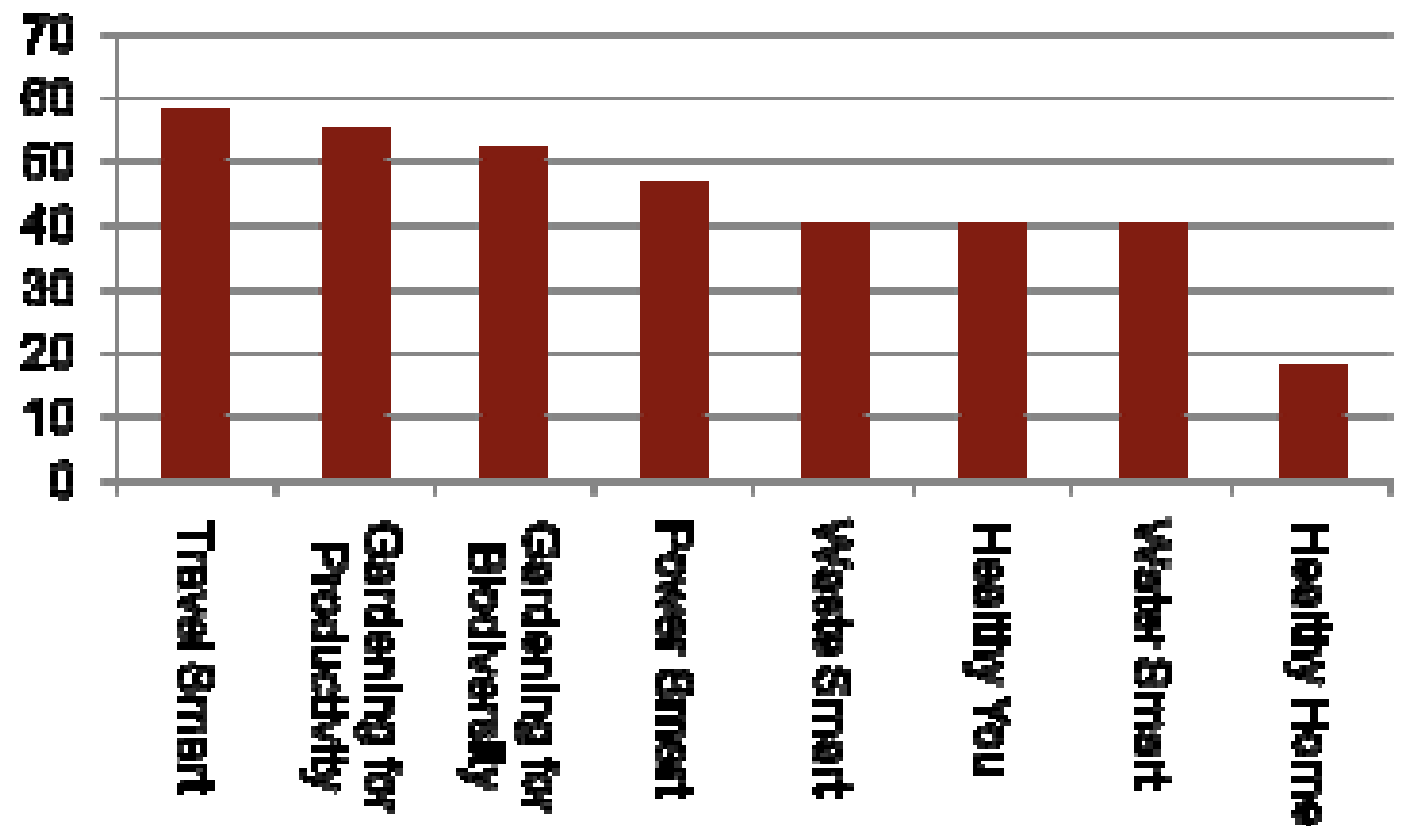




Welcome to Power Smart



Analysis of your Interests



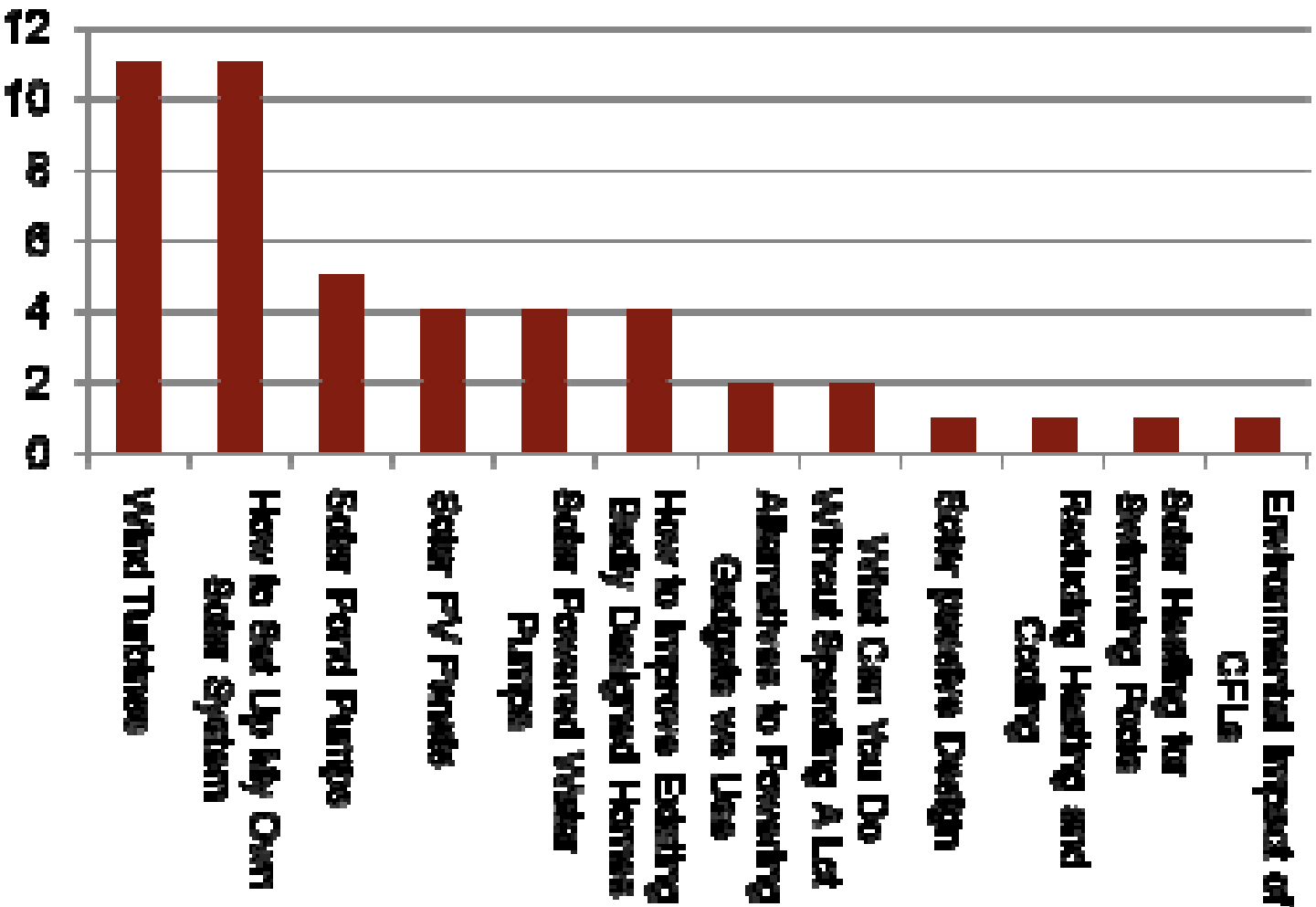
Kalamunda Course Outline

Living
Smart

Wk1: 11/11	Thinking Smart, Climate Change
Wk 2: 17/11	Power Smart
Wk 3: 25/11	Healthy You Healthy Home
Wk 4: 2/12	Gardening for Biodiversity Water Smart
Wk 5: 9/12	Waste Smart Travelling Smart
