

# Managing Peak Demand

New Career Opportunities for addressing a global issue



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# “Peak Demand” “Peak Demand Management”

 THE AUSTRALIAN

www.theaustralian.com.au

## Warning of more heatwave blackouts

By Kate Mearns  
The Australian  
AUSPORTELS have been warned to expect the return of power blackouts as the weather forecast predicts a hot and dry summer. The Australian Energy Regulator has issued a warning that power supply may be reduced by one quarter during the summer months. The Victorian Government has also issued a warning that power supply may be reduced by one quarter during the summer months. The Victorian Government has also issued a warning that power supply may be reduced by one quarter during the summer months.



AGE

# FINANCIAL REVIEW

## Little comfort for blackout victims

IT IS gratifying that victims of blackouts will receive compensation, as of Saturday morning any 80-year-old mother had been without power for 50 of the previous 62 hours. Her cordless phone and garage door did not work, and she had no food. She has no air-conditioning. Her neighbour used his mobile to call the way but was put on hold for so long she did not.

Three consecutive days of temperatures above 43 degrees cost Melbourne \$100 million in lost productivity.

## Melbourne re-energised after meltdown

**Jeffrey Hutton**  
As businesses closed over the weekend and temperatures cooled from highs of 45 degrees in Melbourne last week, utility crews worked to reconnect homes still without electricity and to protect power lines against bushfires.

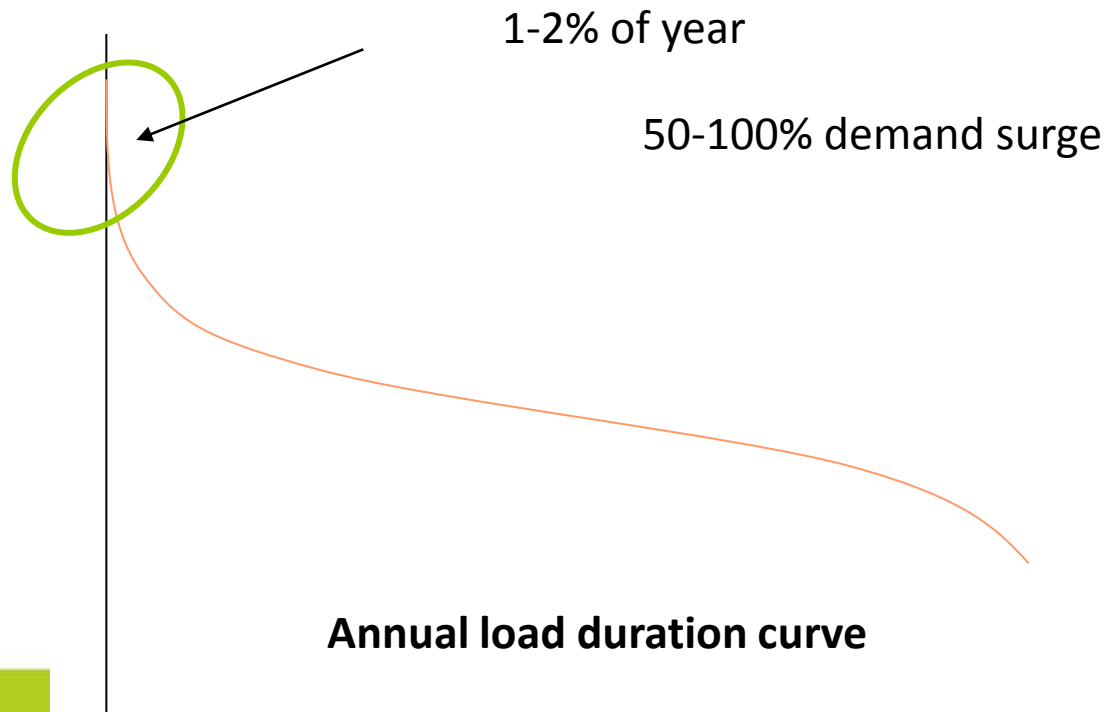
Photo: REUTERS



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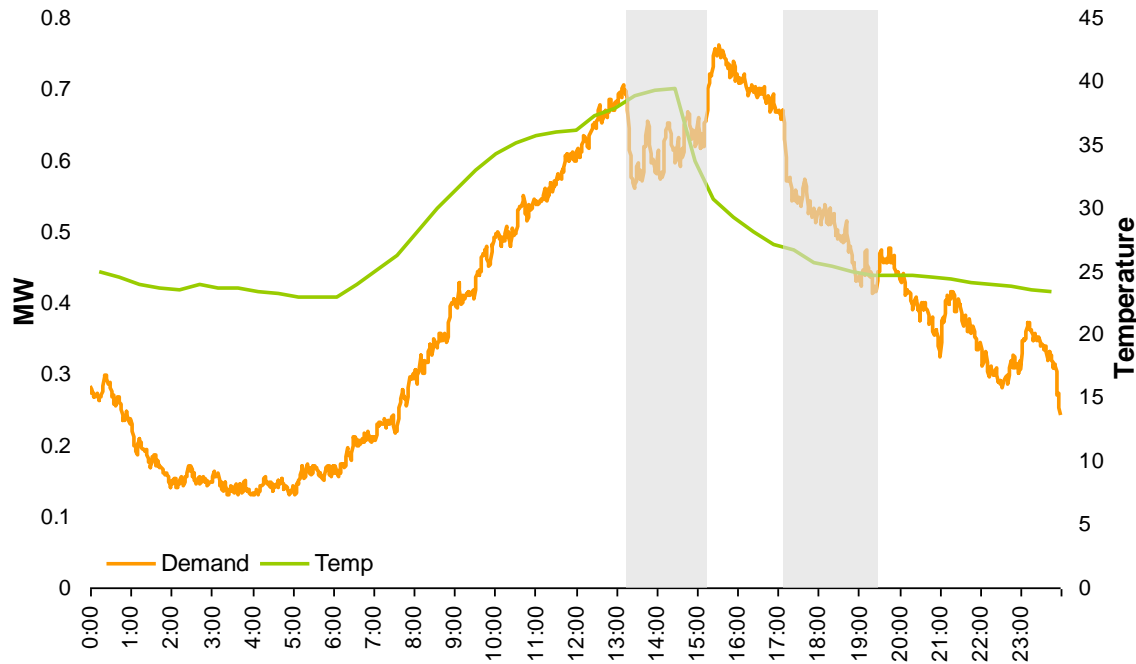
- **“Peak Demand”** is surging demand for electricity during extremely brief periods of the year



