



INDEPENDENT
MARKET
OPERATOR

2014 December Gas Statement of Opportunities

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Stakeholder Presentation 3 February 2015



Forecast context

Findings

Forecasts

Other information

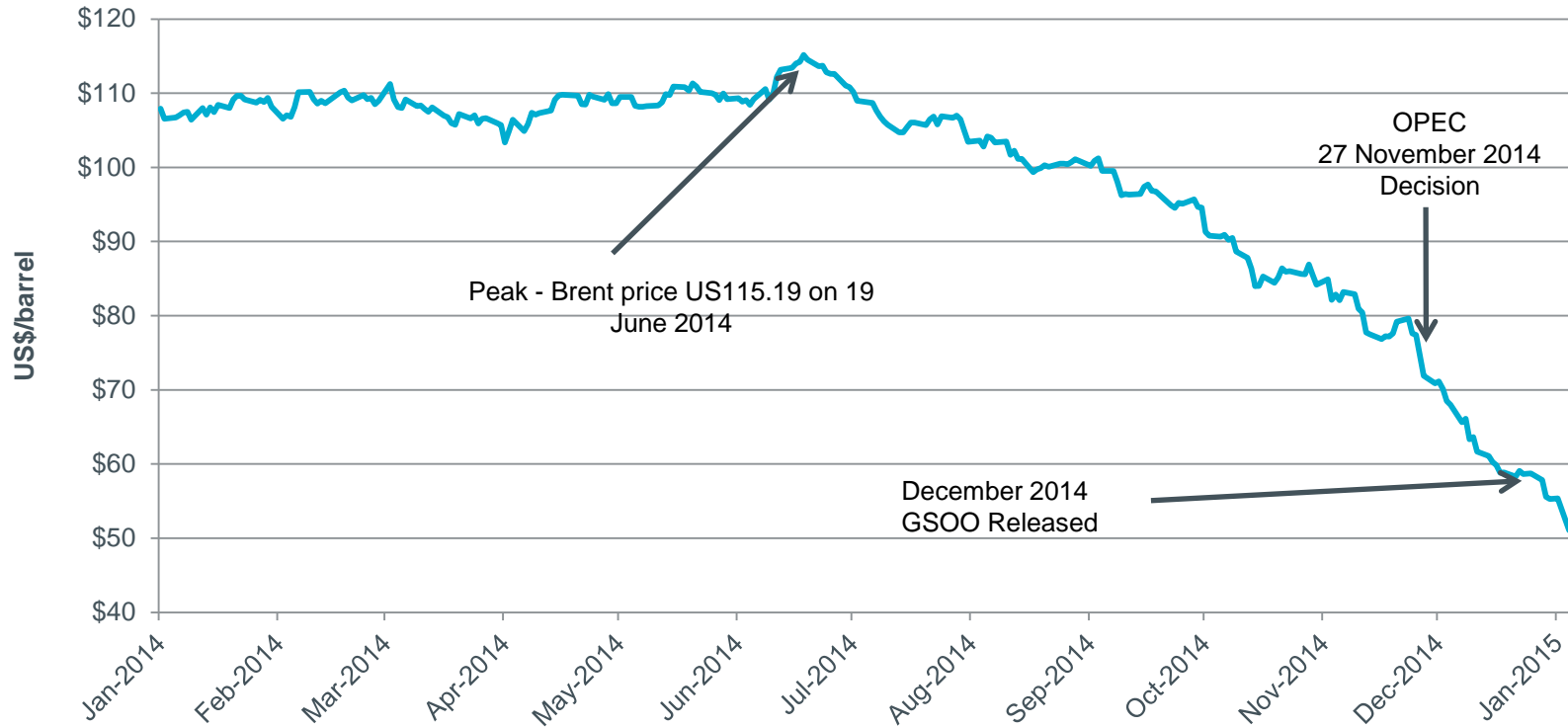


Forecast context

Challenging time to prepare long-term forecasts of gas demand and supply:

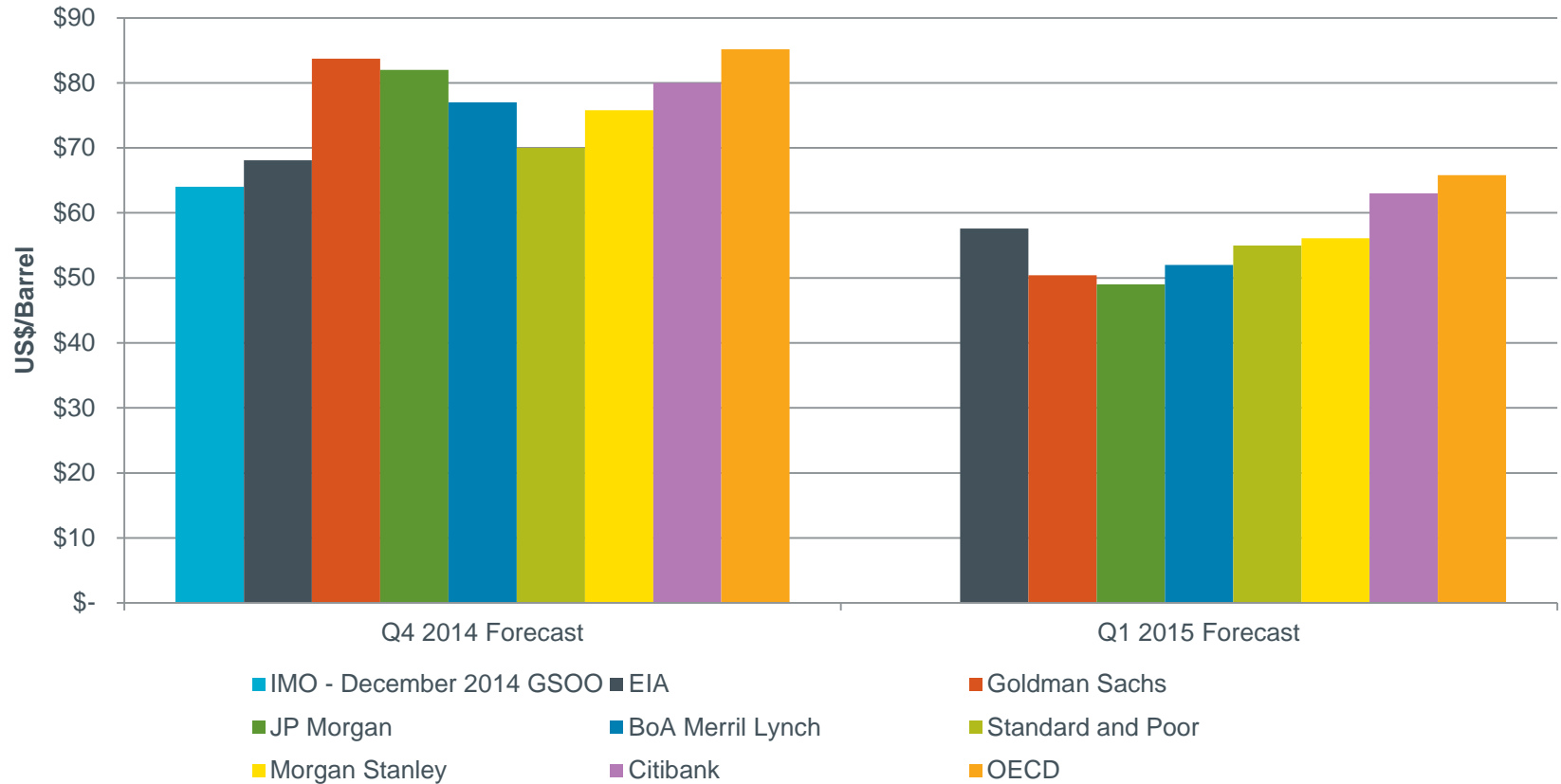
- Volatility in oil prices
- Significant fall in the prices of WA commodities
- North West Shelf and related commercial decisions
- Falling Asia Pacific gas prices, making supply to the domestic gas market relatively more attractive