Wk 6: 16/12	Community Smart Living Simply
Field Trip: Sat 6/12	Gardening for Productivity 2:00pm to 4:00pm



Power Smart Topics



What Have You Done Since Last Week?

- In Table Teams:
 - Discuss what you have done since last week;
 - Select the person/household that has achieved the most;
 - Prepare to report back to main group;
- Time: 5 minutes



Power Smart

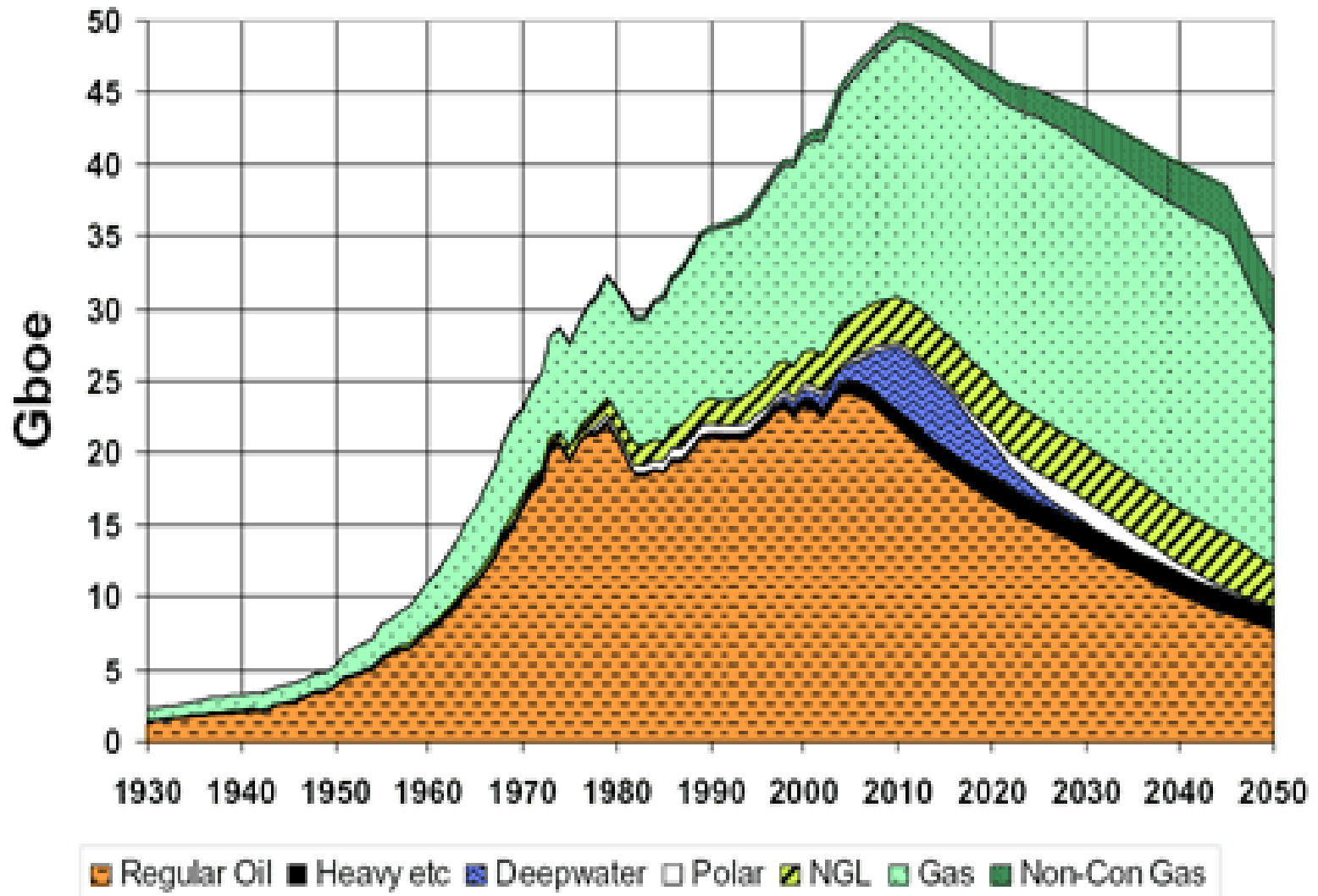
Why?



