



Beyond Zero Emissions presents the

Zero Carbon Australia Buildings Plan

Science based – solutions focused



- Independent research and education
- Climate change solutions
- Non profit organisation run off donations
- Volunteer driven



The University of MELBOURNE ENERGY Research Institute
A research collaboration

Australian Sustainable Energy
Zero Carbon Australia
Stationary Energy Plan

- > A ten year roadmap for 100% renewable energy
- > Baseload energy supplied by renewable sources
- > Affordable at \$8 per household per week

beyond ZERO emissions



Zero Carbon Australia Guiding Principles

- **Blueprint for a Zero Carbon Australia in a 10-year timeframe**
- Fully accept latest climate science evidence
- Specifies only 'commercial-off-the-shelf' technology
- Maintain or enhance Australia's:
 - ◆ Energy Supply security and reliability
 - ◆ Food and water security
 - ◆ Standard of living, including comfort

Spain 2011
Torresol Gemasolar
20MW 15h storage



ZCA Buildings Plan Parameters

Zero emissions buildings within ten years

- Zero fossil gas buildings
- 100% electricity buildings
- Powered by renewable energy

Proposing retrofit packages aimed at:

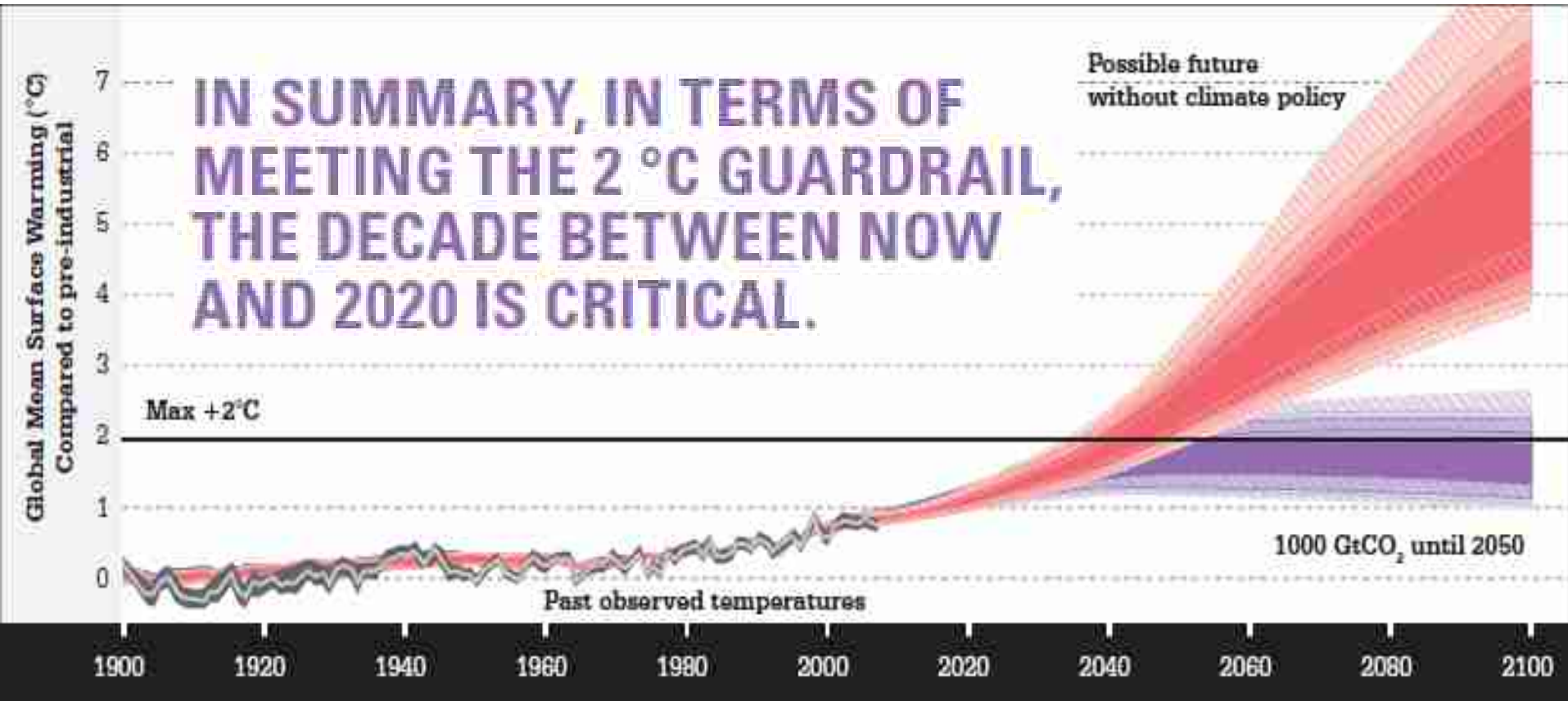
- Deep cuts in energy demand
- Replacing gas appliances
- Generating onsite electricity