Falling oil prices, January 2014 – January 2015 (Brent)



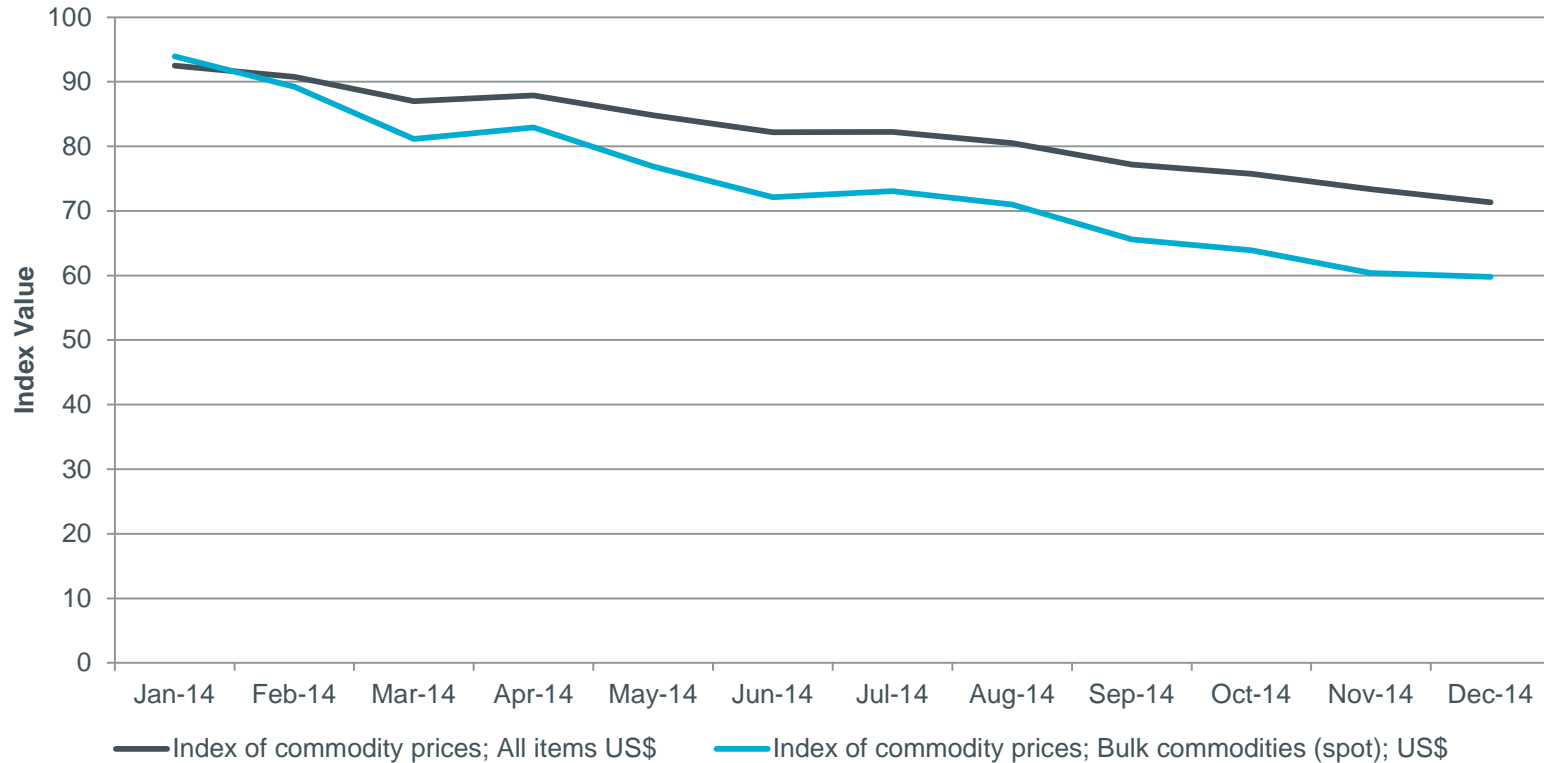
Source: EIA, Brent Spot Prices FOB

Changing oil (Brent and average) forecasts for 2015



Source: Compiled by the IMO

Commodity prices, January 2014 – December 2014



Source: Reserve Bank of Australia, Base Year = 2012-13

North West Shelf update

NWS and WA Government signed an amendment to the State Agreement on 20 November 2014 (awaiting ratification by WA Parliament) that requires the NWS to:

- adhere to the WA Government's domestic gas policy – reserve approximately 715 PJ
- upgrade and maintain the NWS domestic gas facilities with sufficient capacity
- diligently market the committed gas quantities to the domestic market
- report to the WA Government annually

While the Agreement Amendment provides more domestic supply certainty, several on going decisions have to be made.

North West Shelf update

It now appears likely that some supply will be available from the NWS beyond 2020 but
the amendment does not specify :

- the timing or a minimum amount of domestic gas that must be made available beyond 2020
- the minimum level of domestic gas production capacity that must be maintained

The availability of domestic gas from the NWS remains contingent on whether the NWS can profitably and commercially maintain gas supply to the domestic market and multiple investment decisions (beyond Persephone) are yet to be made by the JVs.

However, in the 2015-2024 period, Hess may contract NWS to supply domestic gas (subject to commercial negotiation). Hess announced on 23 December 2014 its intention to develop and toll its WA gas reserves through the NWS processing facilities.