Peak Oil & Gas – Finite resources

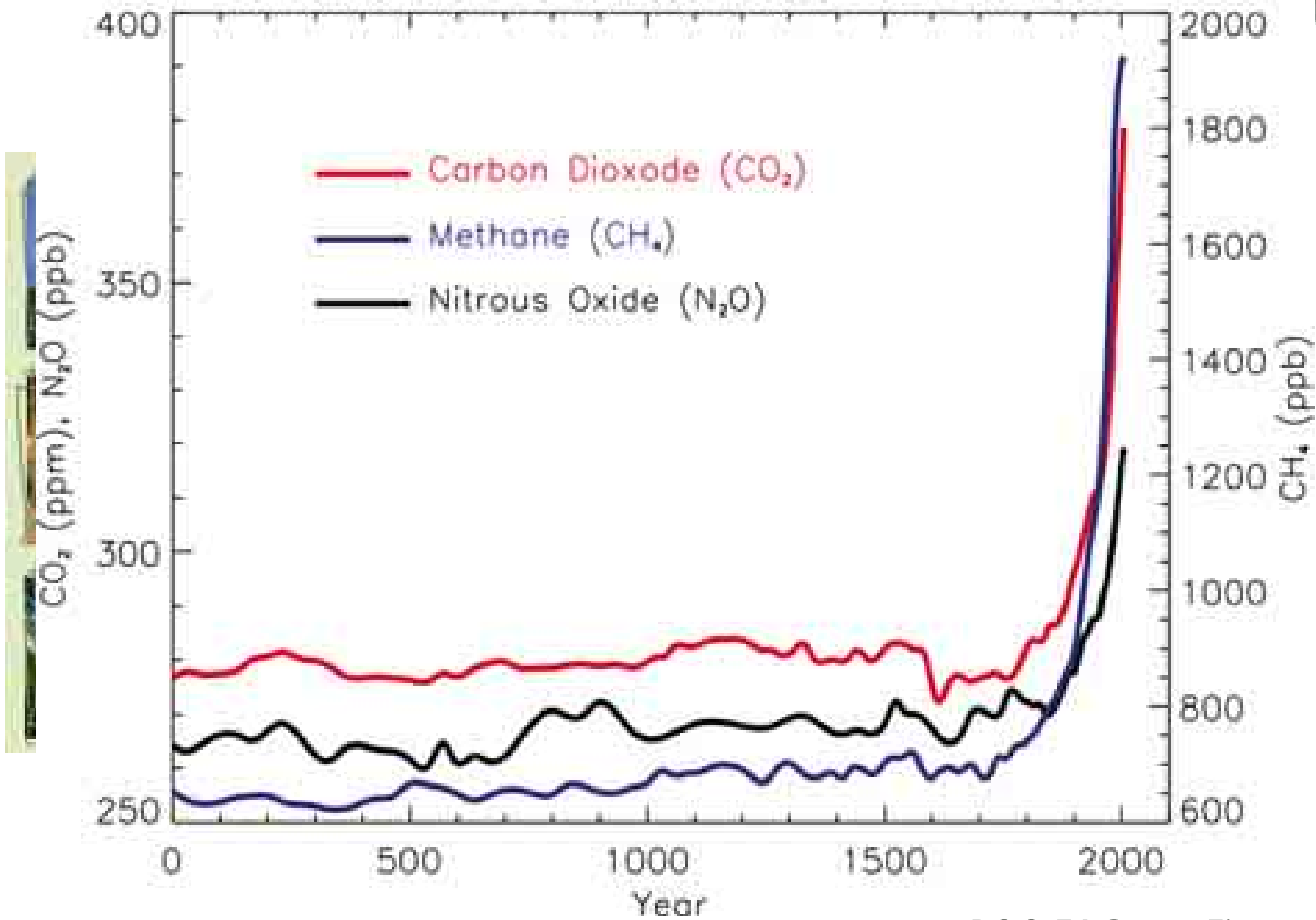


ASPO: OIL & GAS PRODUCTION PROFILES
2005 Base Case



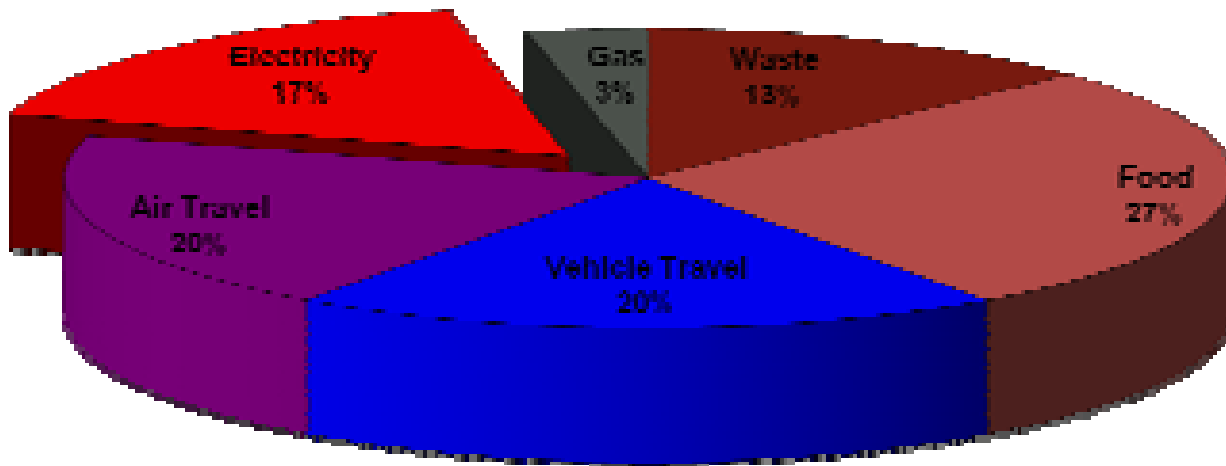
Concentrations of Greenhouse Gases from 0 to 2005

