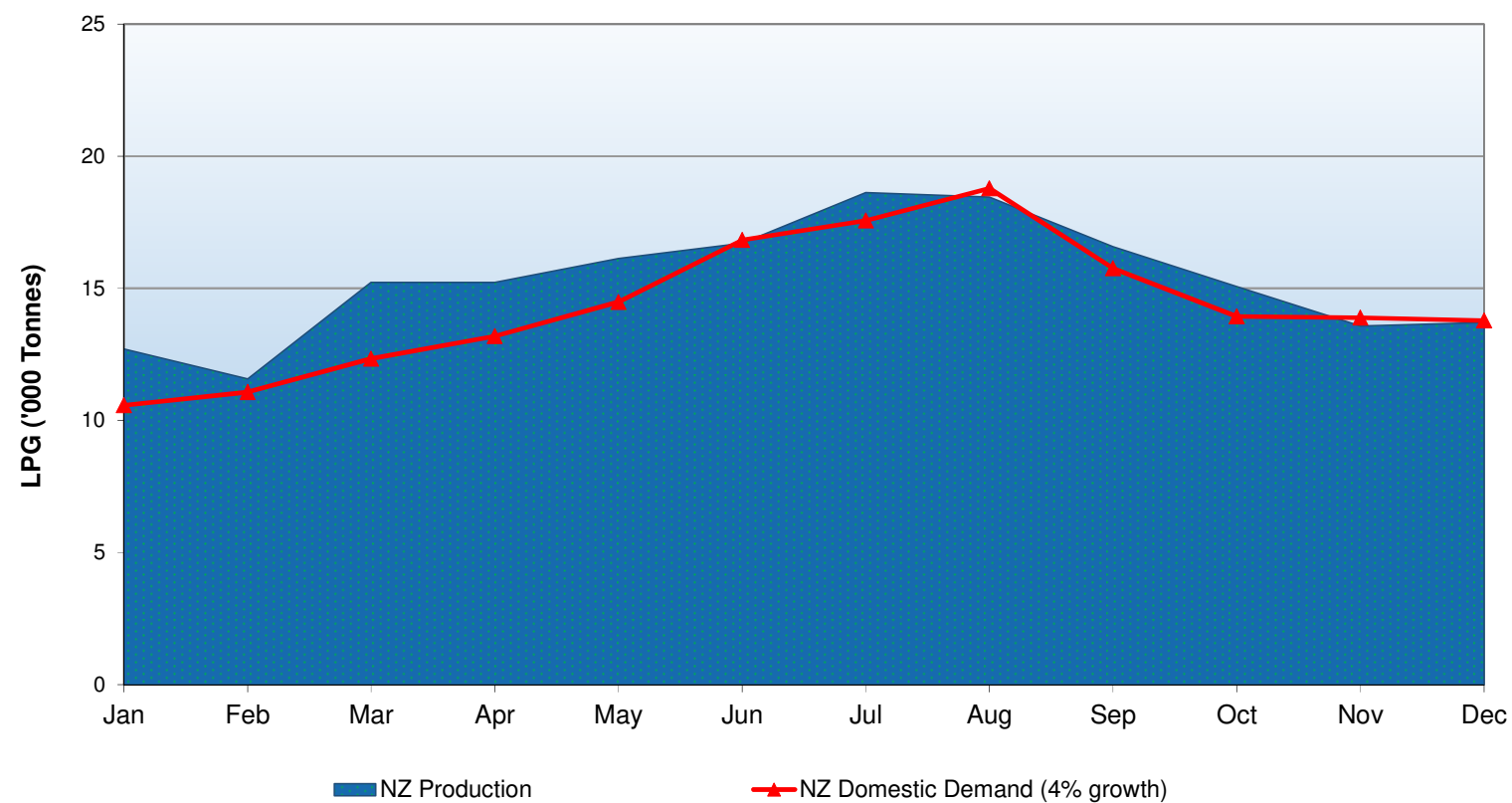


2017 LPG Production and Demand





2017 LPG Production and NZ Demand



IMPORT AND EXPORT PARITY



- Import Parity** = the cost of LPG (propane) landed in New Zealand
= the price of the LPG at source (Sydney) plus shipping costs
- Export Parity** = the (FOB) price received by NZ LPG exporters
= the price received for the LPG at the export destination, less shipping costs

