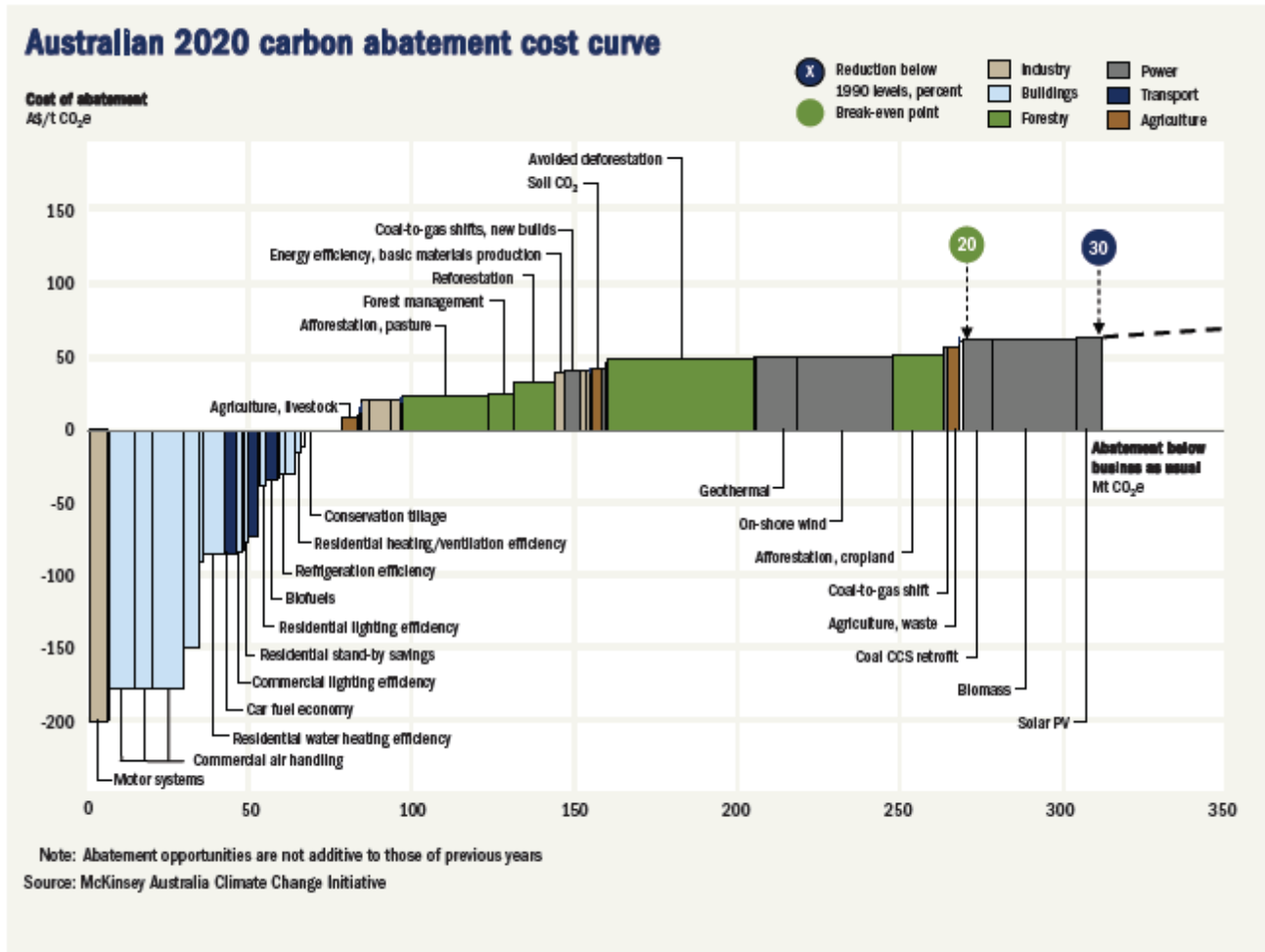


Energy efficient apartment buildings



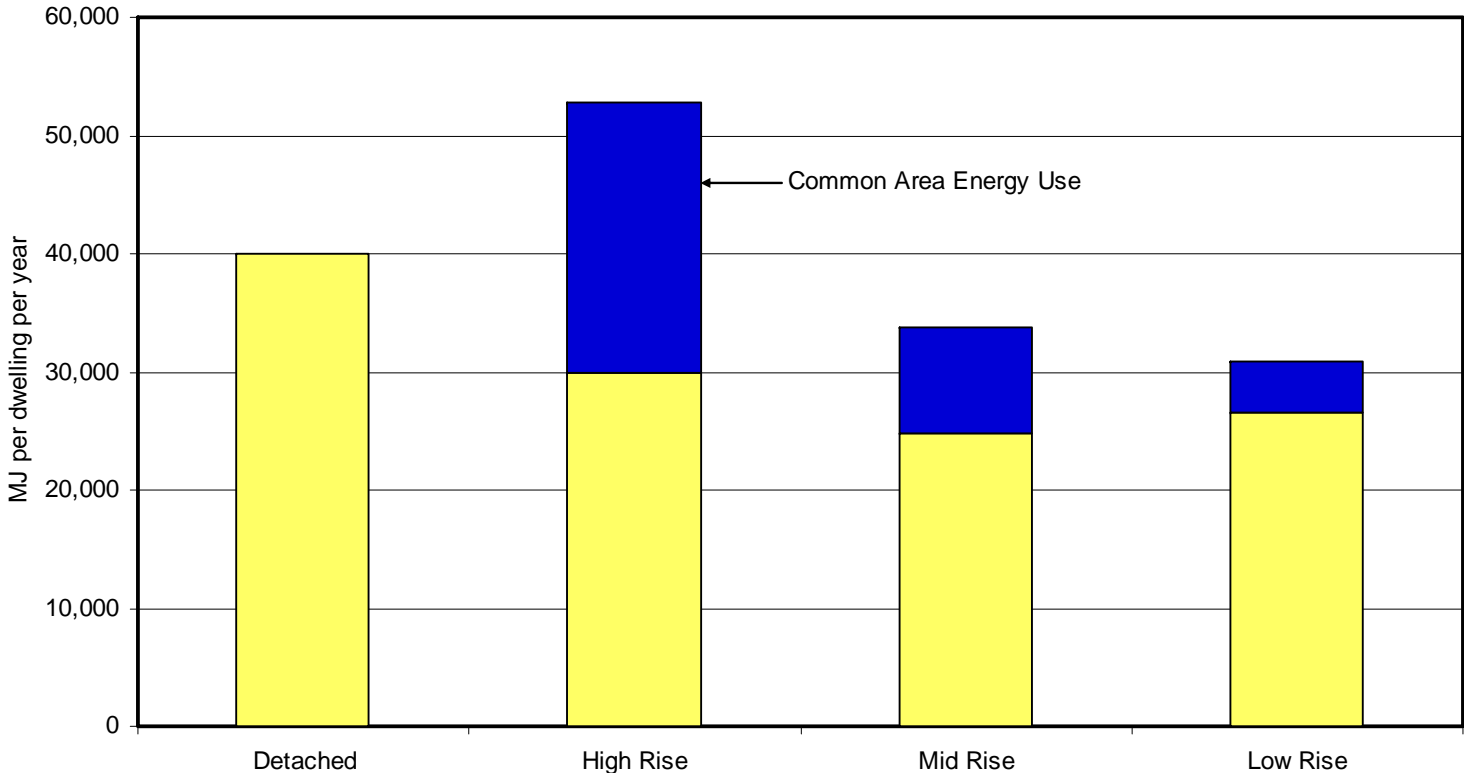
EnergyAustralia[™]
We're on it

An economist's view



How efficient are apartment buildings?

Total Energy Consumption (MJ/dwelling/year) vs. Housing type



EnergyAustralia, NSW Department of Planning - Multi Unit Residential Buildings Energy & Peak Demand Study, 2005