Living
art



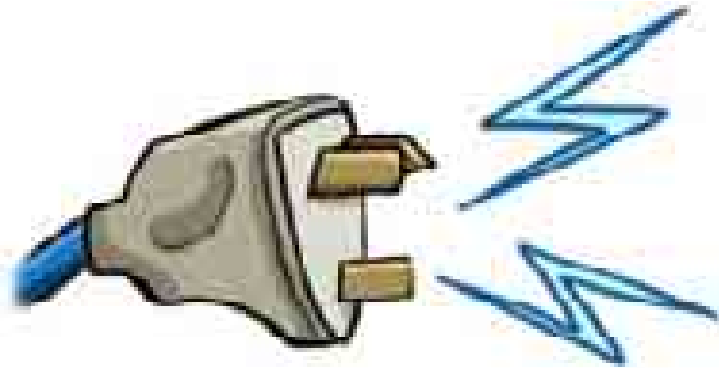
IPCC FAQ 2.1, Figure 1

Electricity Represents 17% of the Average Aussie Household's GHG Emissions

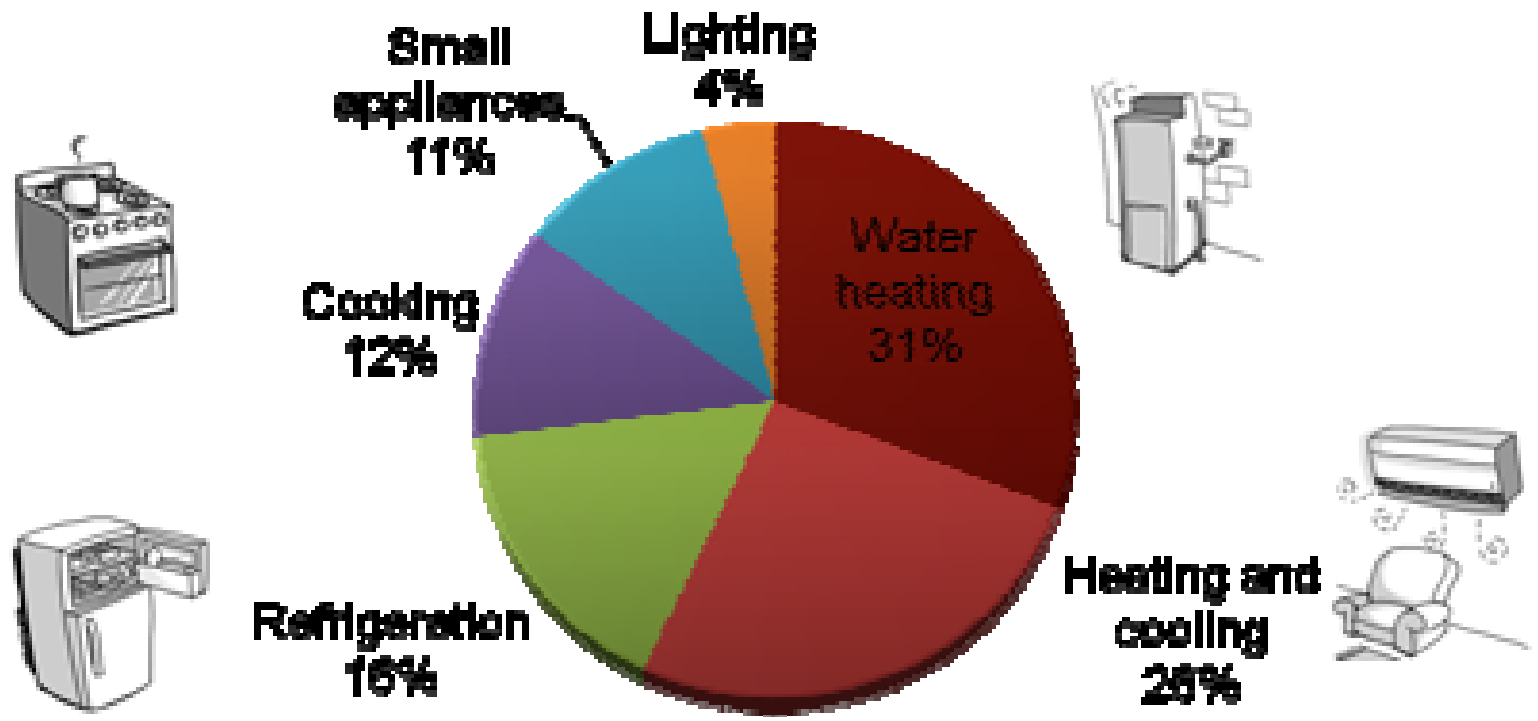




Which
appliances
consume the
most
electricity?



Energy use chart for an average home



What can I do?

- **Measure YOUR energy use**
- **Address your energy use**
 - Hot water actions
 - Heating & cooling actions
 - Refrigeration & Cooking
 - Lighting
- **Address your electricity source**
 - GreenPower tariff from Synergy
 - Your own roof-top solar PV system
- **Address energy in goods, travel**



Measuring Your Energy Use



- Multifunction Meter;
- Simple to operate;
- Accurate over long time period;
- No good for stand-by power.
- \$29.95
- Altronics

Measuring Your Energy Use



- Power Usage Meter;
- Simple to operate;
- Accurate above 10W;
- Not so good for stand-by power.
- \$69.95
- <http://shop.ata.org.au/>

Measuring Your Energy Use



- Efergy power meter;
- Simple to operate;
- Monitors energy use for entire house
- \$105.00;
- Bunnings
- <http://www.topbuy.com.au>