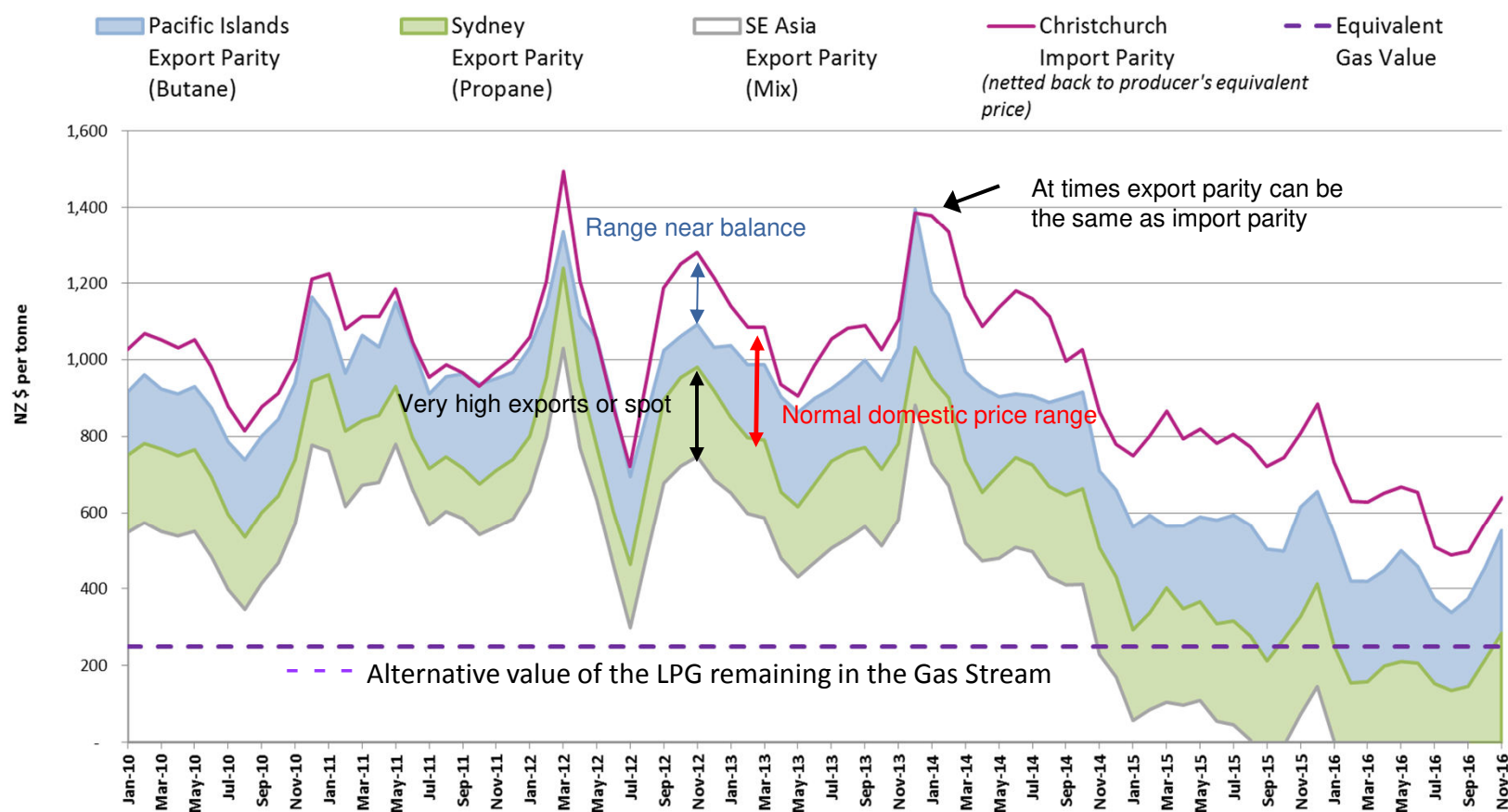
Export parity varies according to the export destination depending on:

- 🔥 Distance which determines shipping cost
- 🔥 Their next best alternative supply cost

For this presentation these values have been referred to New Plymouth to provide a consistent reference point.



Import vs Export Parity



Liquigas

NORTH ISLAND SUPPLY SECURITY – AN EMERGING ISSUE



NORTH ISLAND SECURITY OF SUPPLY STUDY



Issues

A Security of Supply Study is needed because our Auckland ship load-in facility can no longer economically receive LPG by ship:

- Since 2010, Liquigas Auckland has received less than one ship delivery of LPG per year.
- The substantial fixed costs of maintaining safe marine operations in the Manukau Harbour will shortly fall solely to Liquigas after Holcim's exit.
- Our commercial position for ship discharge into Auckland (even before this change) was untenable.
- Liquigas' Auckland facility is currently the only import terminal in the North Island.
- We need to look at lower cost alternatives.

We are reviewing the options that the Industry has to ensure that security of supply is maintained.

SUMMARY – SUPPLY AND DEMAND



The Big Picture

- Currently Supply outpaces consumption around the World by some 8-10 million tons a year.
- We can expect oversupply and consequently relatively soft pricing to remain for the short term.
- The Far East remains the largest marketplace in the world for LPG, and is now nicely sandwiched between the world's two biggest supplying areas – The Middle East and North America.
- The opening of an enlarged Panama Canal is likely to assist LPG trade over time.

Closer to Home

- NZ supply and demand is returning to balance – after a number of years of surplus.
- This balance is likely to remain for the next couple of years with the likelihood of being long in summer and potentially short in winterrequiring some LPG imports.
- The gap between import parity and butane export pricing has recently narrowed due to favourable shipping rates.
- We need to look at lower cost alternatives for Importing LPG into the North Island.

Thanks.

Any Questions?