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- **“Peak Demand Management”** is working with the community to manage demand for electricity more intelligently and sustainably



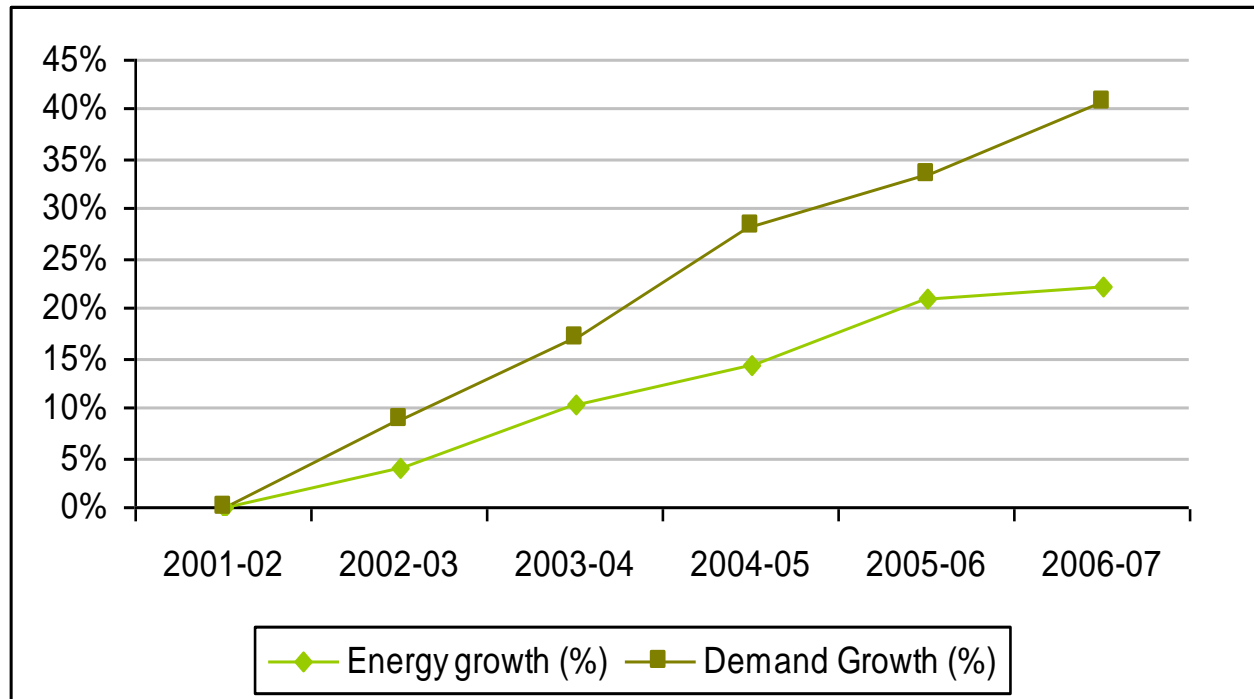
- A **critical** component in any genuine move to energy sustainability



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# Annual peak demand growth in SEQ approx. ~200% energy volume growth



- Peak Demand **drives** network investment
- Largest component of **bill increases** in recent years (and growing)



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# Residential air conditioning is becoming a massive challenge for electrical networks around the world



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*Refrigerants Australia presentation...*