Alternative Technology Association



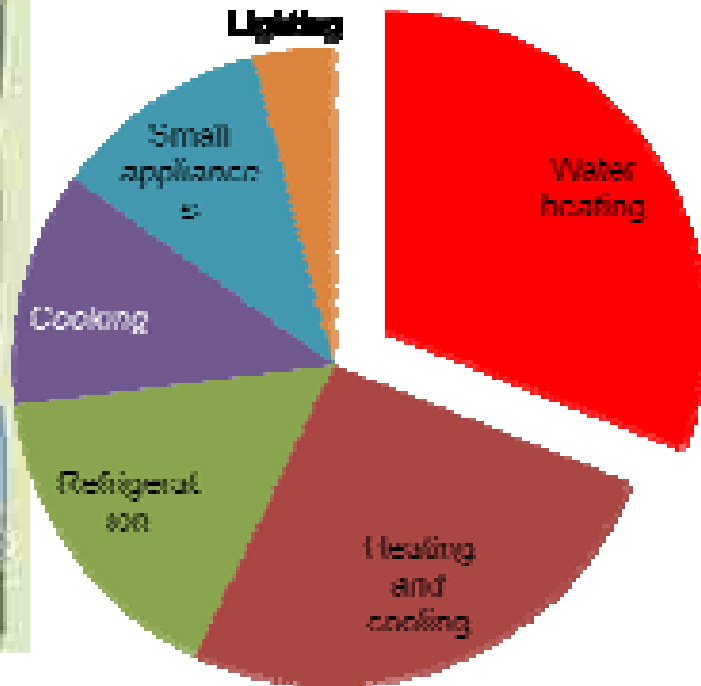
The screenshot shows the ATA website homepage. At the top is the ATA logo, a sunburst with the letters 'ATA' inside, and the text 'ALTERNATIVE TECHNOLOGY ASSOCIATION'. Below the logo is a navigation menu with links for Home, About Us, Events, News, Contact Us, Shopping, and Helpdesk. The main content area is divided into several sections:

- Categories:** A list of product categories including ATA membership, ATA directory, Battery charging, Security products, Solar, Wind, LED and electronic, Power supply, Home and Tool, Printer, and more.
- Featured products:** A section highlighting specific products, with a 'PrintView' button visible.
- Right sidebar:** Contains a 'Shopping Cart' section and a 'Log In Here' section with a login form.

The website has a green and orange color scheme. The text is in a sans-serif font. The overall layout is clean and organized.

www.ata.org.au

Reducing your Water Heating



- Time in showers;
- Minimising energy used by existing hot water system;
- Recirculating mains;
- Low flow shower heads;
- Low energy hot water systems.

INSULATE YOUR PIPES & TURN DOWN YOUR THERMOSTAT

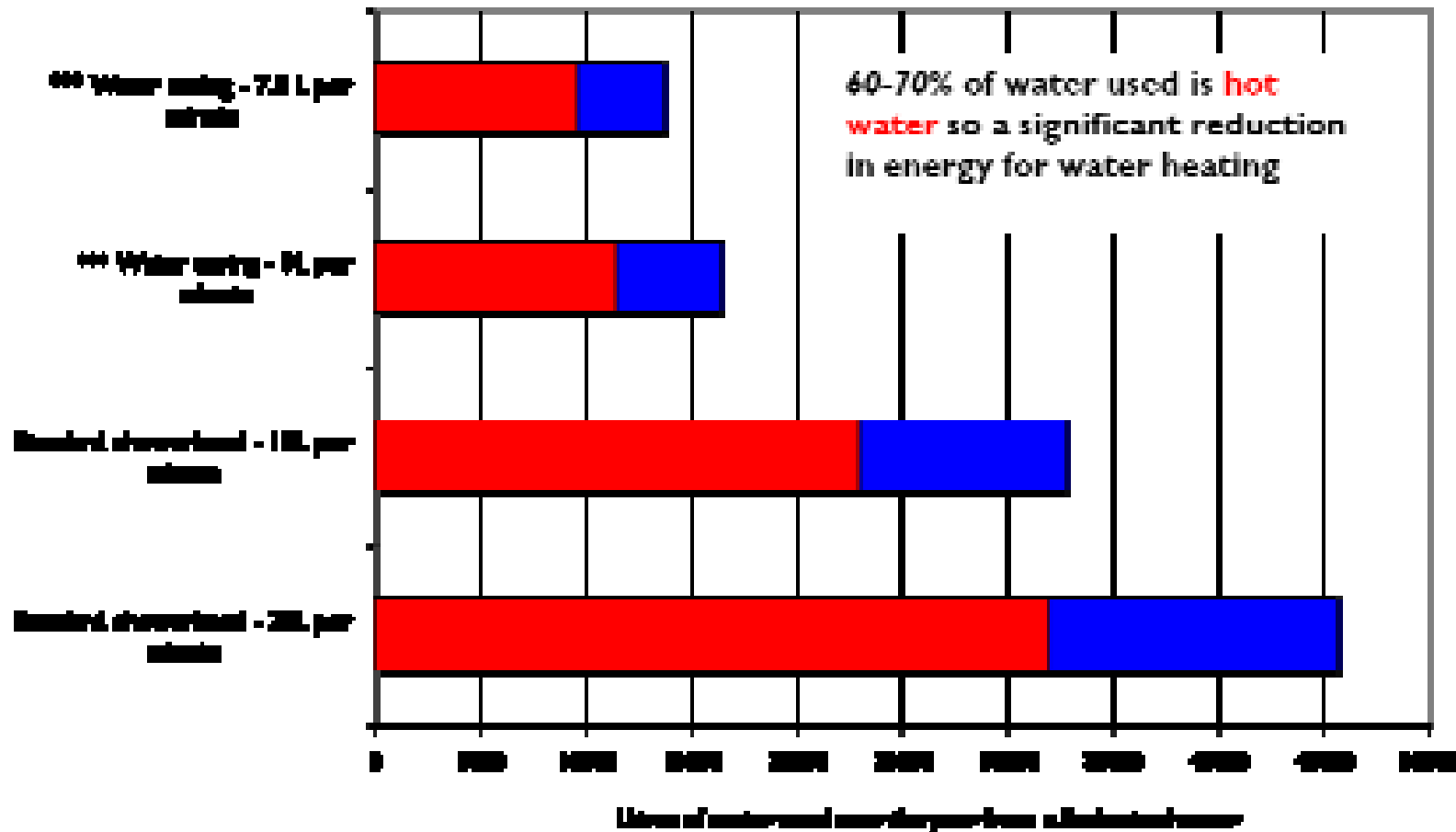


Water-Saving Showerheads

What sort of difference do water saving showerhead make in power use?



