

# Demand Response

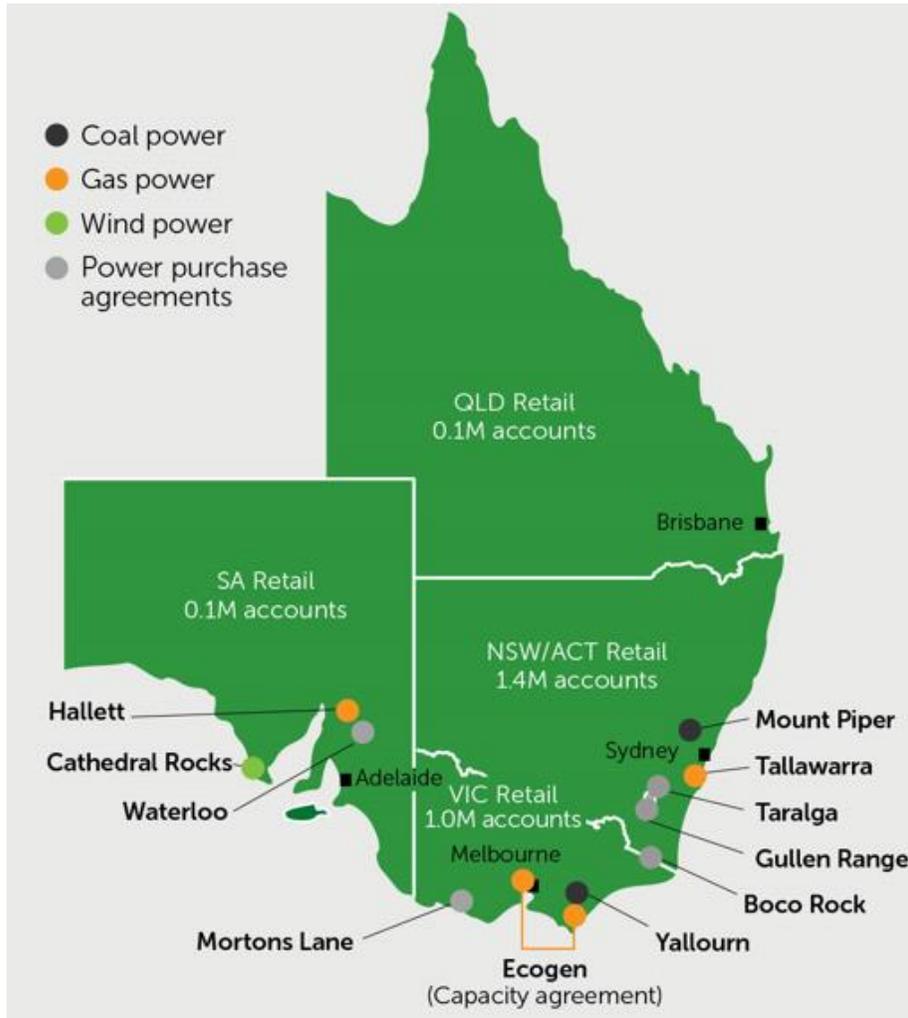
Building a Virtual Power Plant

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# EnergyAustralia at a glance



- One of Australia's largest energy retailers & generators
- Around 1.7m gas & electricity customers (2.6m total accounts) across eastern Australia
- Mix of residential, small business, commercial & industrial customers in Victoria, NSW, South Australia, the ACT & Queensland
- Generation portfolio comprising coal, gas & wind assets with around 5000MW capacity
- Represents a fifth of CLP Group assets
- Around 2,500 employees across Victoria, New South Wales & South Australia
- Contact centre operations in the Melbourne CBD, Geelong and India & Philippines

## Our purpose...

***To lead and accelerate the clean energy transformation for all***

We develop, adopt and promote solutions that put customers in control of their energy costs and consumption. It's just part of how we're supporting development of a modern energy system in Australia.

# What sets EnergyAustralia apart...

- In 2007 we became the first major energy business to commit to reducing its emissions
- Closed the Wallerawang power station; removed 1000MW from an oversupplied wholesale market & reduced carbon emissions by 5 mega tonnes of CO<sub>2</sub> equivalent
- Completed a five-year program so the Yallourn power station can provide power to an additional 100,000 homes without needing to burn more coal
- Completed works to improve efficiency at Mt Piper power station so that it can produce more electricity for the same amount of coal
- We operate the Tallawarra power station, the most efficient gas-fired plant in the National Electricity Market
- Financially underpin 12.5% of the large-scale wind projects in the National Electricity Market, supporting more than \$1bn of investment in renewable energy
- Launched \$1.5bn program to underpin development of new wind & solar projects in Australia
- Studying pumped hydro and energy recovery projects to support a new, modern energy system

# Why Demand Response Now?

- Australia is making a generational transition from large, centralised generation based on coal to a new, modern energy system underpinned by a cost-effective mix of technologies.
- This transition is reflected by the rise of Distributed Energy Resources both on the residential and commercial level.
- Building new, cleaner generation capacity is just one side of the equation; demand response – reducing strain on the system at peak times – is the other.
- Demand response has a critical role to play in maintaining system reliability and security while supporting the integration of new supplies of renewable energy. It's an approach that puts customers in control and keeps costs down, because the cheapest generation is the generation you don't have to build.
- EnergyAustralia has been nominated by ARENA to develop 50MW of reserve capacity across VIC, SA and NSW as a 3-year project.