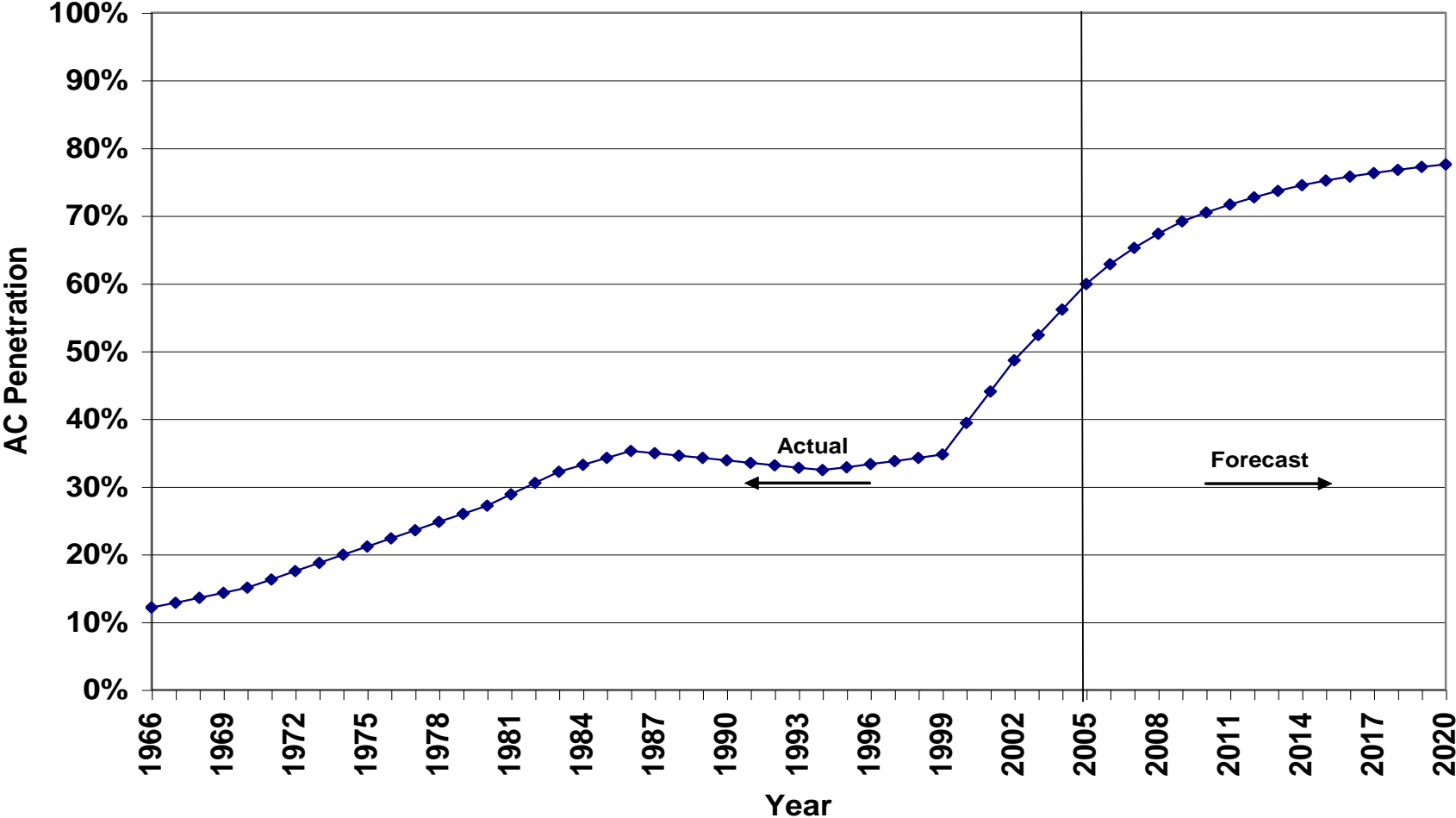


# The Refrigeration and Airconditioning Industry: Moving Towards Sustainability

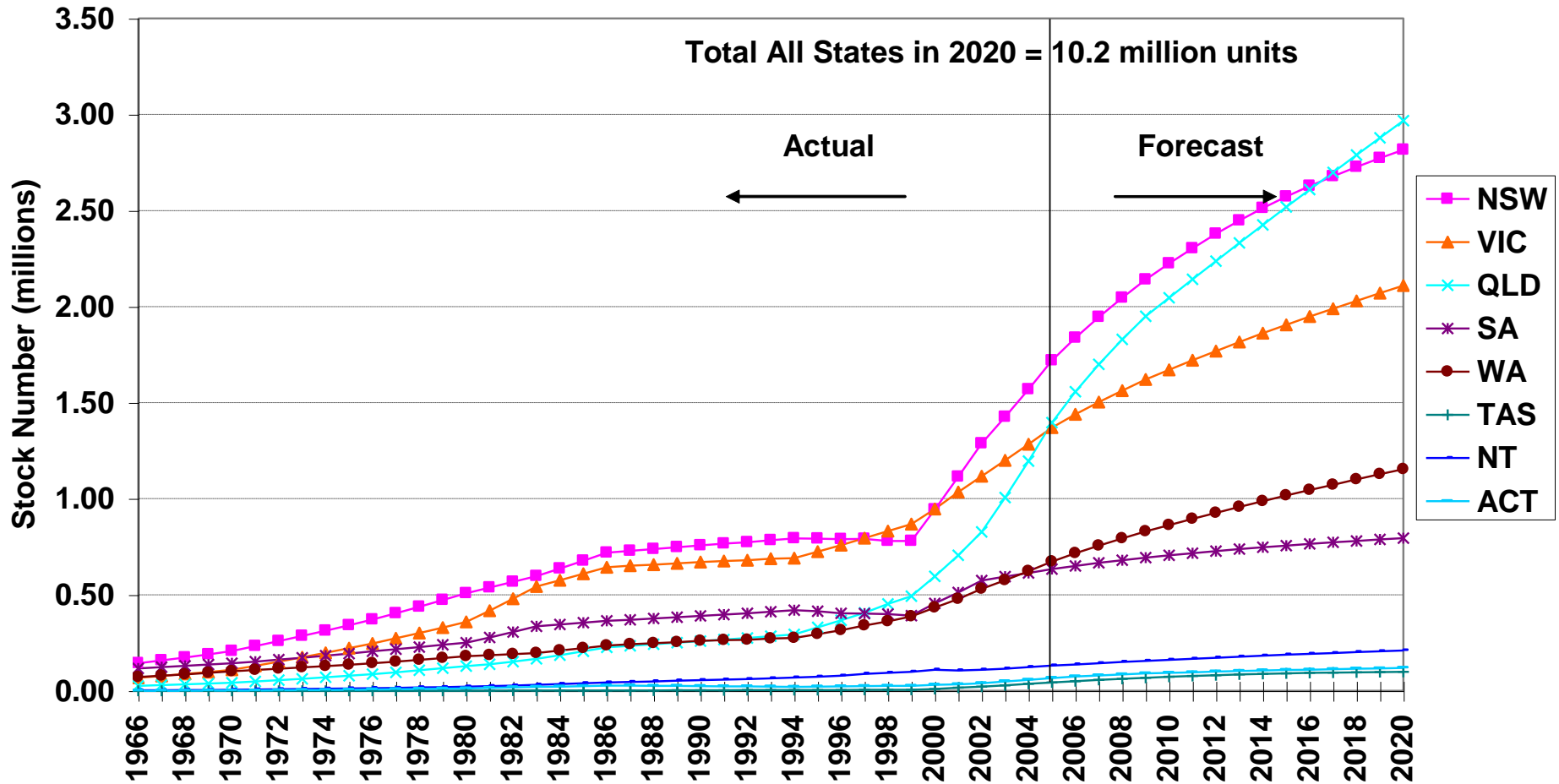
Steve Anderson, Executive Director, Refrigerants Australia- AIRAH  
Sustainability Conference, Melbourne, 20-21 November 2007