Water use from showerheads with different



Low Flow Shower Heads

- Neco;
- Aerates Water;
- 6.8l per minute
- \$149.99
- www.neco.com.au



Low Flow Shower Heads

- Perfectflow Ultimate showerhead
- 5.5l per minute
- \$24.99
- www.perfectflow.com.au

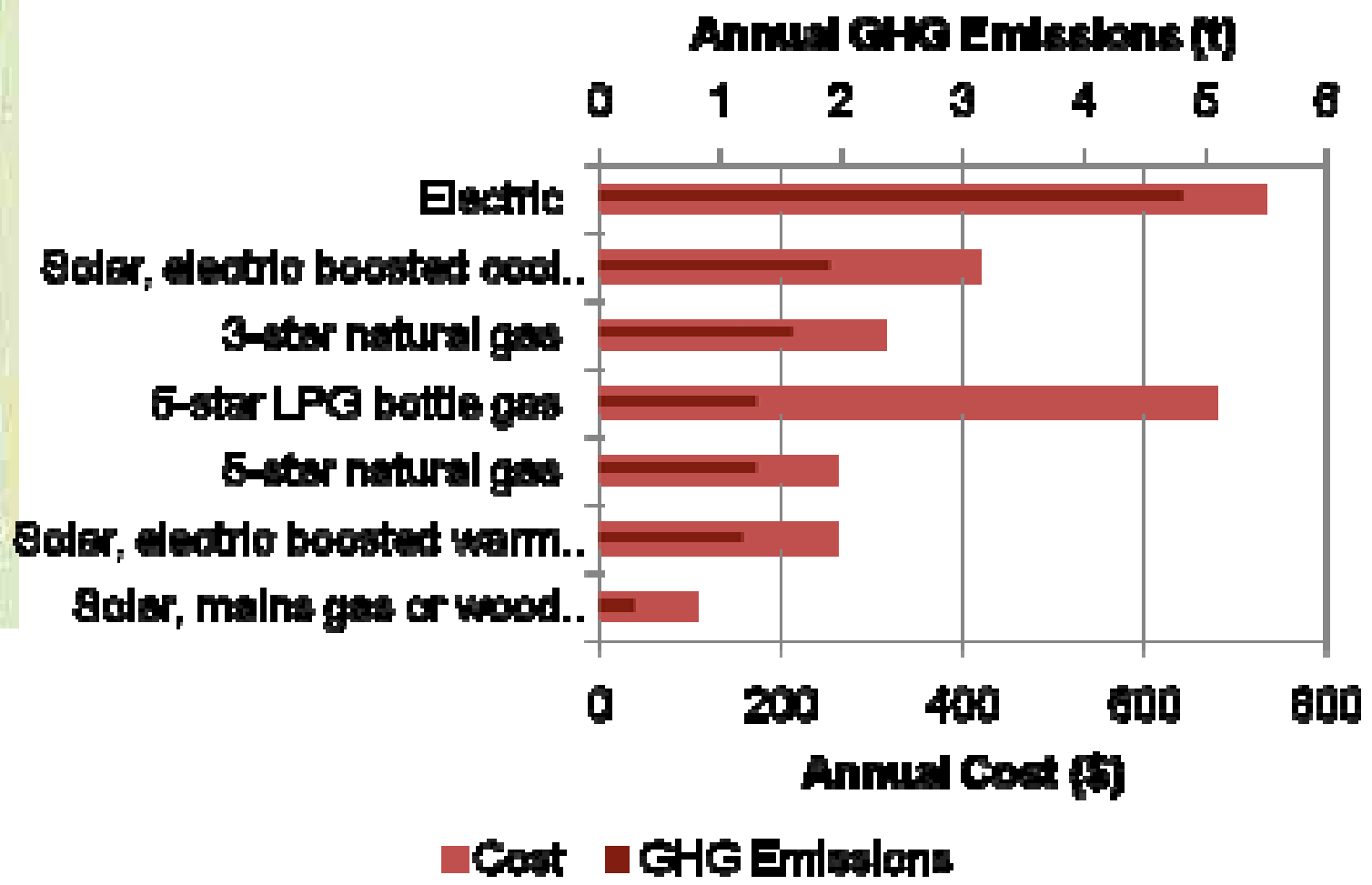


Shower Saver

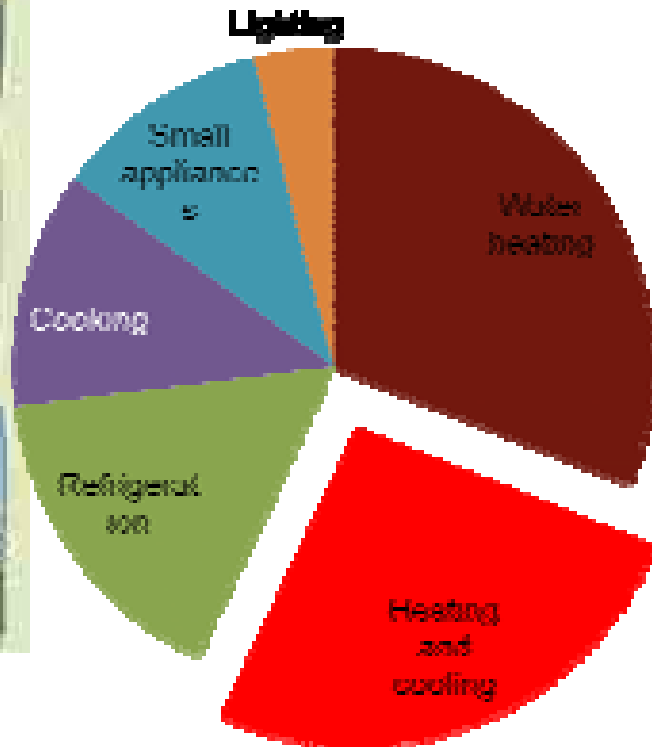


<http://www.showersaver.com.au/>

Costs and Emissions from Different Water Heaters