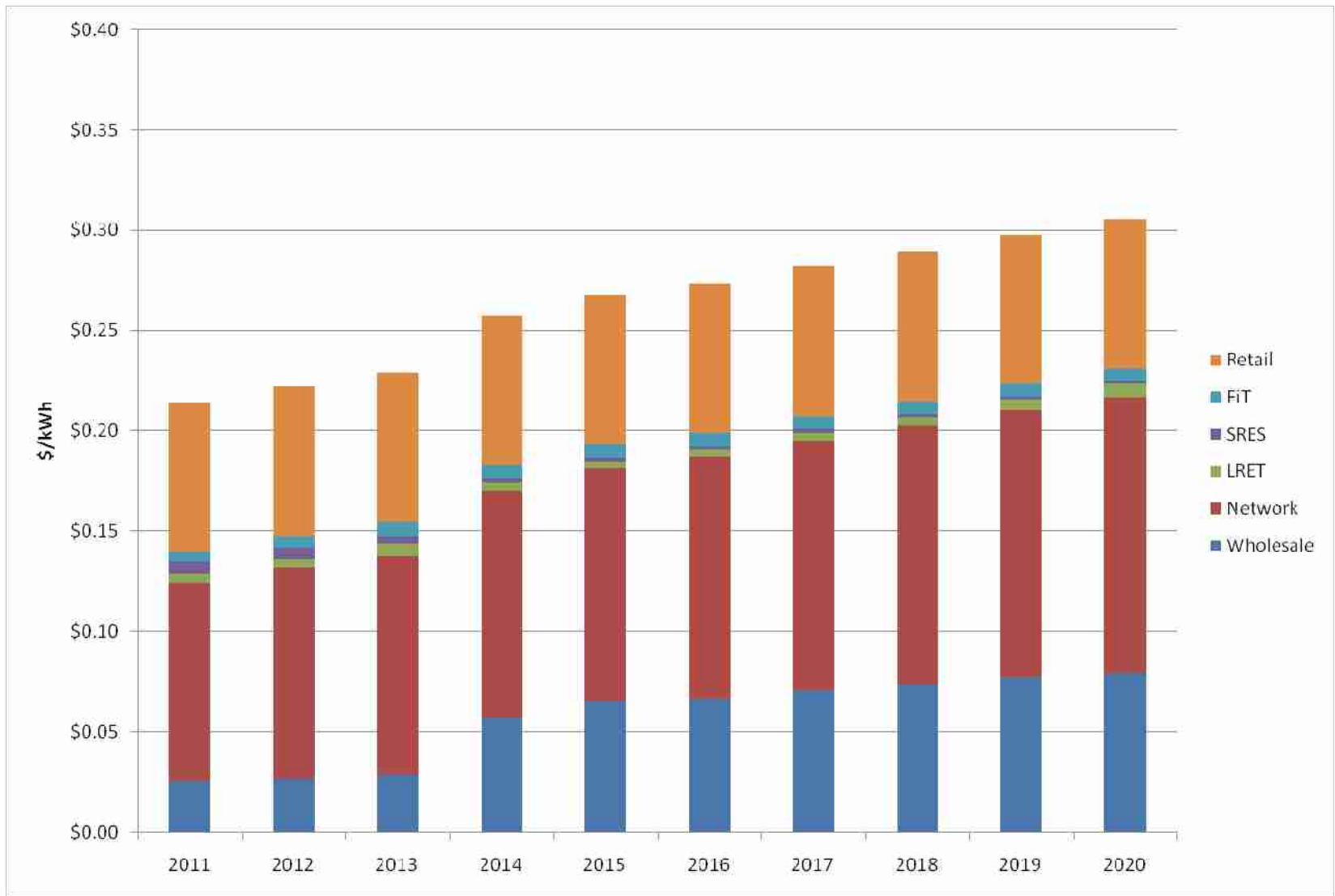
ZCA Buildings Methodology

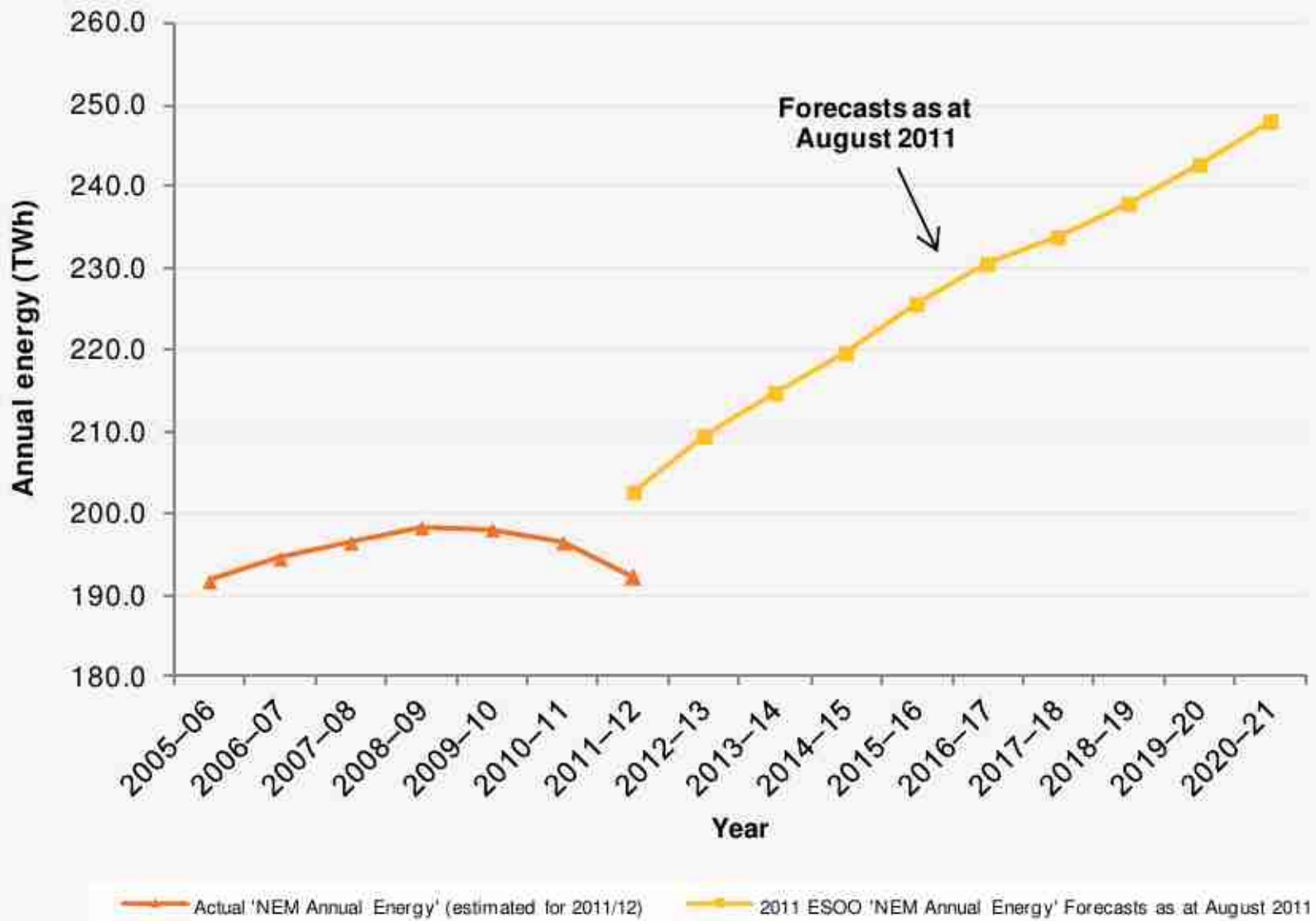
- Over 80 actively involved volunteers – engineers, architects, scientists, data analysts, experts in the field
- Substantial industry engagement
- Pro bono business contributions:



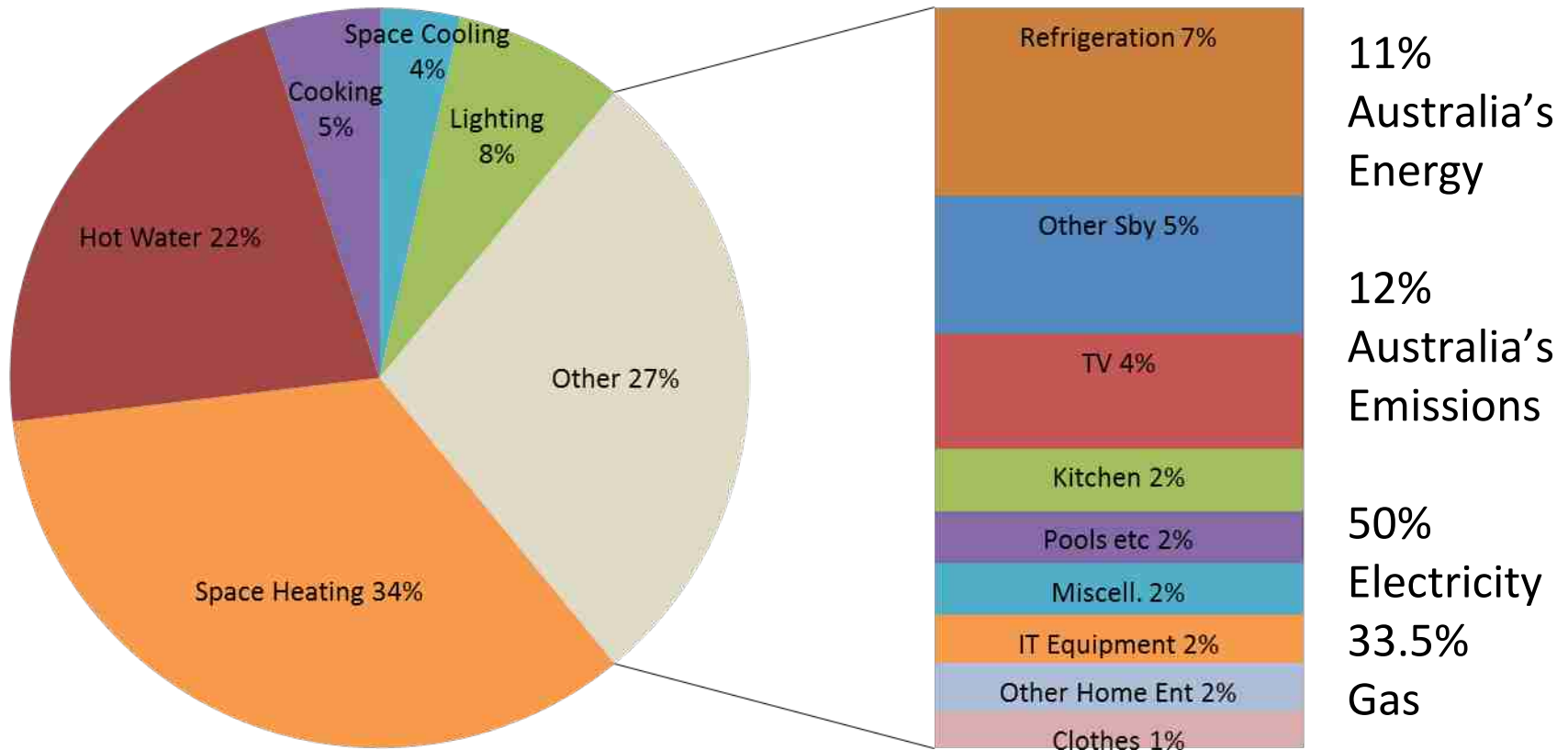
Why bother?