Summary for Australia

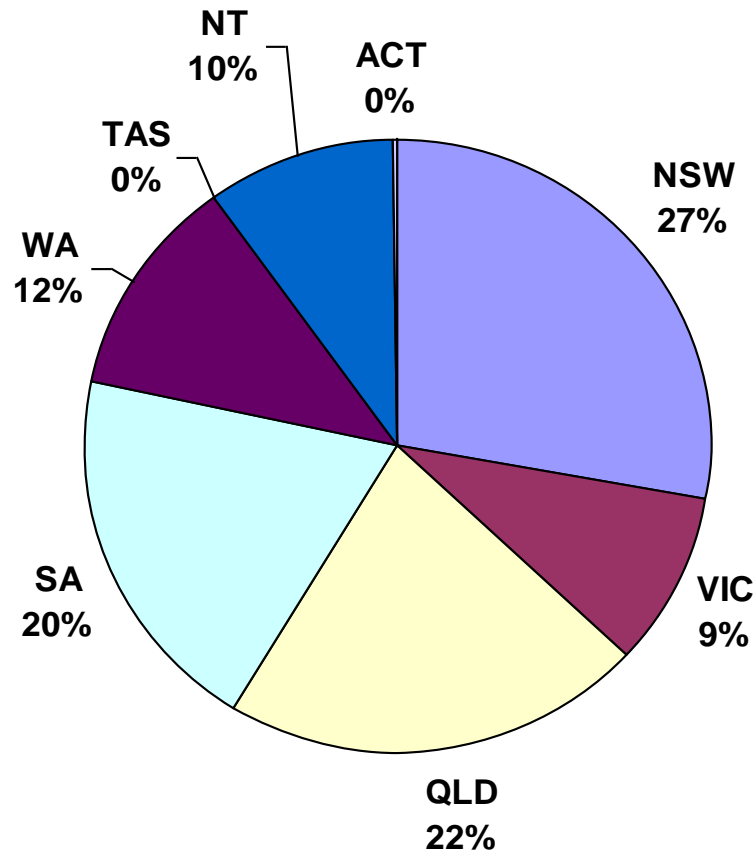


### Air Conditioners - Stock (All Types)



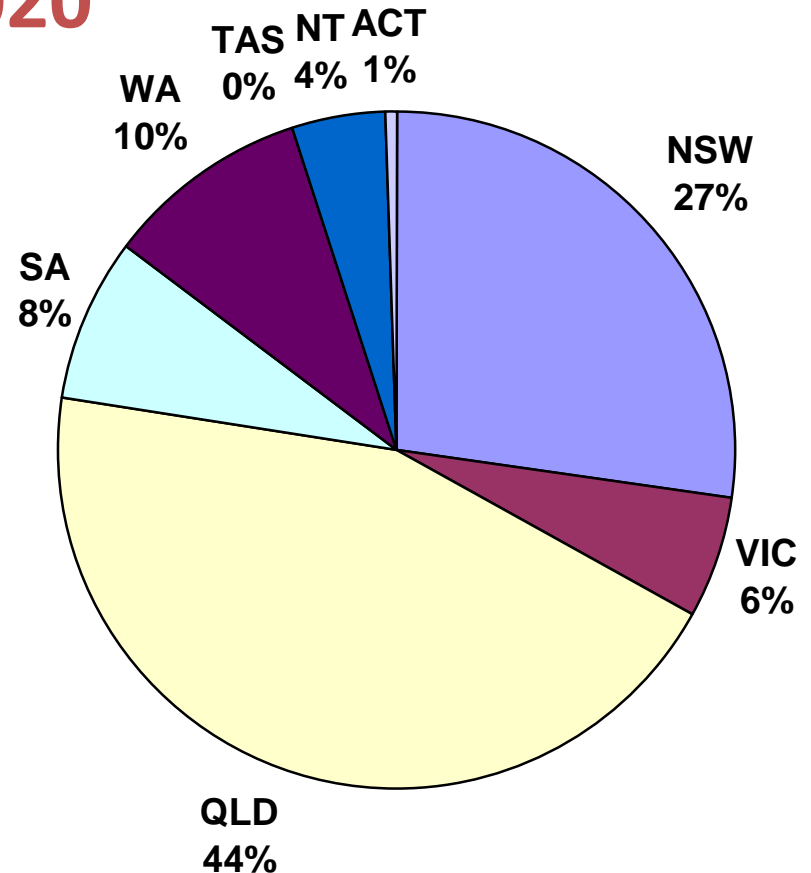
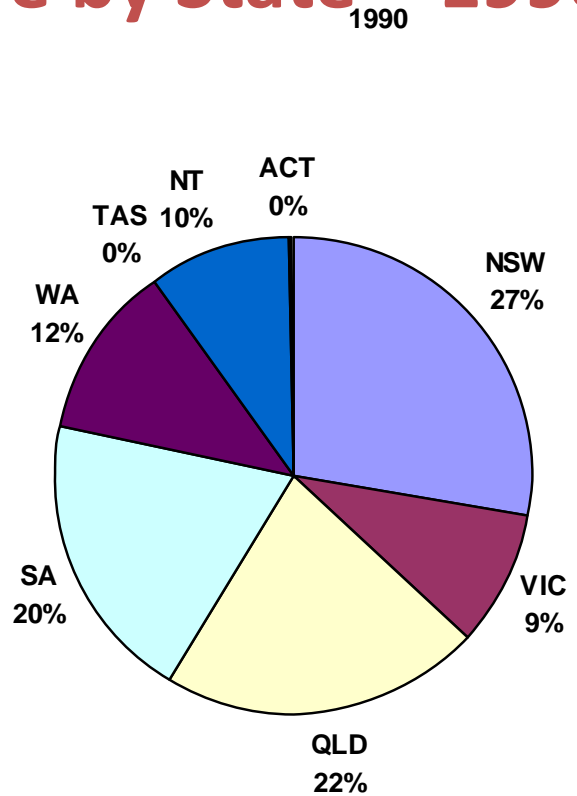
# Cooling Energy Consumption Share by State – 1990