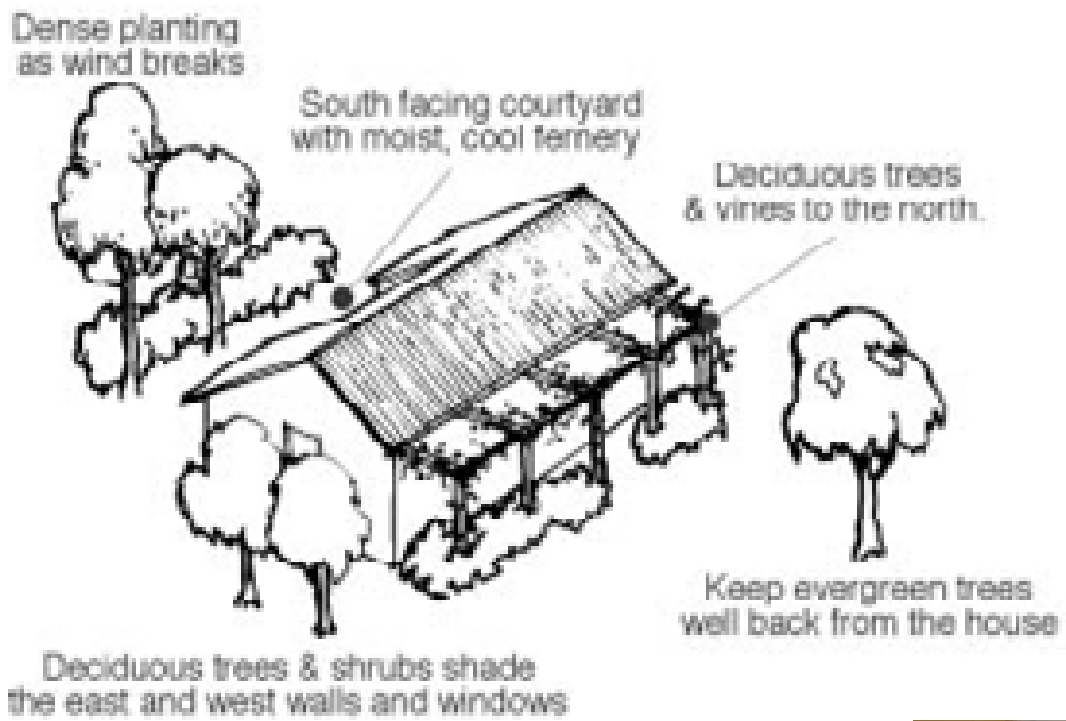
Reducing your Heating and Cooling



- Passive Solar Design;
- Retrofitting your home to make it passive solar;
- Energy efficient cooling;
- Energy efficient heating.

Passive solar heating and cooling

GET YOUR HOME TO WORK FOR YOU



Your Home Technical Manual & Renovators Guide
<http://www.yourhome.gov.au/technical/>

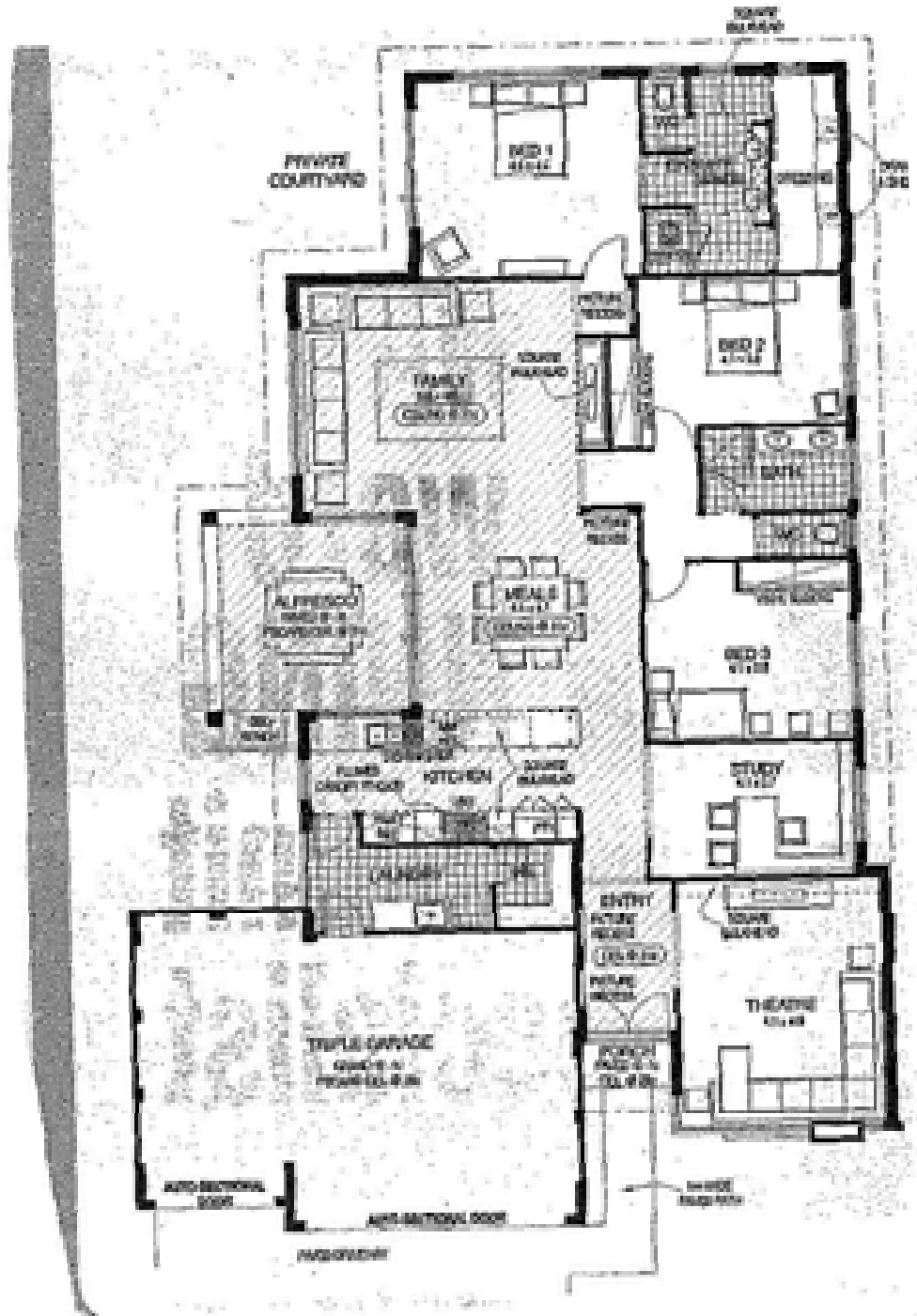
House Design Principles for renovations or new homes