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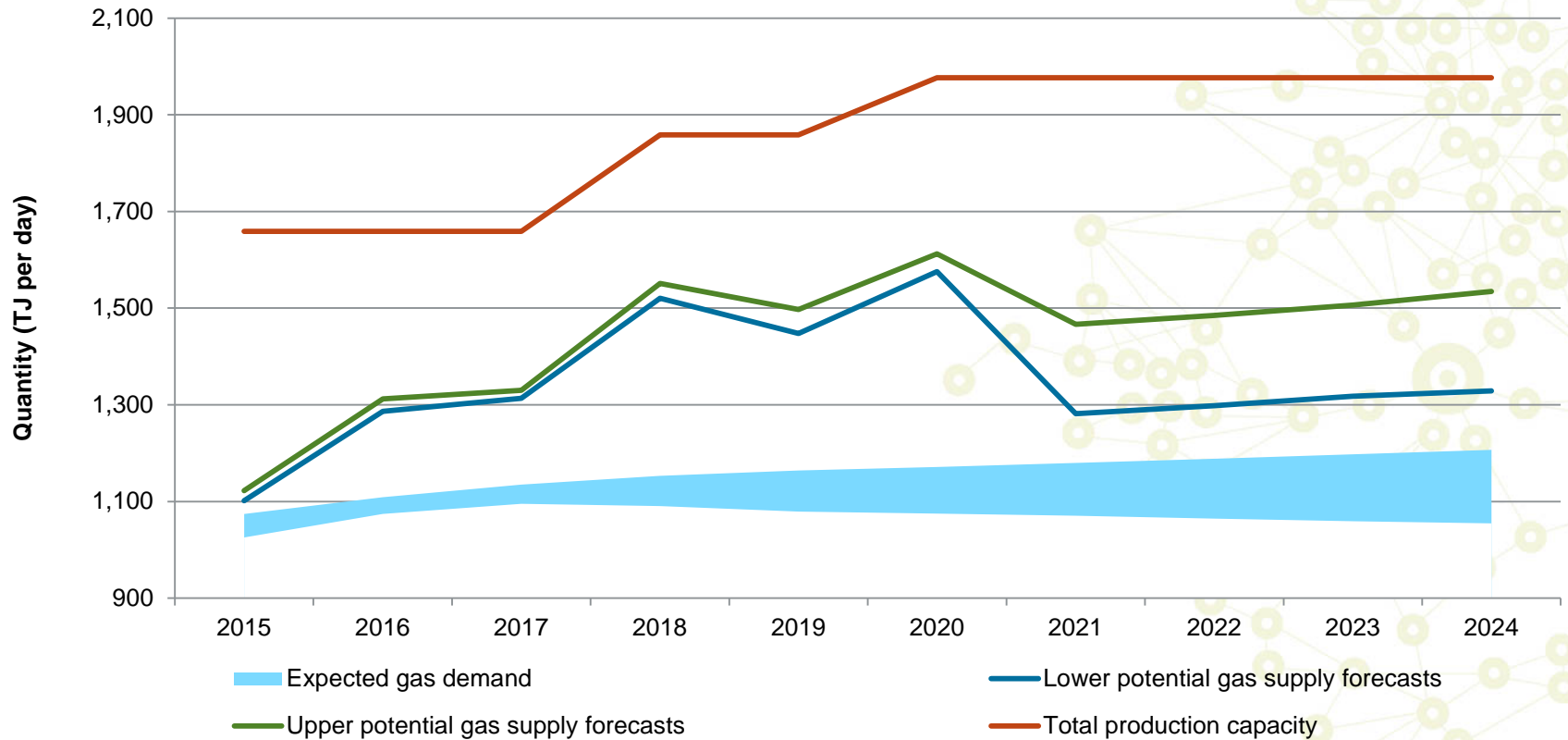
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Key findings

- The supply of gas to the domestic market is expected to be adequate to meet demand over the forecast period
- However, with several commercial and investment decisions yet to be made, the extent of any future supply from the NWS is not yet known with certainty, and the supply-demand balance may tighten after 2020

Supply – Demand balance



Source: NIEIR and IMO Estimates, 2015-2024

Other findings

Gas Demand

- Demand in the non-SWIS areas will grow faster than SWIS
- Rapid growth of total gas demand (domestic & LNG); start-up of Gorgon, Wheatstone and Prelude domestic gas & LNG projects

Resources and Reserves

- Conventional gas reserves is estimated to last between 12 to 37 years, depending on technology (Table 9.4), unconventional reserves (105 years)
- Gas production in WA remain reliant on conventional reserves in the Carnarvon Basin (Table 9.5)
- Exploration of unconventional resources need to be fostered

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Gas demand 2015 – 2024

Growth in the early years of the gas demand forecasts is driven by new large gas-consuming projects. These projects include:

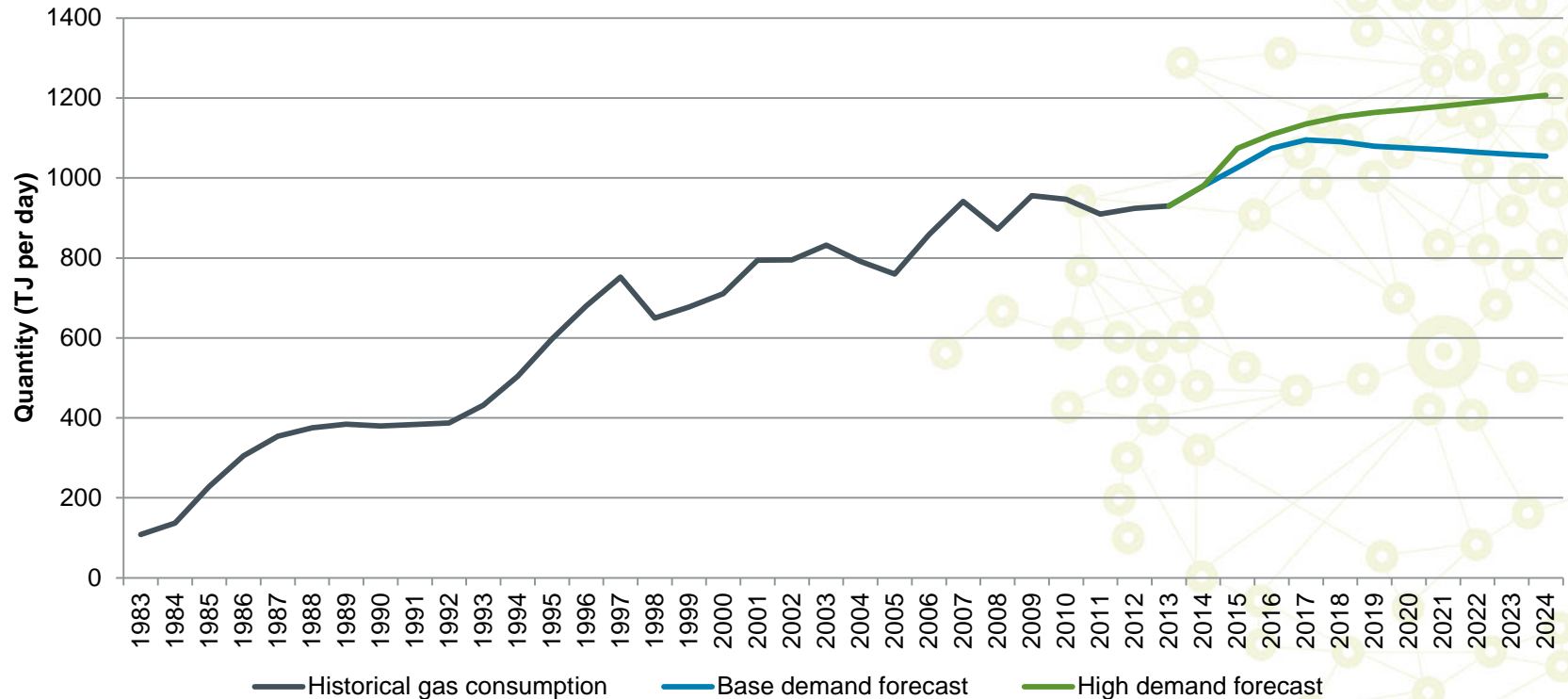
- Sub161's CNG facility at Port Hedland
- the Fortescue River Gas Pipeline
- the Eastern Goldfields Gas Pipeline

And increased gas consumption relating to:

- Alinta Energy's Newman Power Station which will supply electricity to the Roy Hill mine
- operation of TransAlta's South Hedland Power Station
- the Pilbara Temporary Power Station
- CITIC Pacific's Sino Iron's magnetite mine

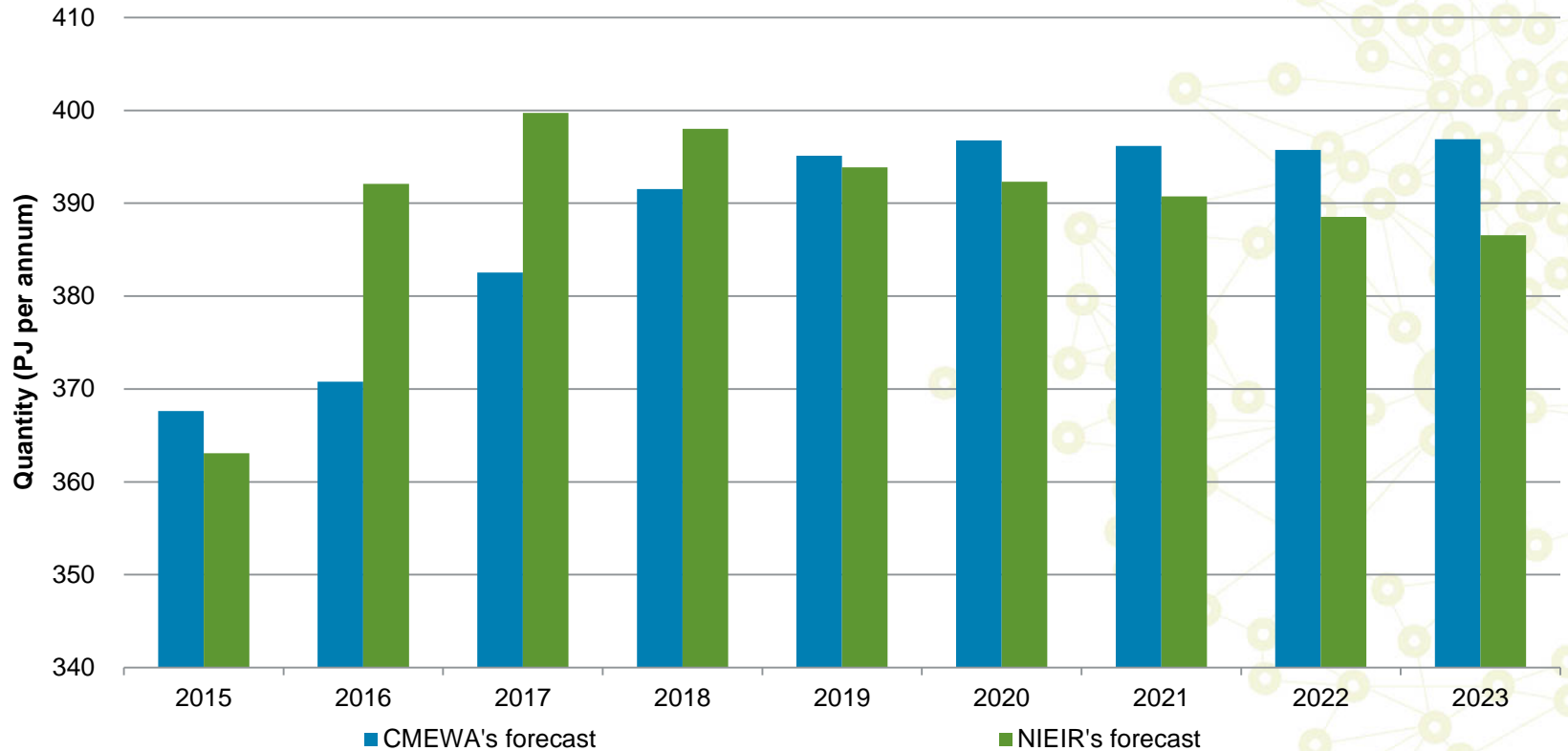


Domestic gas demand and forecasts 1983 – 2024



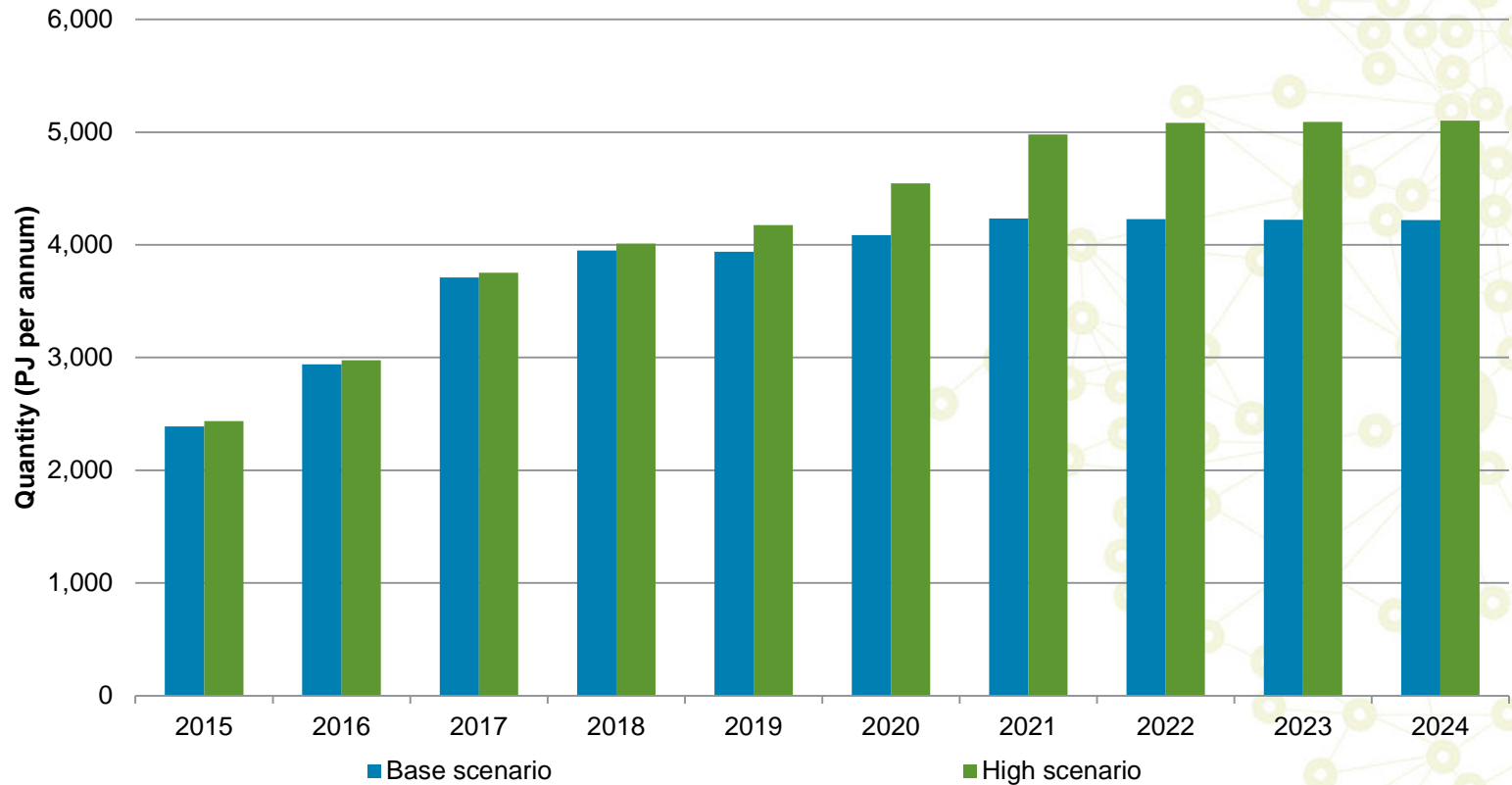
Source: DMP and IMO Estimates, 2015-2024