1990



# Cooling Energy Consumption Share by State – 1990 & 2020

2020



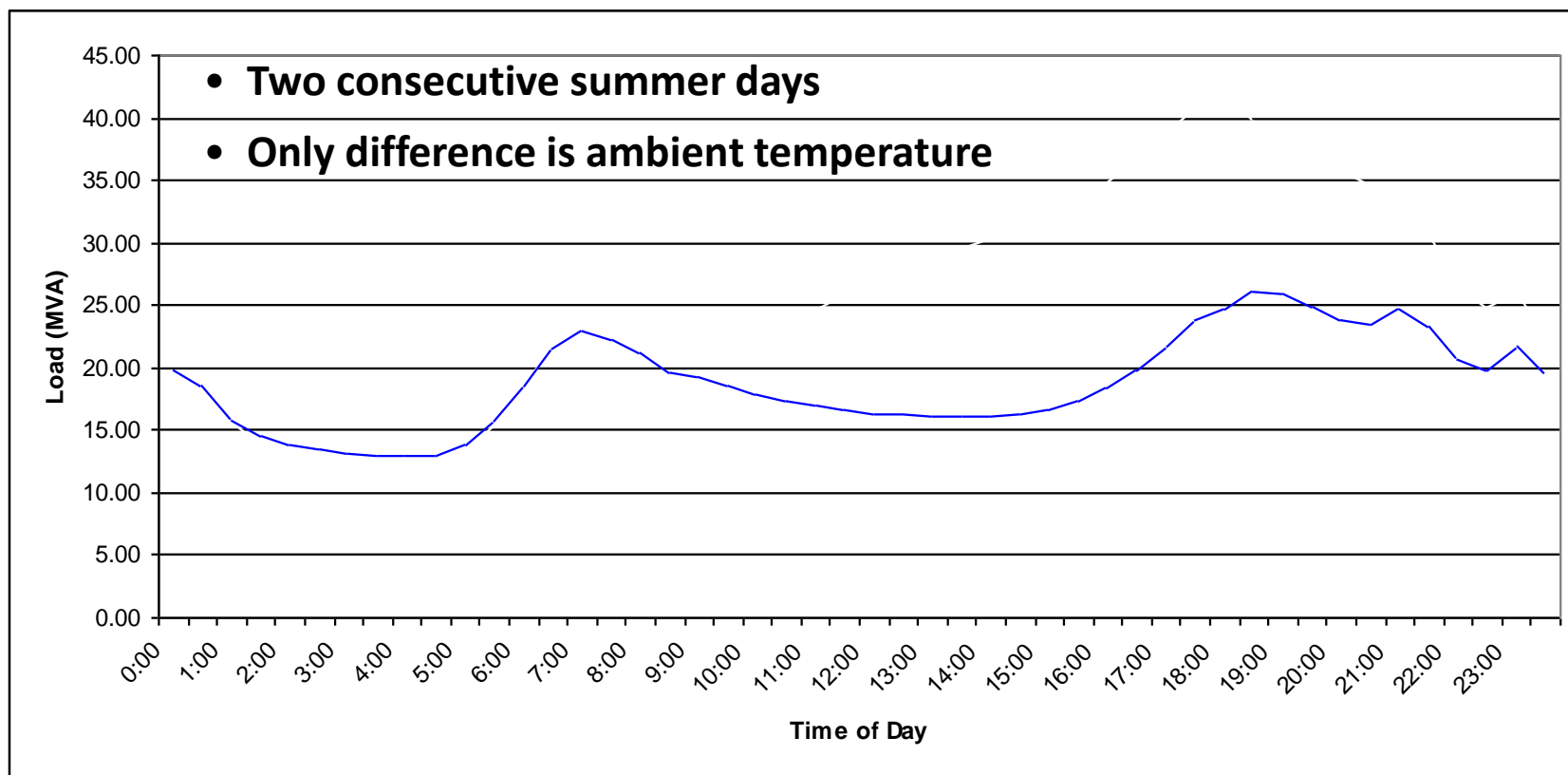


# Extreme Summer Peaks

*Example of Residential Substation Peak Demand*



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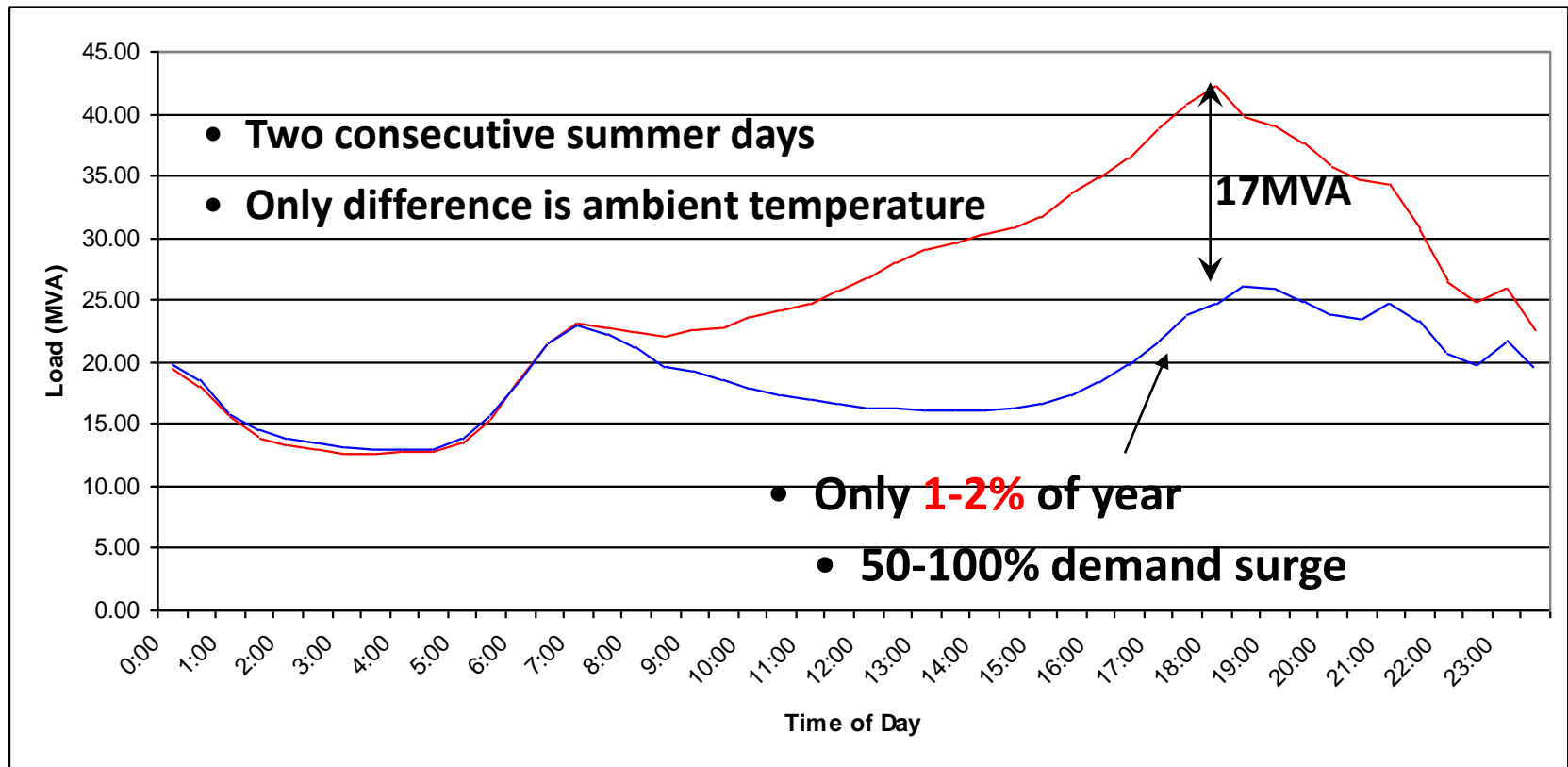