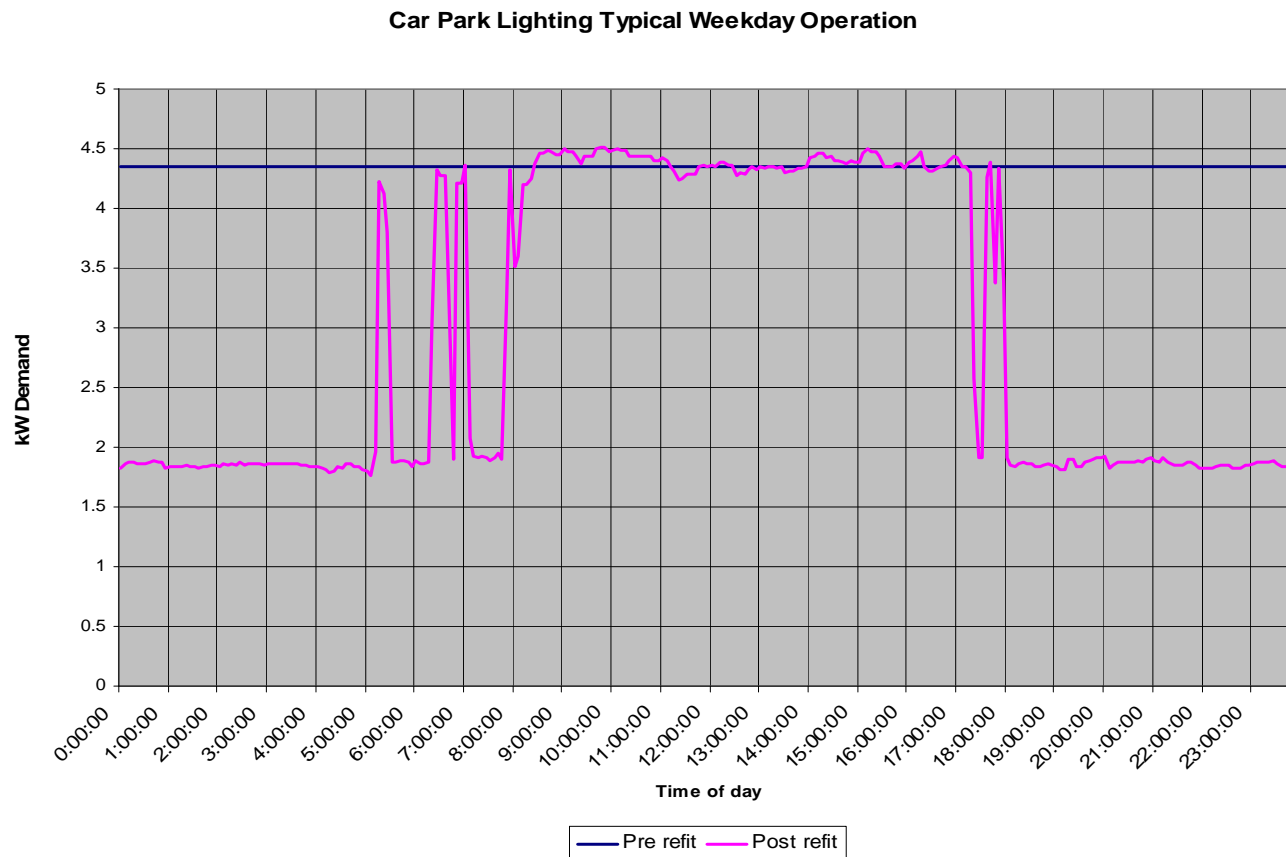
House Lights

- Lobby, hallways & car park typically 60-90% of total lighting use
- 24 hour operation common
- Options & considerations:
 - Fit for purpose – the right lamp for the need
 - Use most efficient source – commonly fluorescent
 - Install controls to operate
 - Ensure code lighting provided