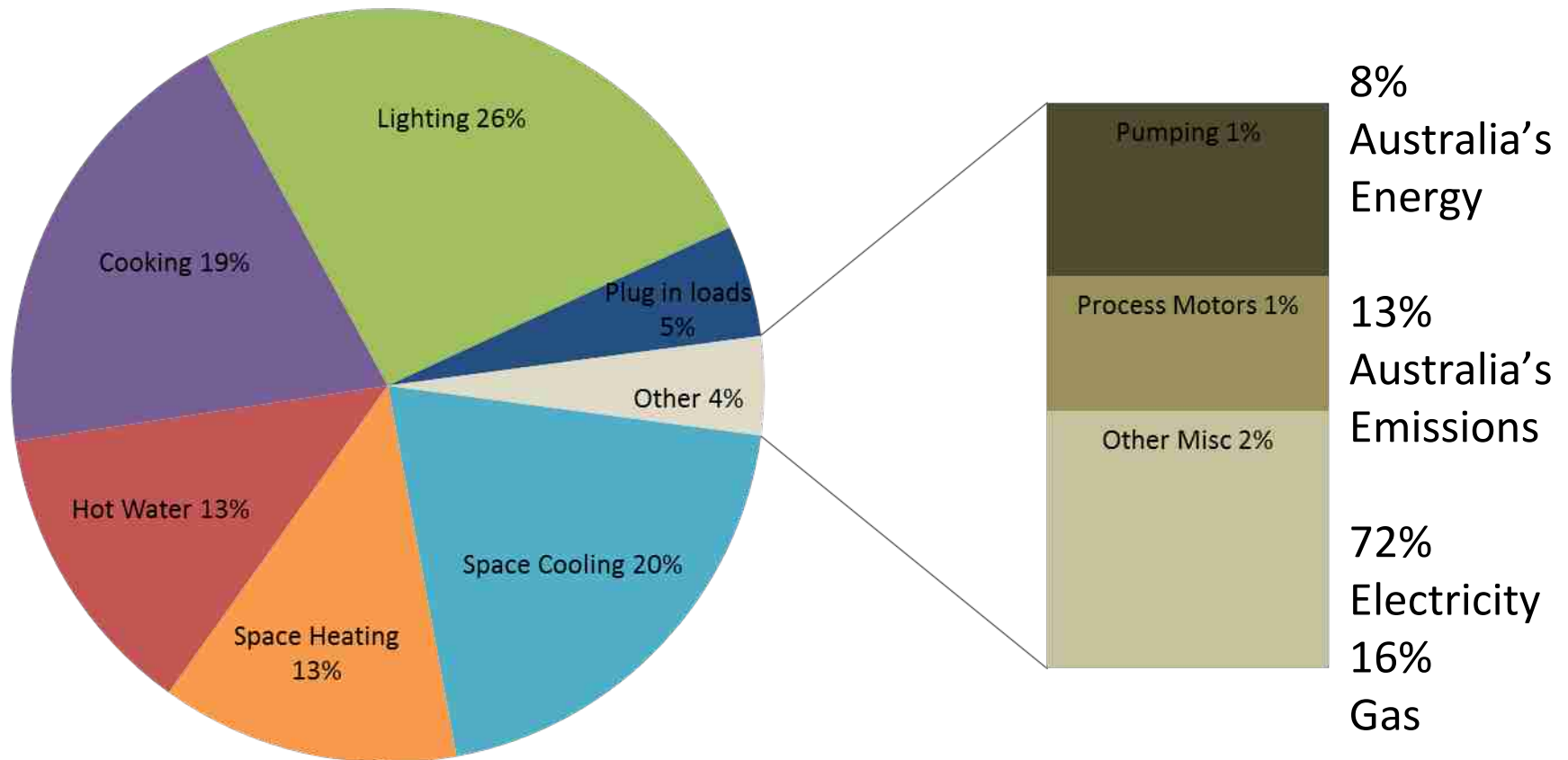




Australia's Residential Energy Consumption, 2011



Australia's Commercial Energy Consumption, 2000





EXAMPLE HOME - MELBOURNE



**EXAMPLE OFFICE -
BRISBANE**



**EXAMPLE RETAIL -
SYDNEY**

**Melbourne House
Energy Use (MJ/day)**