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# Extreme Summer Peaks

## Example of Residential Substation Peak Demand



- Peak Demand is a growing **global** issue that's not going away



## So, what can ENERGEN do?

- 1. Discourage both new home construction and air conditioning / pool installation?**
- 2. Chase unfettered growth by indefinitely expanding the network? (*much of which is only called on 1 – 2% of the year*)**
- 3. Intelligently target resources to both:**
  - address critical network constraints *AND*
  - partner with industry and the community to moderate extreme peaks in demand

# Shaping a New Future

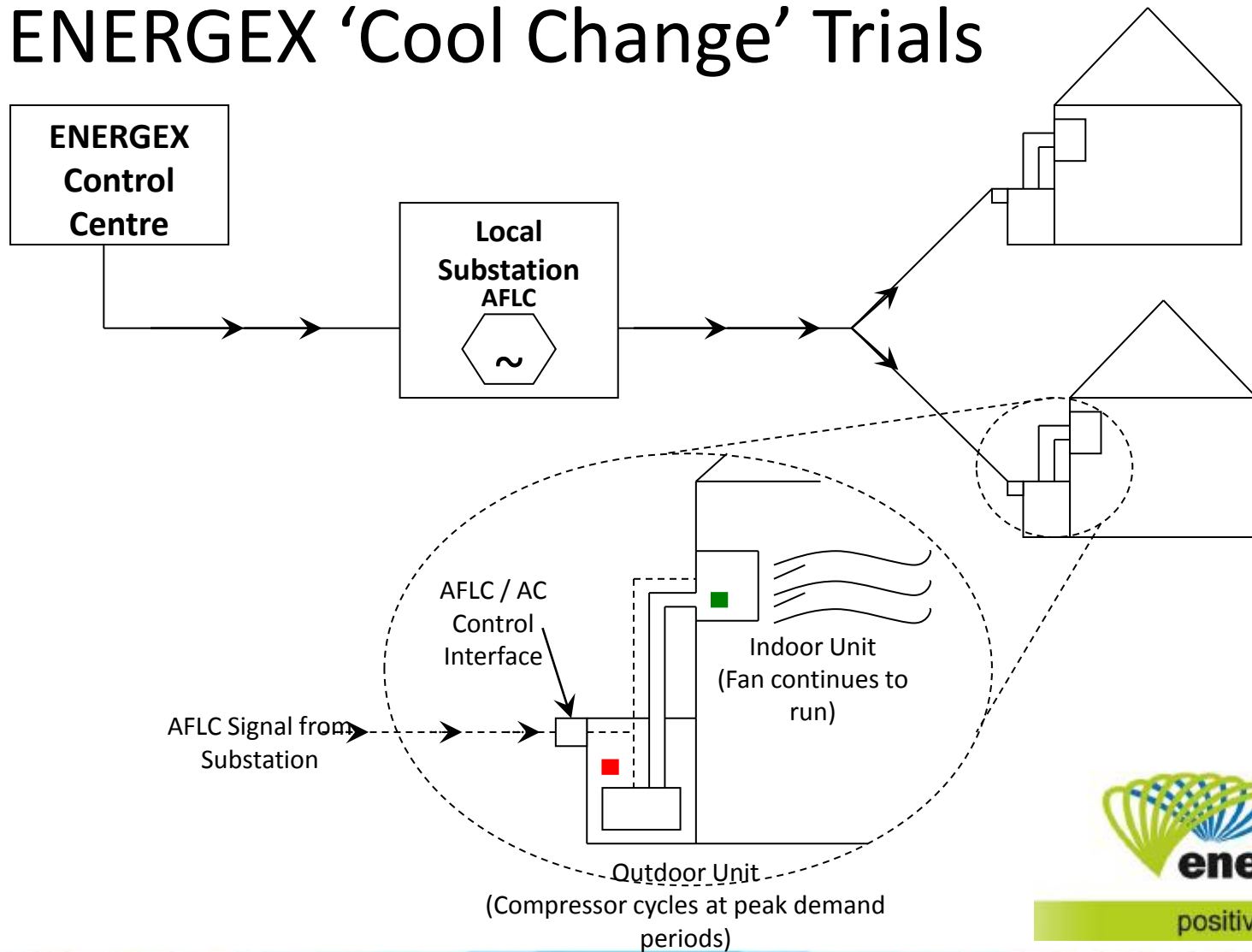
- AS4755 series of Australian Standards now published – a world first!
- Extensive trial work conducted nationally:
  - ETSA Utilities (>1,000 homes)
  - ENERGEX (>1,500 homes)
  - Western Power
  - Ergon Energy
- AS4755 compliance federally mandated - all new A/C units (2011/12)