IMO and CMEWA WA demand forecasts 2015 – 2023



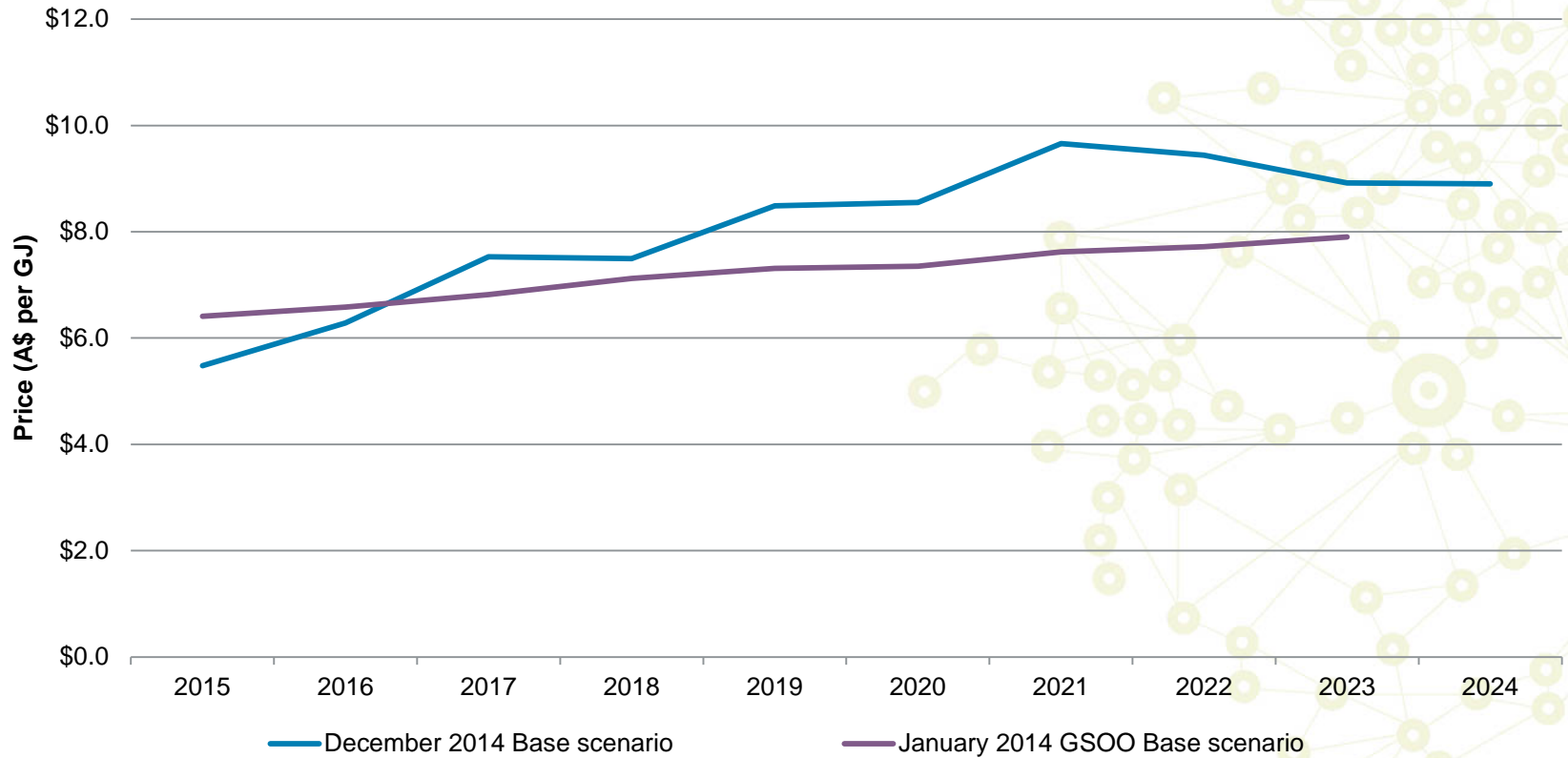
Source: CMEWA, Deloitte Australia and IMO Estimates, 2015-2023

Total gas demand forecasts 2015 – 2024



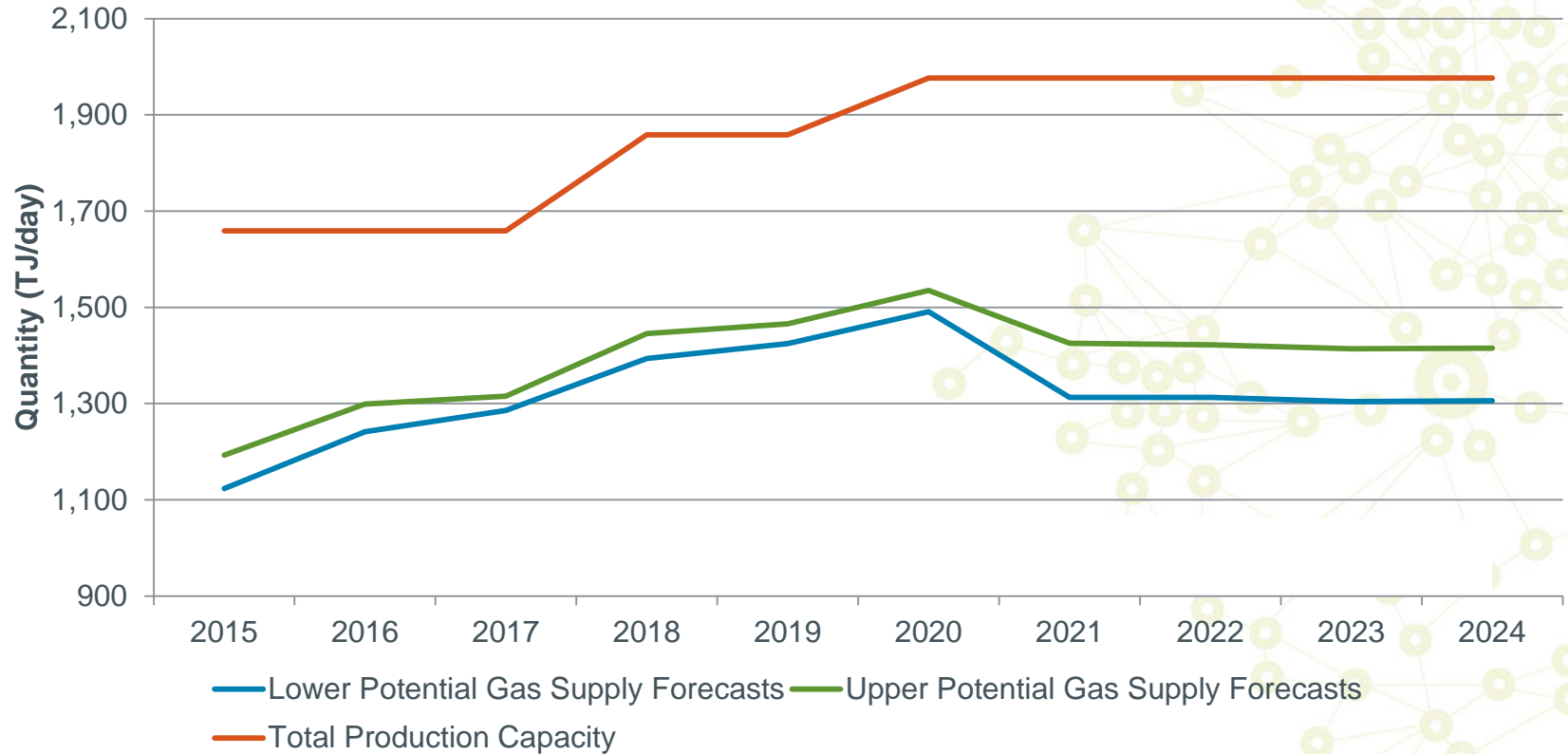
Source: NIEIR and IMO Estimates, 2015-2024