# What are we doing?

## Building a Virtual Power Plant

### Residential

- **SMS alert campaign:** customers will agree to reduce or moderate their energy demand in response to a real-time notification.
- Installing **Wattwatchers** monitoring and remote-control capability in residences, allowing appliances (such as air-conditioners and pool pumps) to be curtailed remotely.
- Aggregating “smart” **Redback solar battery** storage systems across multiple sites to allow for load reduction.

### Commercial and Industrial

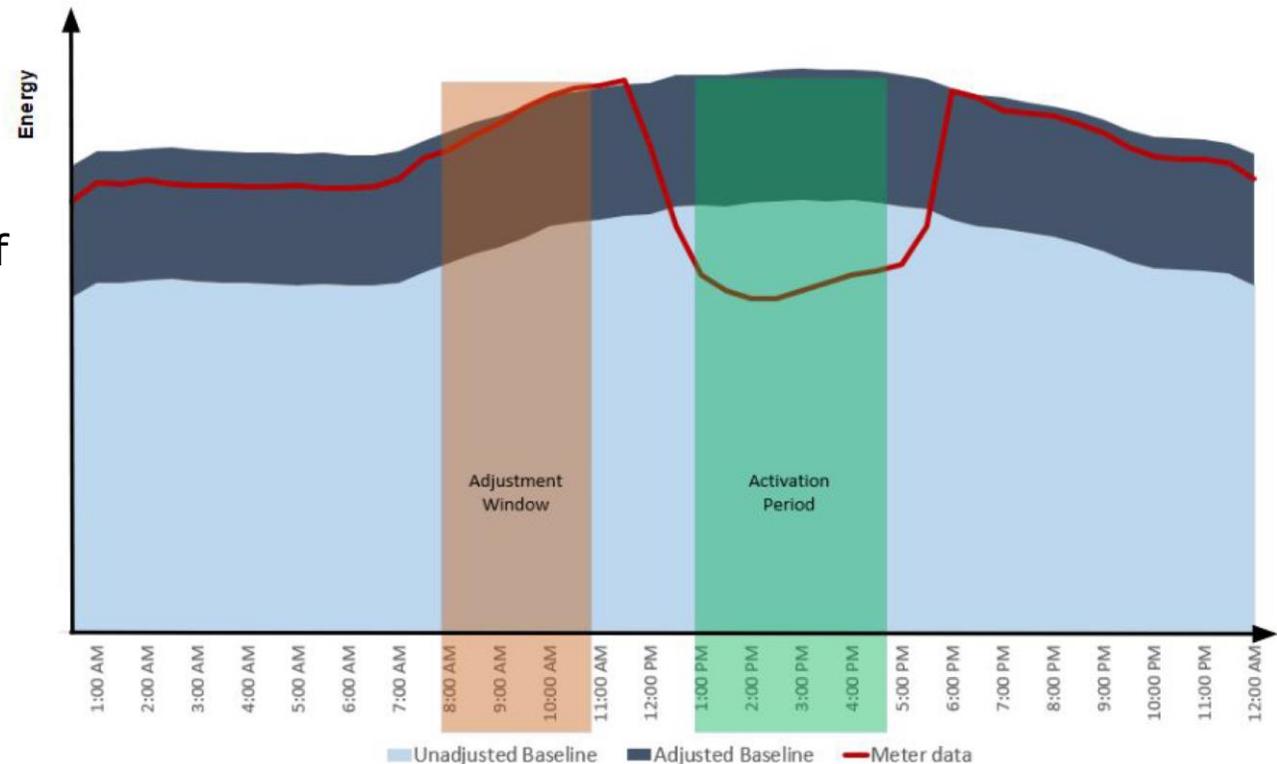
- **Converting diesel generators** at large customer sites to run on Australian made biofuel, which is derived from sourced feedstock such as recycled cooking oils.
- Working with large **industrial customers to curtail** their load upon request.
- Setting sophisticated demand management procedures with retail sites: **pre cooling, changing freezing temperatures** and more.

# ARENA Demand Response Baseline

The baseline is inspired by the methodology used by the market operator in California.

The key elements are:

- Measured at the NMI meter
- Calculated on the average of the past 10 working days
- Adjusted according to the average consumption in a 3 hour window ending 1 hour prior to the event.



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# Where do we go from here?

## Getting ready for the coming summer

- Mass market – campaign launch in December
- Commercial and Industrial – in finalization stage

## 3 year plan

- Learn from 2018 Summer
- Improve and optimize
- Adopt new technologies
- Grow portfolio