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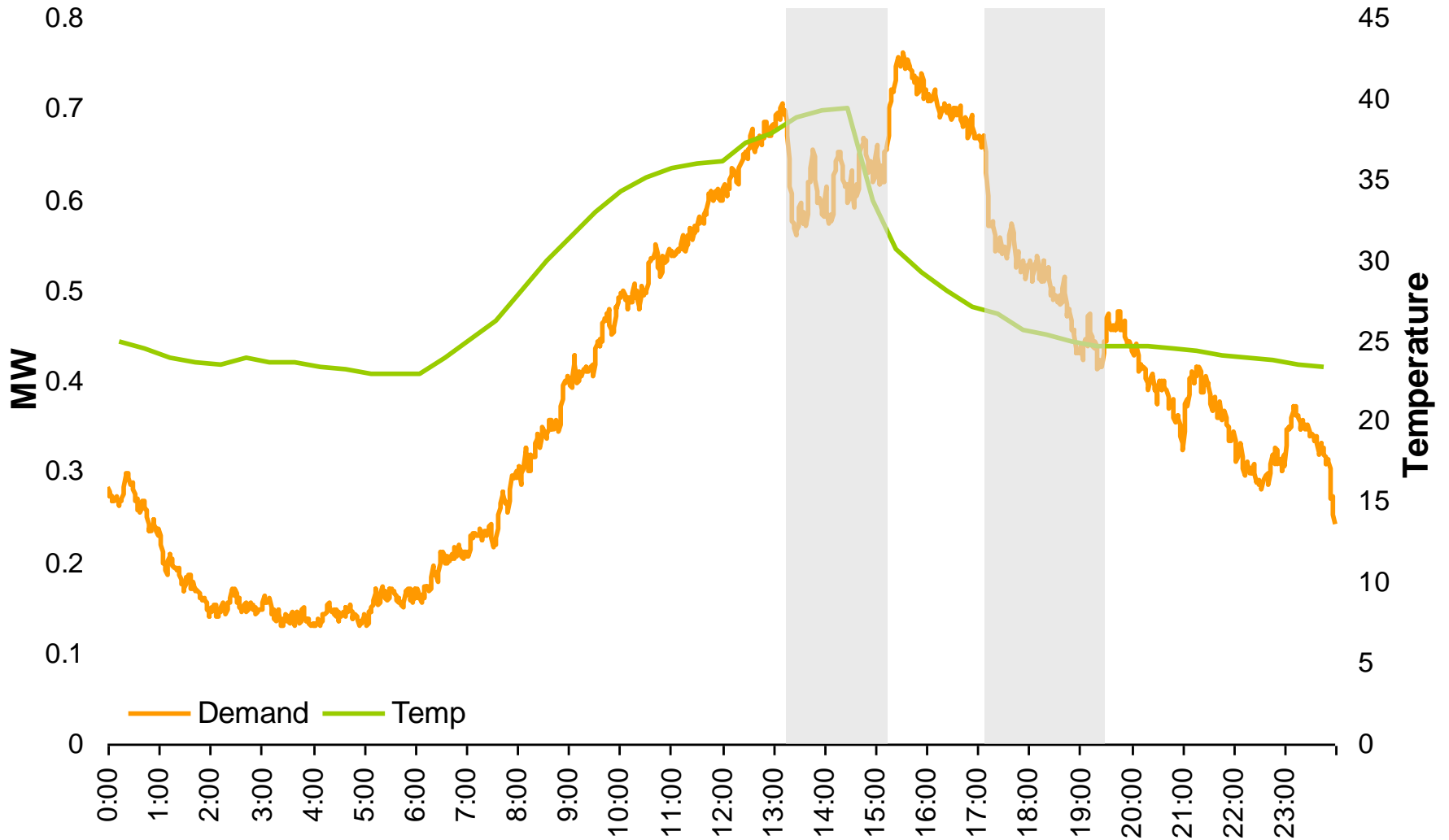
# ENERGEX 'Cool Change' Trials



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# ENERGEX 'Cool Change' Results





## What about Comfort...?

- This is NOT about turning off air conditioners!
- Sophisticated demand A/C demand management is designed to minimise any perceivable change
- Trials have universally demonstrated negligible impact on residential comfort (typically **85-90%** satisfaction!)

*“Haven’t noticed a difference, I think it’s a good initiative.”*

*“Keep up the good work. Would be happy to put the other air conditioner in the trial.”*



# Training & Career Opportunities?

*Environmental and economic pressures will change the face of electricity management forever...*

- ✓ **More Holistic Model:**
  - No longer ‘Energy Efficiency’ alone
  - ‘Demand Management’ will become a critical component of energy sustainability
- ✓ **New Skill Sets:**
  - *‘Technology meets humanity’*: Deeper capabilities for customising technological solutions around human needs
  - *‘Technology meets economics’*: Including Demand Management capability creates more powerful business cases



# Training & Career Opportunities?

## ✓ All Target Customer Types:

- Industrial sites
- Commercial buildings
- Residential customers
  - o Air conditioning
  - o Swimming pool filtration
  - o Greenhouse-efficient hot water
  - o Electric Vehicle re-charging

## ✓ Service Provider Types:

- SME Trade Businesses
- OEM Manufacturers & Representatives
- Electricity Utilities & Retailers



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# New Skills to Shape a New Future...

*“The **leaders** of the future are going to have three traits...*

*A deep sense for potential **new markets**...*

*A great fingertip touch with **technology**...*

*Understand ways to capitalise on these every place in the **world**...”*



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Jeff Immelt, CEO General Electric

(Paraphrased from ‘The Articulate Executive in Action’ - 2005)



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# Pre-dinner Drinks

Foyer Level 1, sponsored by RMIT



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