Forecast prices used in modelling 2015 – 2024



Source: NIEIR and IMO Estimates 2015-2024

Gas supply forecasts 2015 – 2024



Source: IMO Estimates 2015-2024

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What's new in the December 2014 GSOO

Modelling

- Prospective gas projects included in High gas demand scenario
- Improvements to gas consumption estimates of iron magnetite projects
- Improvements to potential gas supply model (considers non-LNG linked facilities)
- LNG feedstock and processing requirements (now considers utilisation rates)

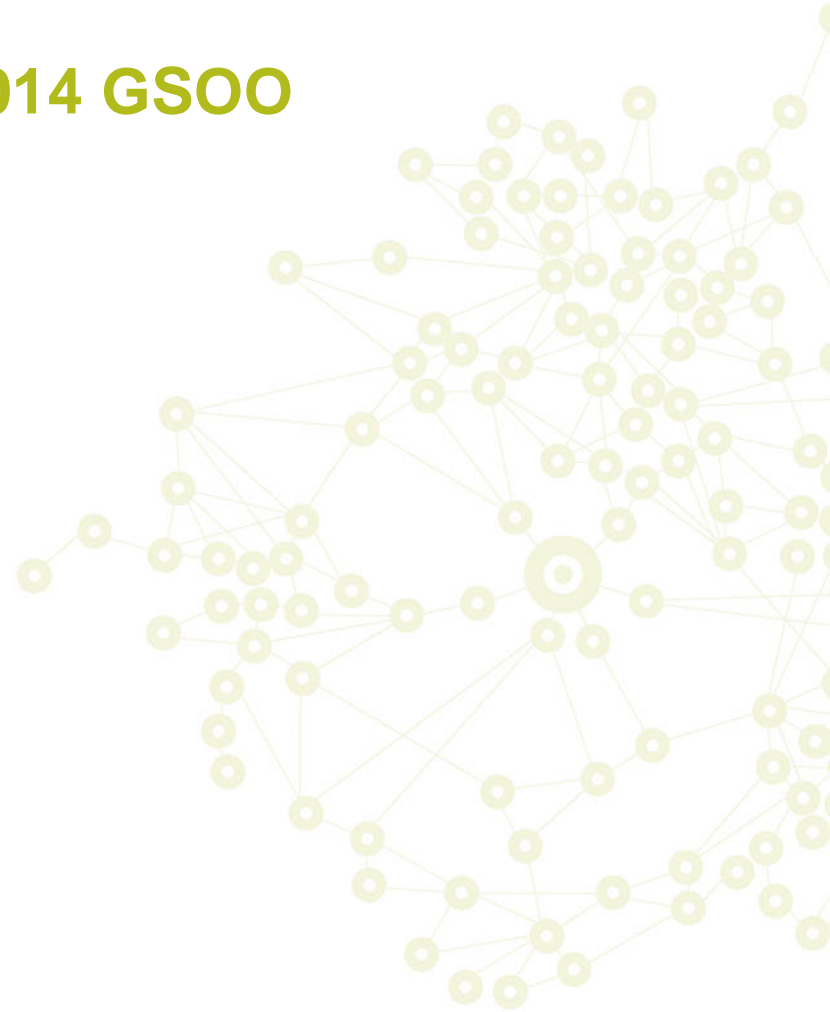
Information

- Greater use of GBB data (more details to come)
- More detailed analysis of demand and its drivers