**BRISBANE OFFICE ENERGY
USE (GJ/day)**



**Sydney Shopping Centre
Energy Use (GJ/day)**





LIGHTING

Melbourne House
Energy Use (MJ/day)



BRISBANE OFFICE
ENERGY USE (GJ/day)



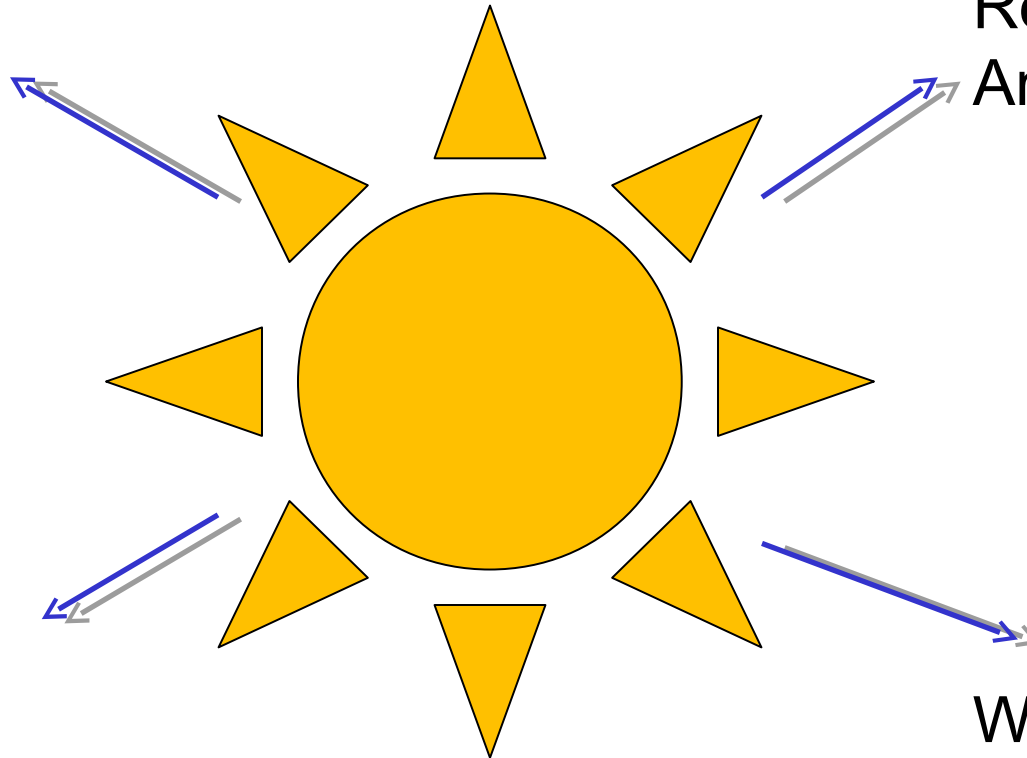
Sydney Shopping Centre
Energy Use (GJ/day)



