

Energy Cost Impact on the Supply Chain

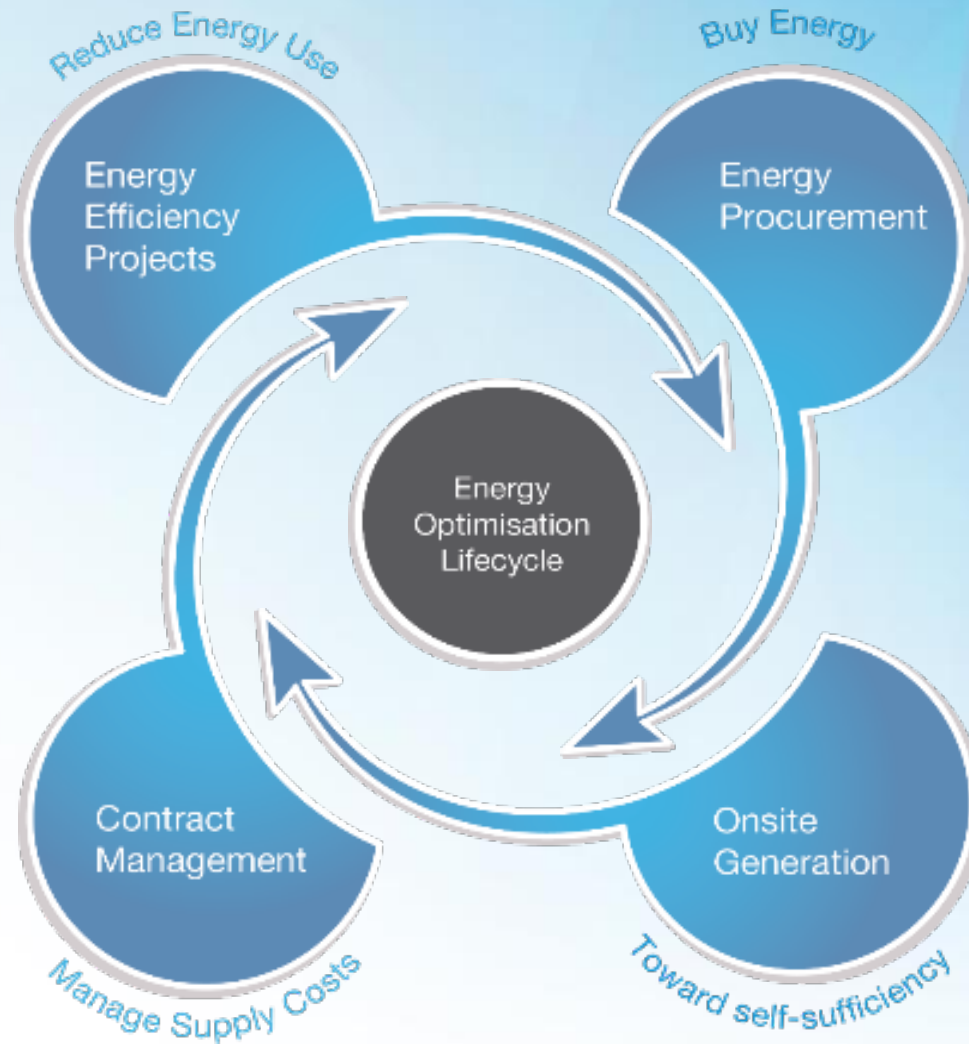
Jeremy Halstead, Energy Action

A person is sitting on a wooden pier or dock, silhouetted against a bright, golden sunset. The sun is low on the horizon, creating a strong glow and reflecting on the water. The person's legs and feet are visible, resting on the pier. The background shows a calm body of water and a dark, silhouetted shoreline with trees.