Car Park Lighting Controls

- Motion sensor control
- Ensure code maintained

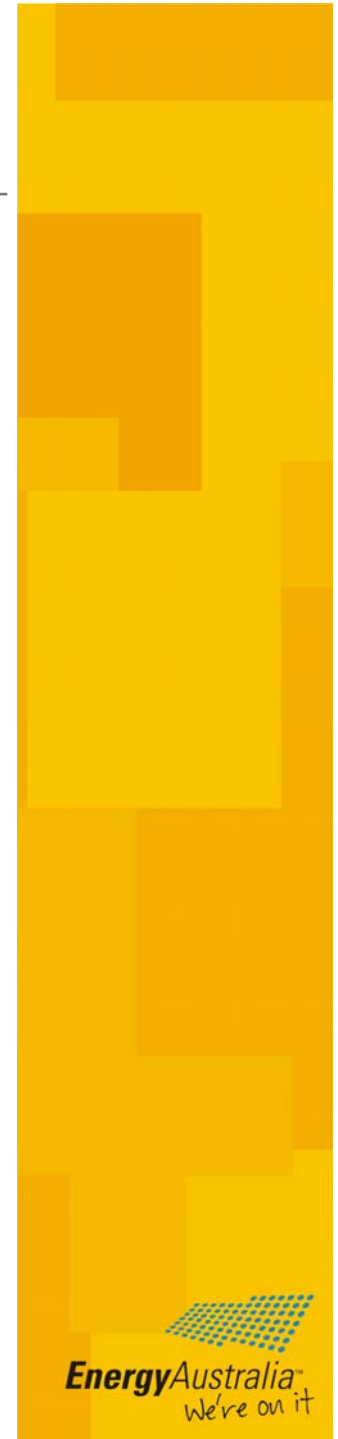
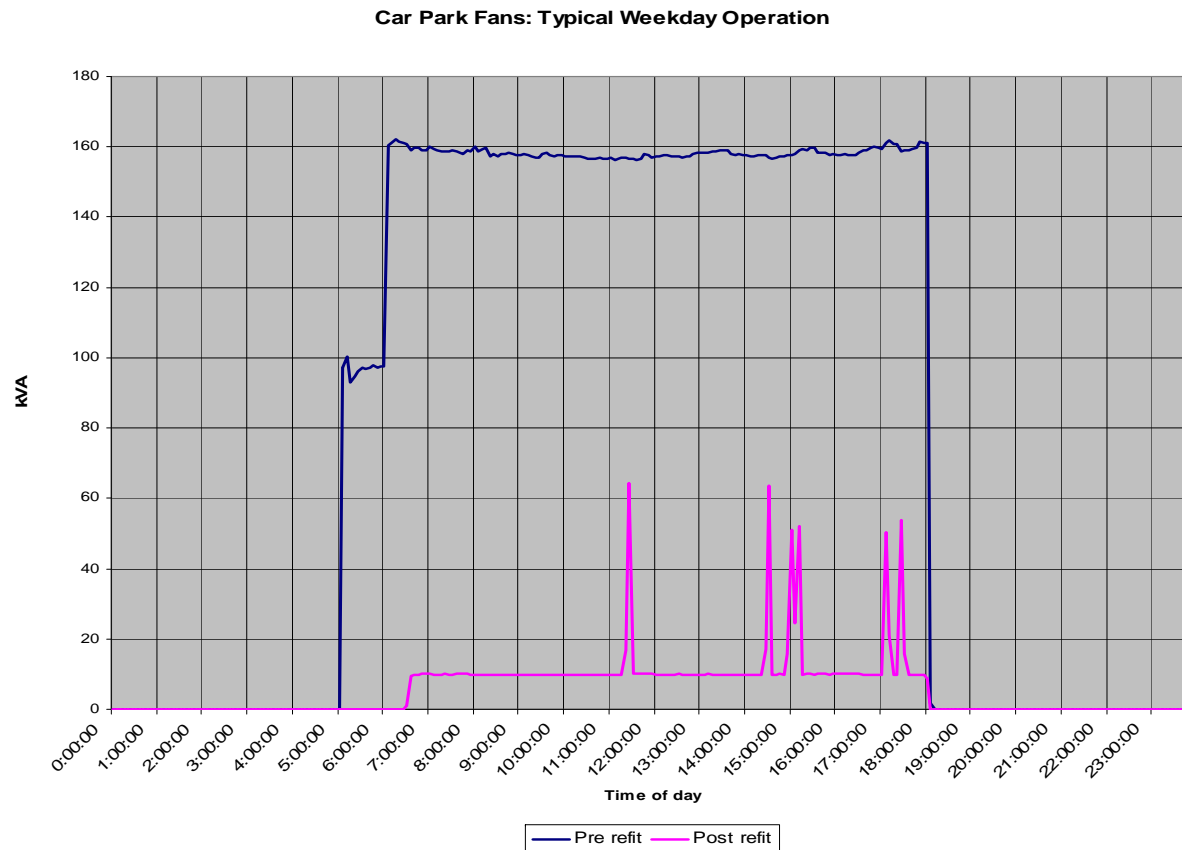


House Fans

- Typically car park and toilet exhaust
- 24 hour operation common
- Options & considerations:
 - Ensure fans are maintained properly
 - Install controls to operate