Solar Energy – not just electricity

Passive Solar Heating

Renewable Ambient Heat

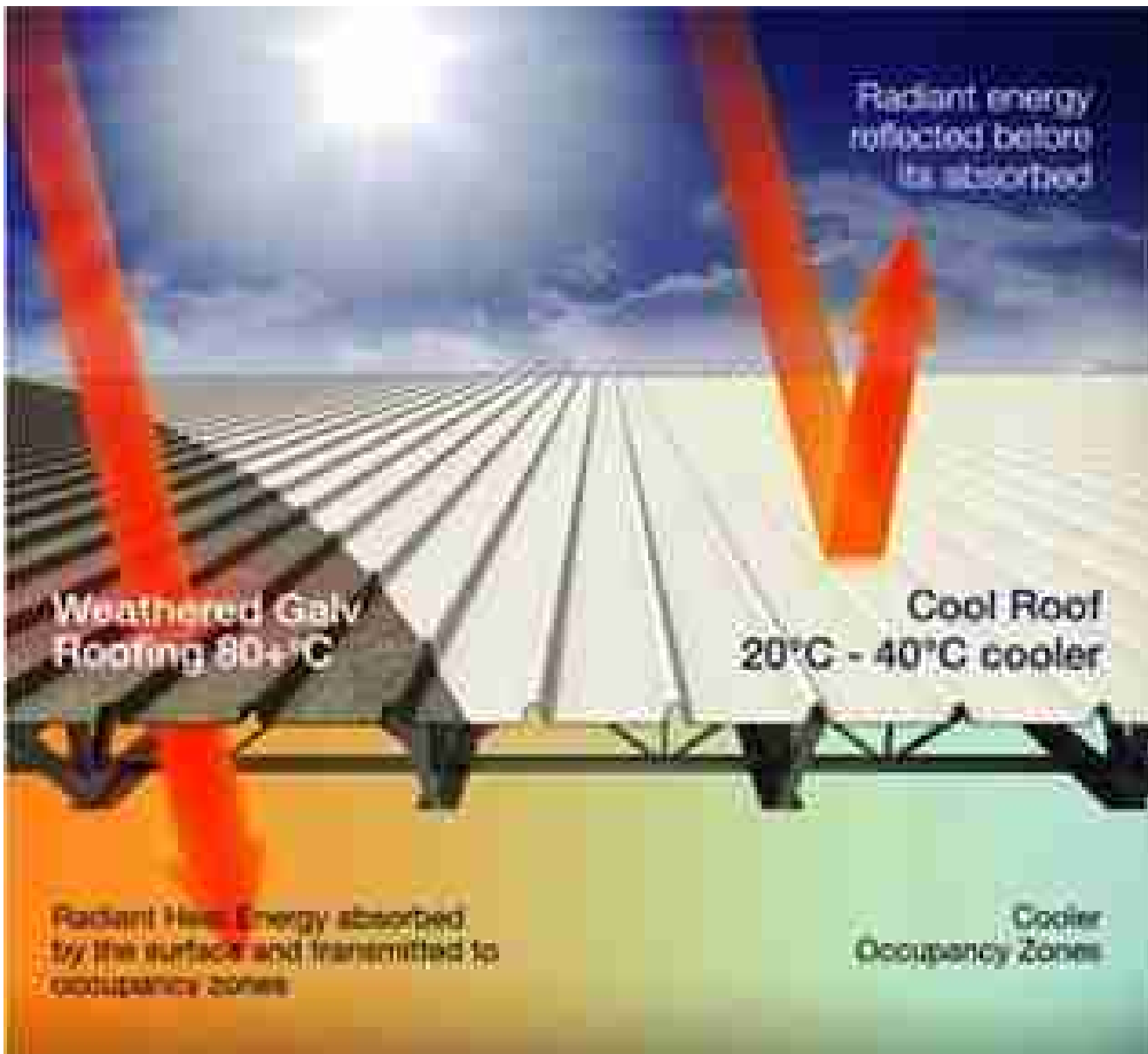


Radiant heat
– e.g. solar
hot water

Wind –
indirect solar
energy



INSULATION