Agenda

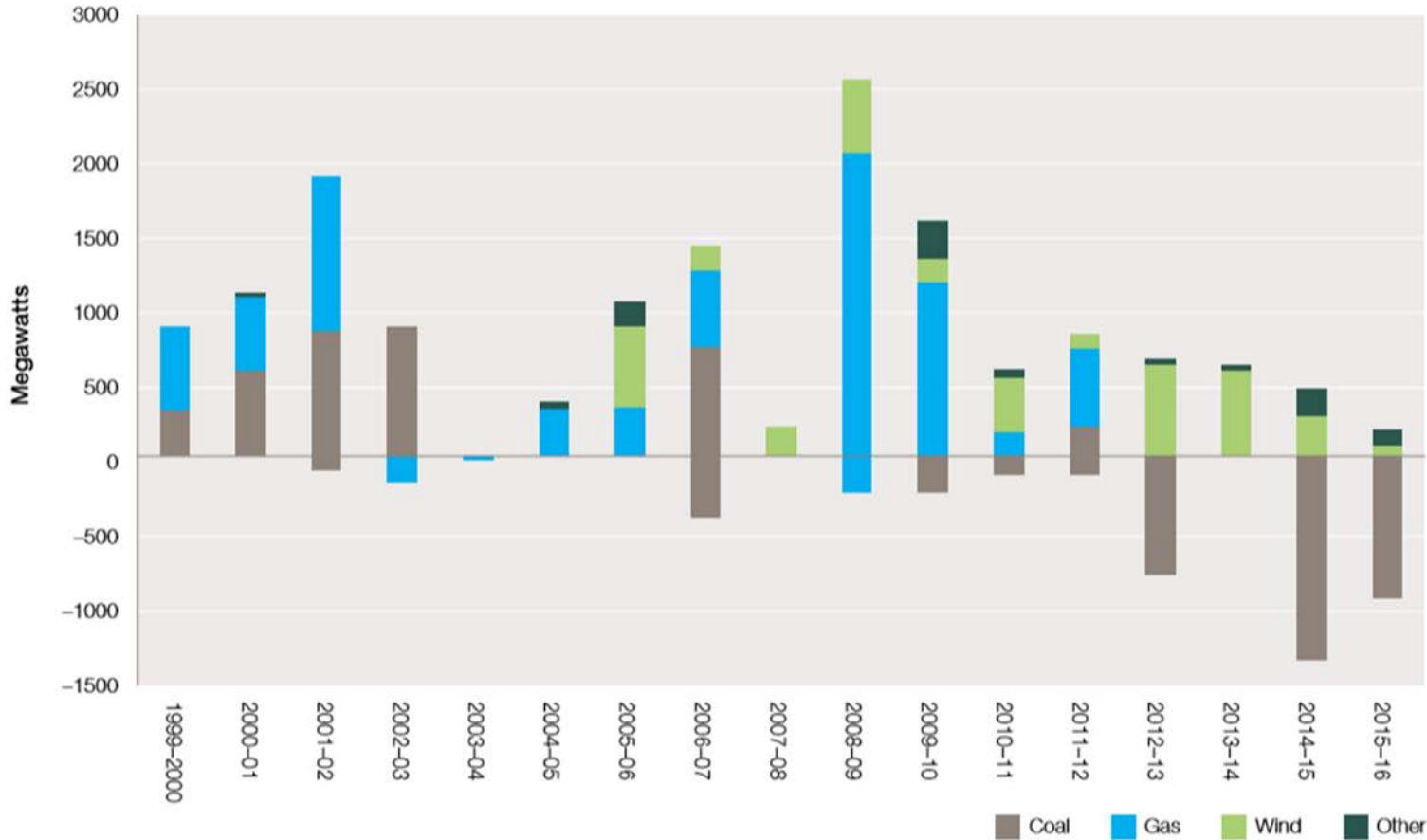
- Wholesale Price Trends
- Key Drivers
- Supply Chain Responses
- Summary