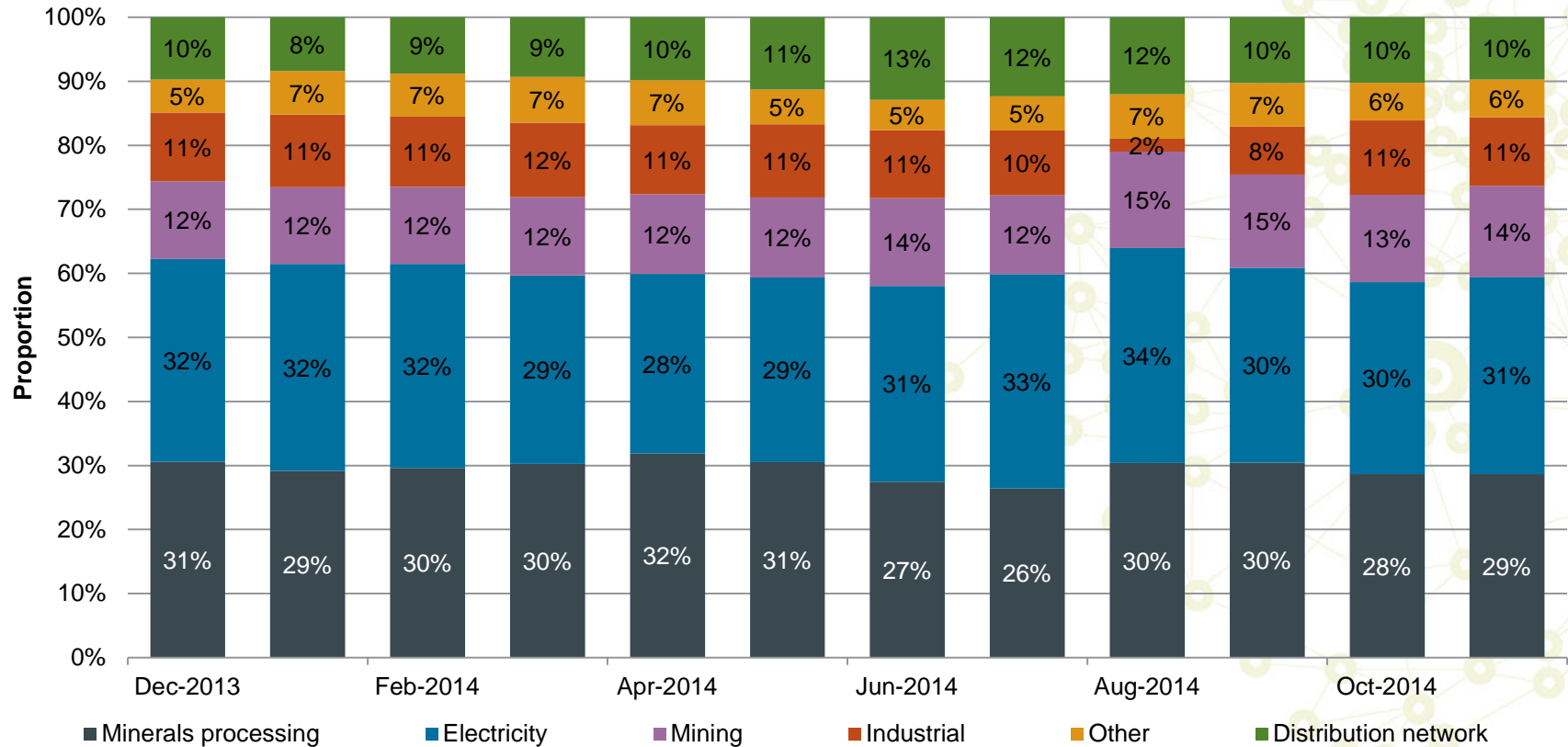
Other information in December 2014 GSOO

Additional Information on:

- Drivers of domestic gas consumption
- Gas production outages
- Gas injection and withdrawals (Mondarra)
- Gas production statistics
- Gas shipping by pipeline