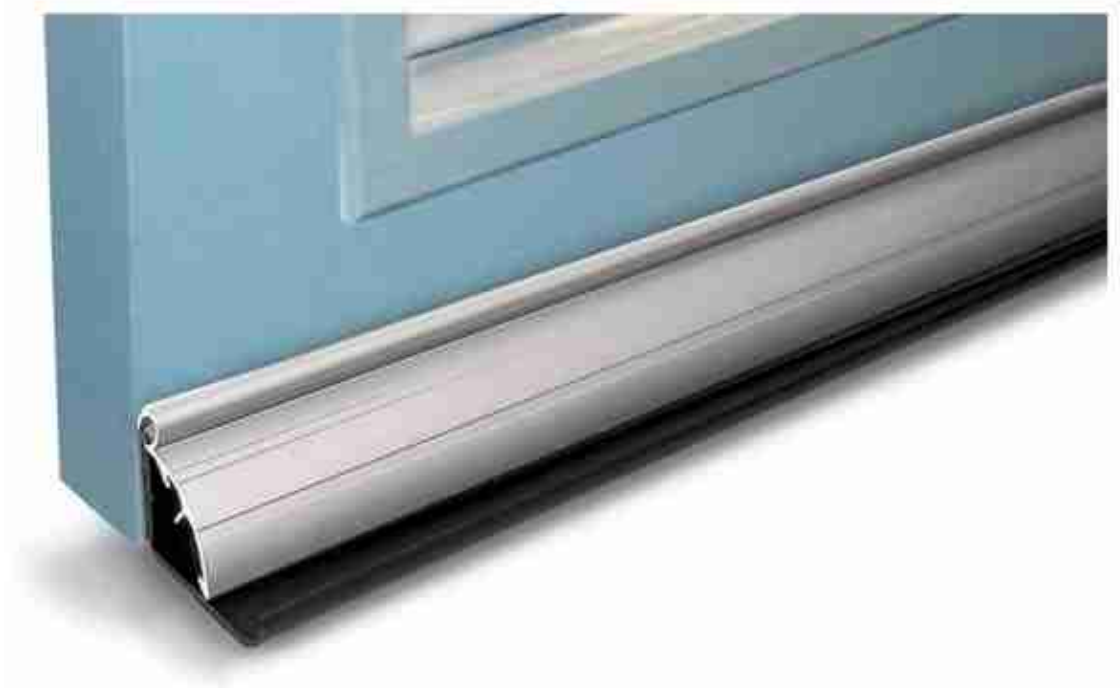


SHADING



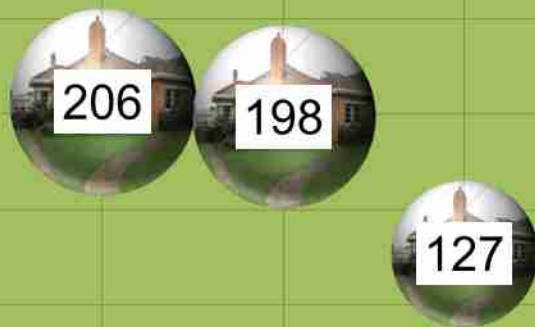


GLAZING



DRAFT PROOFING

Melbourne House Energy Use (MJ/day)



BRISBANE OFFICE ENERGY USE (GJ/day)



Sydney Shopping Centre Energy Use (GJ/day)