ENERGY ACTION



New Generation & Plant Retirement

Figure 1.16
Investment in new generation, and plant retirements

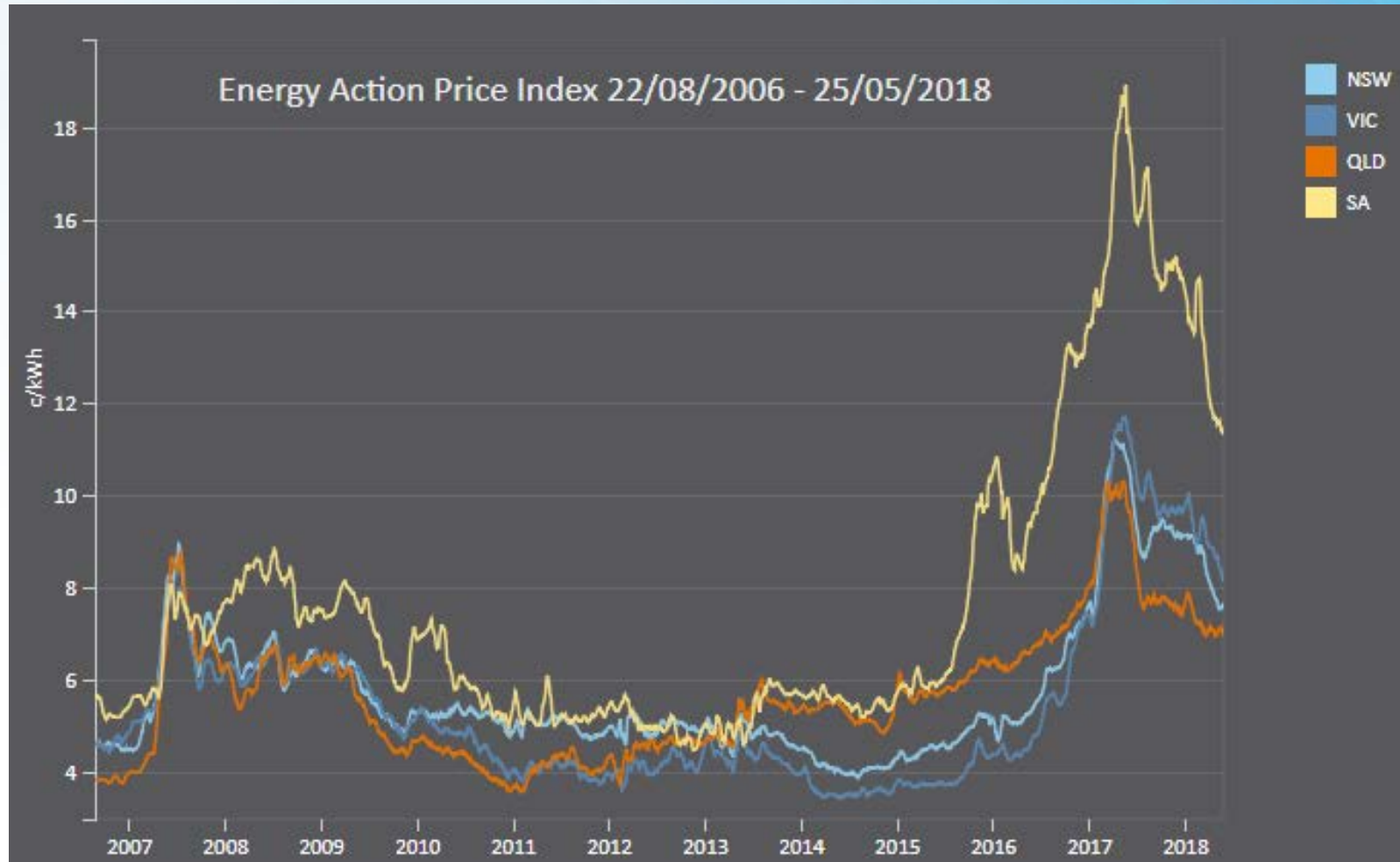


*Hazelwood
1,600 MW
Playford &
Northern
740 MW*

Note: Retirements exclude mothballed plant.

Source: AEMO; AER.

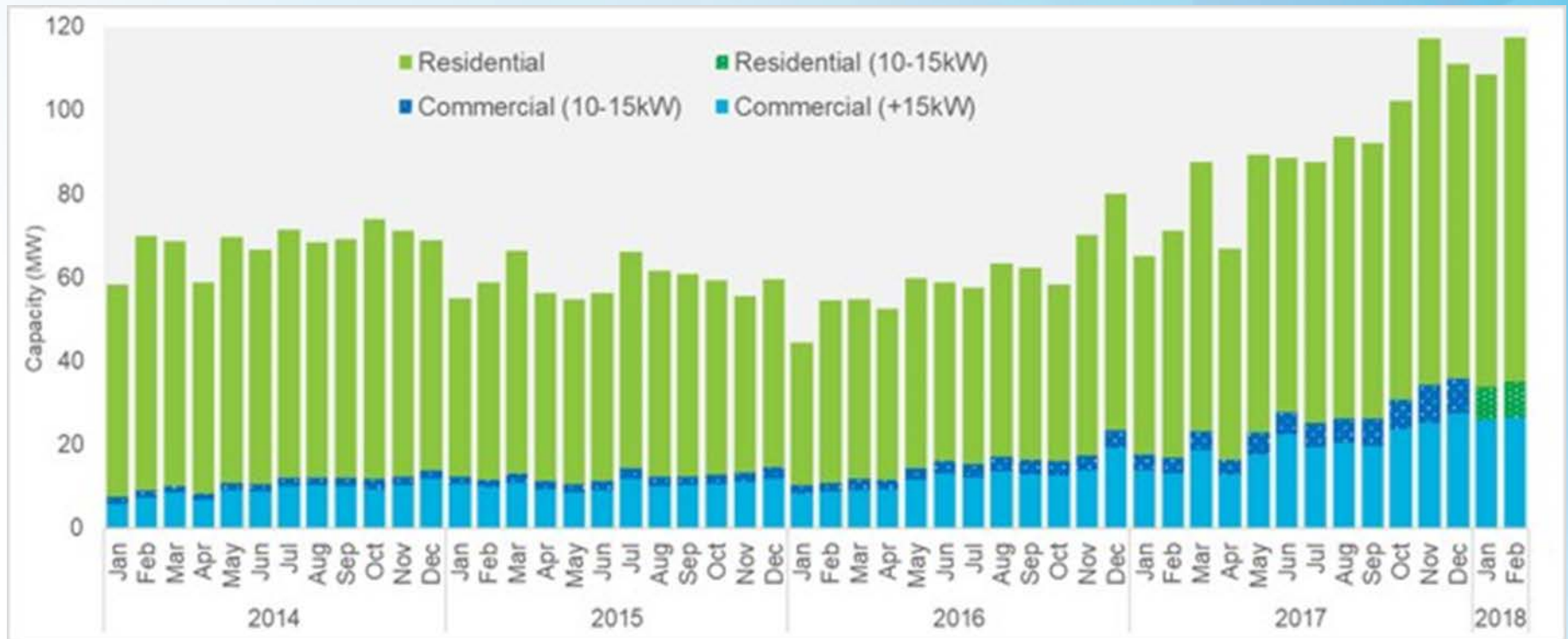
A Snapshot Of Energy Prices Across The National Energy Market