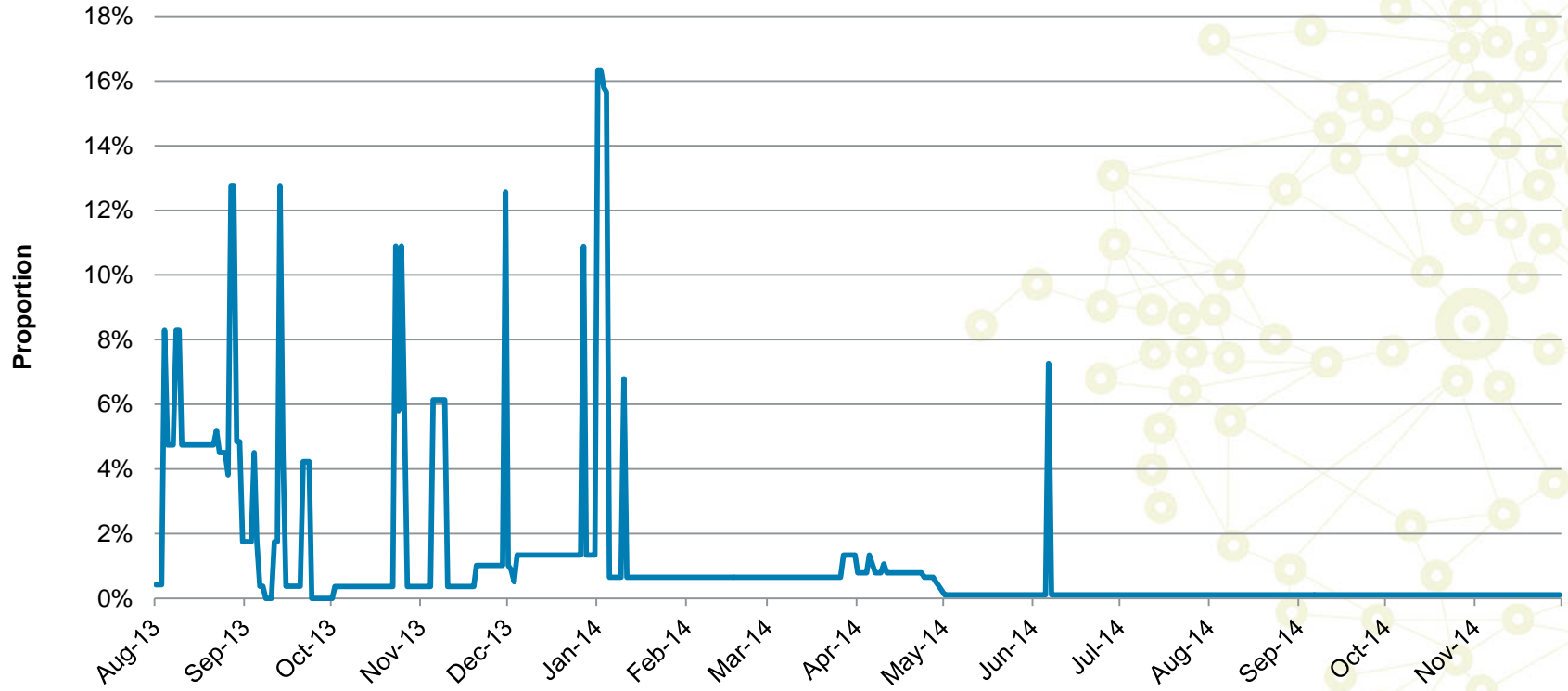


Gas demand, August 2013 – November 2014



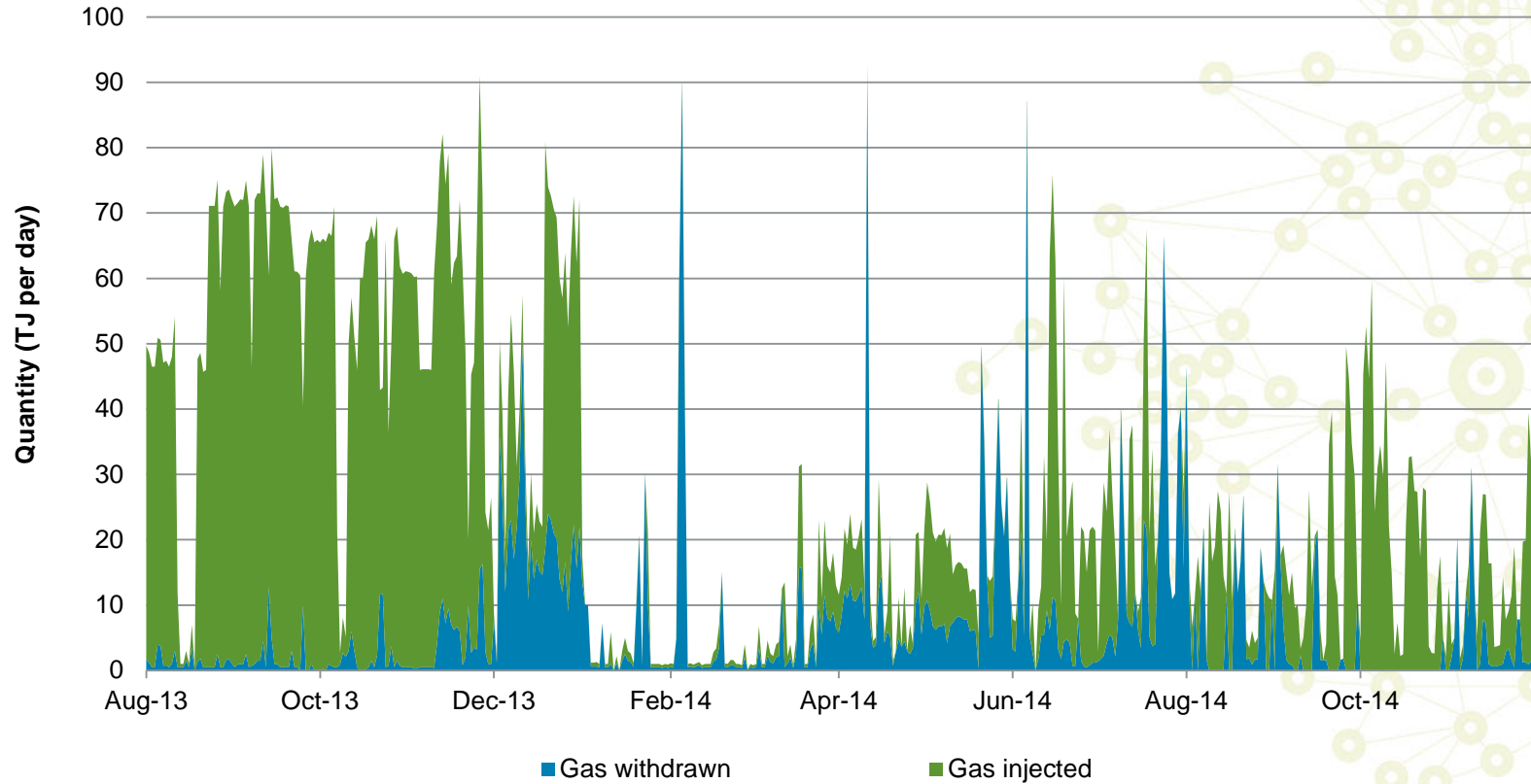
Source: IMO GBB

Production facility outages, August 2013 – November 2014



Source: IMO GBB

Gas injections and withdrawals (Mondarra), August 2013 – November 2014



Source: IMO GBB

Gas production statistics, Q4 2013 to Q3 2014

Facility	Nameplate capacity (TJ per day)	Peak production October 2013 to September 2014	Day of peak production	Average production			
				Q4 2013 (TJ per day)	Q1 2014 (TJ per day)	Q2 2014 (TJ per day)	Q3 2014 (TJ per day)
Beharra Springs	19.6	19.8	5/10/2013	10.2	9.2	13.9	18.1
Dongara	7	2.5	4/9/2013	2.1	1.8	1.7	1.4
Devil Creek	220	172.5	22/11/2013	135.6	69.6	65.8	76.2
KGP	630	671.9	1/8/2013	443.6	459.2	470.0	493.7
Macedon	200	213.1	10/9/2013	164.5	141.5	142.9	152.3
Red Gully	10	14.7	14/4/2014	7.6	6.0	4.0	7.7
Varanus Island	390	371.7	3/1/2014	272.5	299.4	271.6	234.9
Total	1476.6			1,036.1	986.7	969.9	984.3

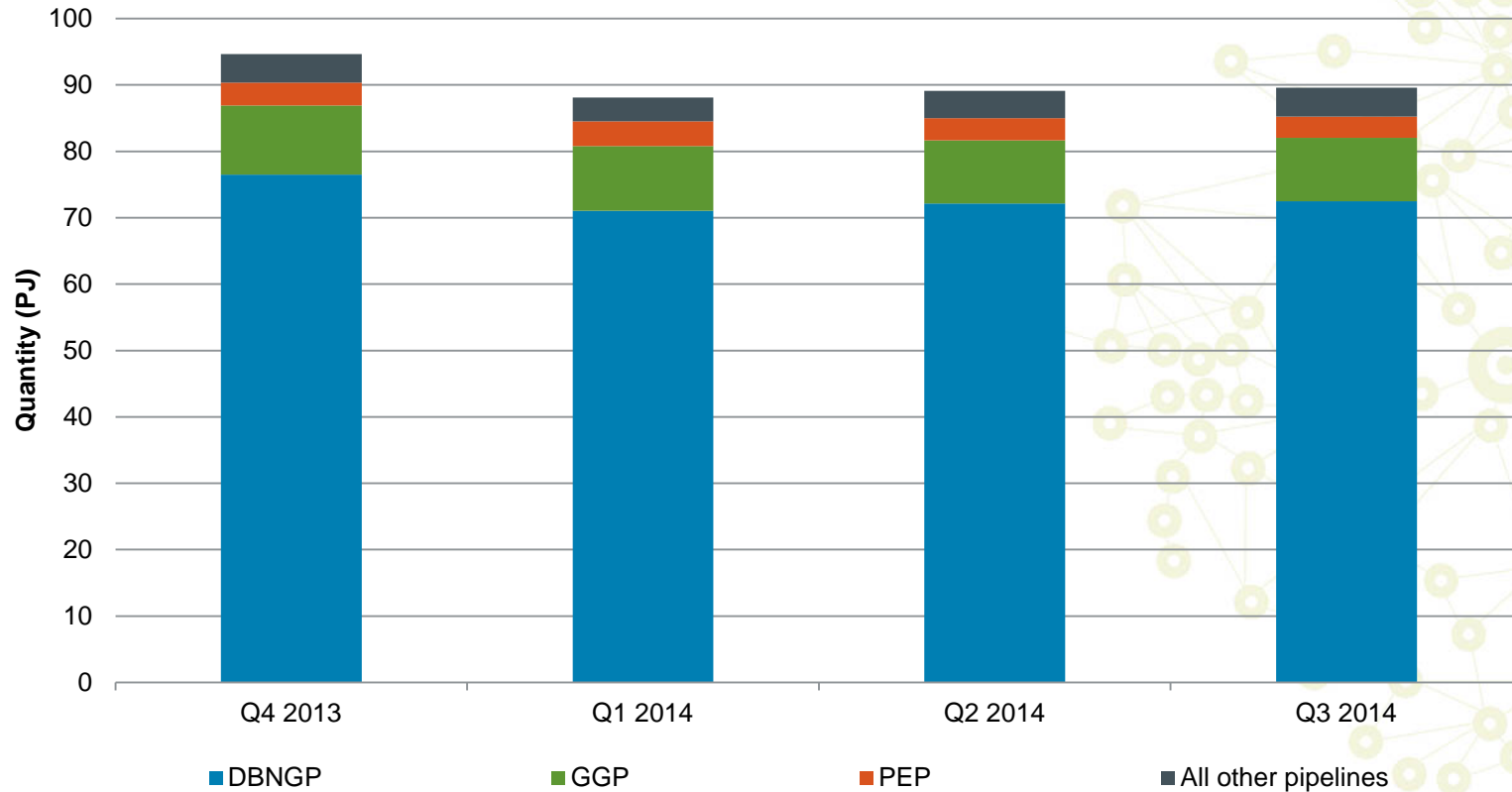
Source: IMO GBB

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Source: IMO GBB

Quantity of gas shipped by pipeline, Q4 2013 to Q3 2014



Source: IMO

Events since publishing December 2014 GSOO

- Oil prices (Brent and WTI) falls below US\$50/bbl -> Contracted LNG prices falls below spot (Japan)
- First shipment of LNG leaves Queensland's QCLNG project
- Shell drops Arrow LNG project
- Quantity of gas reserves relating to Red Gully JV are upgraded
- ACCC commences an inquiry into Woodside's purchase of Apache Energy's interests
- Ivernia's Paroo lead mine placed into care and maintenance (from February 2015)
- TEPCO and Chubu Electric establishing 50/50 JV (to manage all energy assets)
- Proposed Panama Canal charges for LNG carriers released