Car Park Fan Controls

- Carbon monoxide sensors for control
- Variable speed drives to control fans

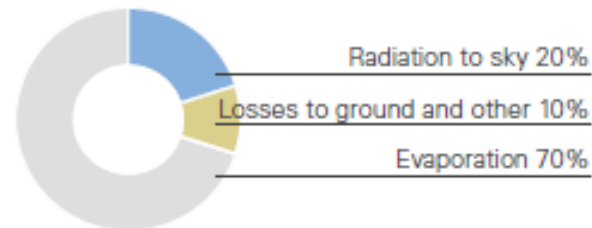


Pools, spas & saunas

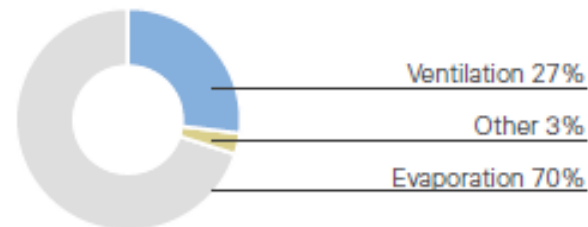
- 60-90% of energy costs from heating
- Remainder pumps, space heating and ancillary
- Electric heating more expensive than gas



Outdoor pool energy loss characteristics



Indoor pool energy loss characteristics



Pools, spas & saunas: Options

- Set temperatures appropriately
- Consider gas, solar gas or no heating
- Regular maintenance
- Install a pool cover (exterior pool or spa)
- Humidity, ventilation and temperature controls (internal)
- Optimise filtration times



Hot Water

- Hot water typically the biggest energy user
- In apartments HW systems are most commonly:
 - Central gas units, or
 - Individual small (~ 50 litres) electric units
- Small electric units very expensive compared with off peak electric or gas
- Government rebates available to switch from electric



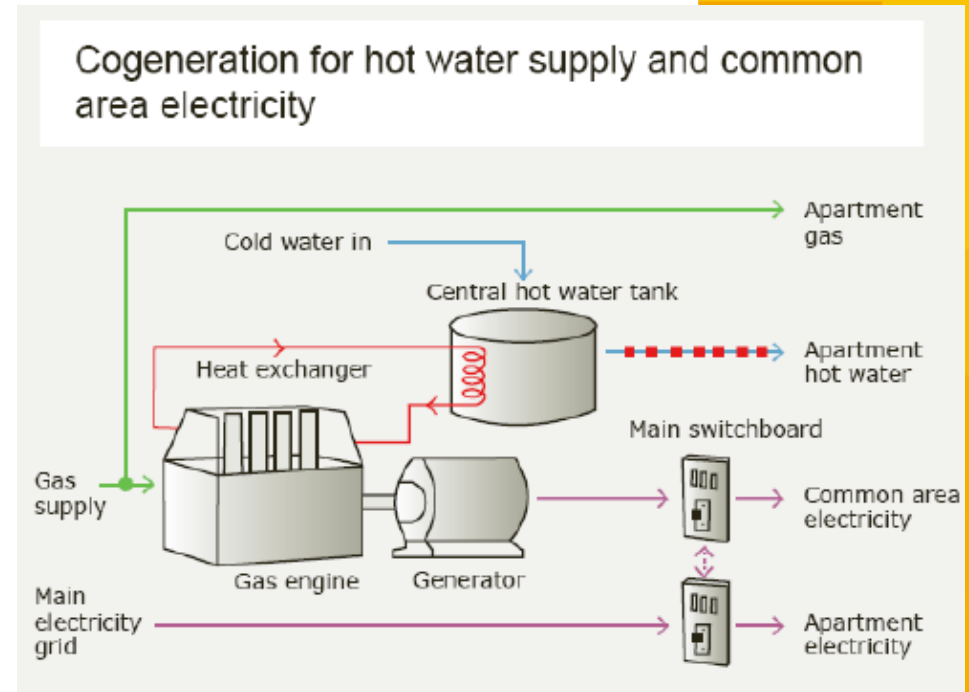
Other energy uses

Lifts, Cooling Towers & Pumps

- Use efficient lighting in lifts (24 hour operation)
- Variable speed drives and controls for fans and pumps
- Maintain equipment regularly to ensure efficient operation

Cogeneration

- Recent trial in Chatswood
- gas-fired generator
- 25 kW of electricity for common area use
- 47 kW of waste heat to central hot water system with gas boost
- Estimated 12 year payback



Why isn't this already happening?

- Information – what do I do?
- Split incentives - aligning benefits
- Salience – low savings, low priority
- Sloth – inertia even among the willing
- Short term focus – financial myopia

What can I do?

- Gather information and educate owners
- Engage with owners, encourage leaders to emerge
- Target easy wins to build enthusiasm
- Develop a long term strategy