Wholesale Price Trends – Key Drivers

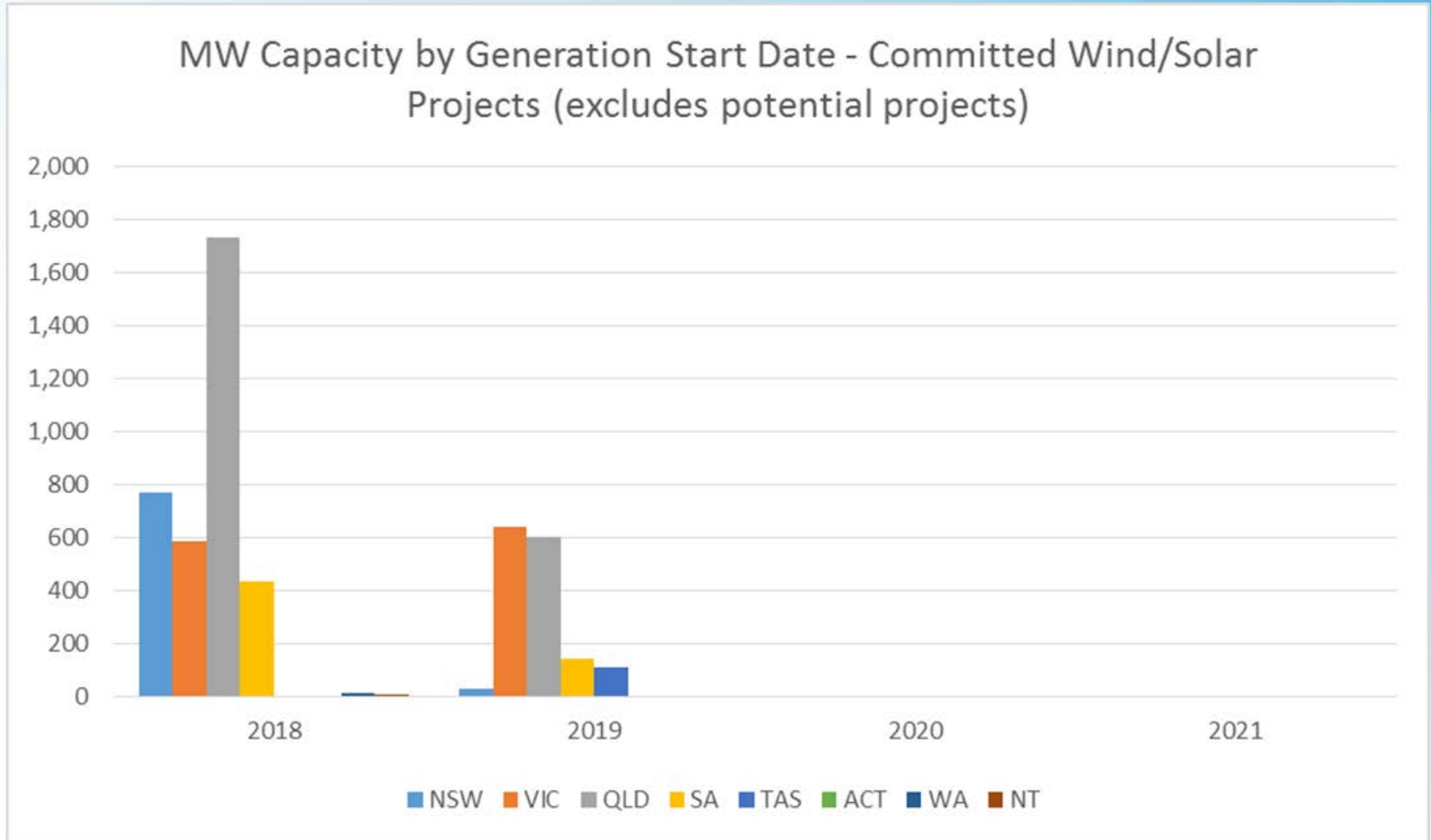
- Closure of major coal fired power stations – Hazelwood, Northern
- Moved from oversupply in 2014 to a much tighter supply & demand balance
- Increasing gas and renewable generation – higher costs, less predictable
- Increasing wholesale gas costs – LNG, declining conventional production
- Significant increases in wholesale electricity prices, environmental scheme costs
- Reduced competition from gas retailers – one active retailer only at times last year
- **Energy consumers incurring major increases in energy costs**

Commercial Behind The Meter Solar - Growing Dramatically



Source: Clean Energy Regulator

Increasing Renewable Generation



Corporate Power Purchase Agreements

Table 1 – Recent Australian Corporate PPAs

Corporate	PPA term	Energy purchased
‘Behind the Meter’		
Sun Metals	Not disclosed	116MW
Nectar Farms	Not disclosed	196MW
Westpork	Not disclosed	2.2MW
GMA Garnet	Not disclosed	3MW
Tyrrell’s Wines	20 years	350kW
‘Synthetic PPA’		
Kleenheat	10 years	30MW
Telstra	8 years	70MW
AB InBev/Carlton United Breweries*	Until 2030 or 2035	80GWh p.a
Monash University*	10 years	55GWh p.a
University of New South Wales*	10 years	93GWh p.a
University of Technology Sydney*	10-15 years	27GWh p.a

Other Electricity Supply Chain Responses

- Large and small scale batteries
 - Tesla, Hornsdale, 100 MW, linked to Hornsdale wind farm
 - Planned 140 MW battery at Port Augusta plus others in SA, VIC
- Demand side response/curtailment
 - RERT Scheme (1,000 MW of curtailable load)
 - Commercial curtailment
 - AEMO/ARENA intentions to expand DRM trial
 - Proposed aggregation of demand response by third parties
- Virtual power plants
- Potential pumped hydro generation
 - Snowy 2.0, Hydro Tas expansion, other smaller projects
- NABERS ratings, energy efficiency schemes and commercial projects
- Proposed National Energy Guarantee scheme

Gas Supply Chain Responses

- The Federal Government announced the ADGSM in April 2017. It allows the Gov't to impose gas export restrictions to ensure domestic demand is met
- Three Gladstone LNG projects committed to supply additional gas to cover the shortfall during 2018 & 2019
- LNG import terminals – AGL at Crib Point, Australian Industrial Energy (AIE) at Newcastle/Port Kembla from 2020-2021, Pelican Point in SA
- Further investment in conventional production e.g. Santos, Bowen Basin
- NT has lifted restrictions on 'fracking'
- Retail commodity prices reducing - up to \$18/GJ last year, now \$11/GJ or less
- Limited opportunities for commercial responses to higher gas costs
- Higher oil costs, increasing LNG demand, lower domestic conventional production
- **Long term drivers suggest an increasing gas price trend**

Key Points

- Energy markets are much more complex than before
- Information asymmetry – seek appropriate support or advice to understand your options
- Consider your energy requirements for the short, medium and long term
- Put in place a strategy and review it regularly
- Monitor and record consumption data on a total portfolio basis – access to your data is essential

Summary

- Lower electricity wholesale and retail offer pricing. Wholesale prices in backwardation
- Lower retail gas offer costs – still far above historic prices
- NEG not a major factor driving price trend
- Significant investment in renewable generation – large and small scale
- Move to alternative contracting methods – PPAs, progressive purchasing, demand response, batteries
- Australia is moving from a high carbon, low cost, centralised electricity system to a lower carbon, higher cost, distributed electricity system



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LinkedIn: www.linkedin.com/company/energy-action



Email: info@energyaction.com.au



Web: www.energyaction.com.au



National number: 1300 553 551

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