In groups, assess it for:

- Long E-W axis
- Good low sun penetration in Winter from N
 - short eave to N
- Window location to start summer heat and let in winter sun
 - Lots of northern windows, few to E, W and S
- Day-living areas on the north
 - If not, what would be a good orientation?
- Other sustainability issues in the design?
- How to reduce in each room of the house?

North



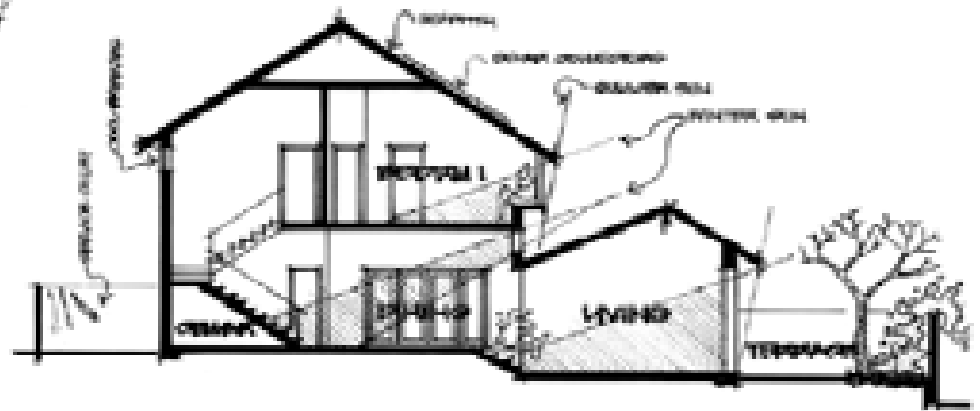


←
North

↑ North

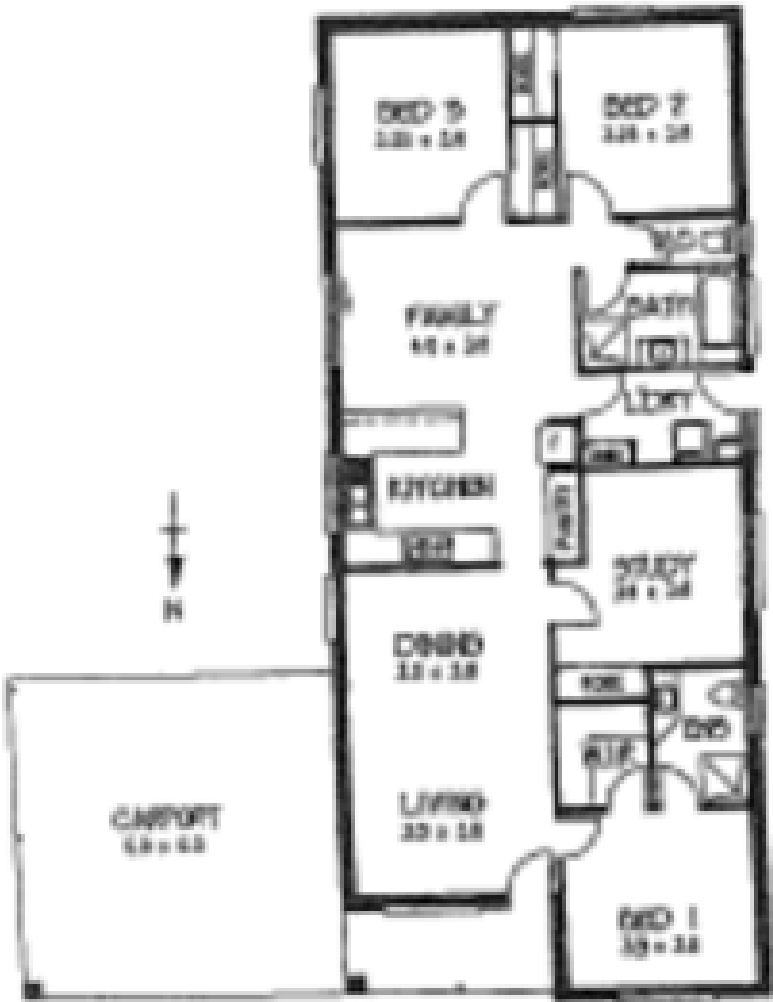


Site plan



Section

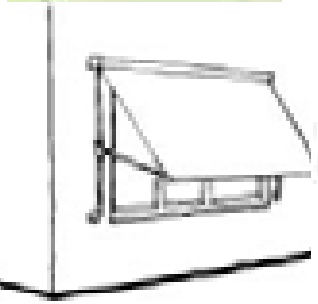
→ North



Original proposal

Blocking heat through E-W Windows

What makes a difference in blocking the sun's heat in rooms with E or W-facing windows? Suggest some solutions.



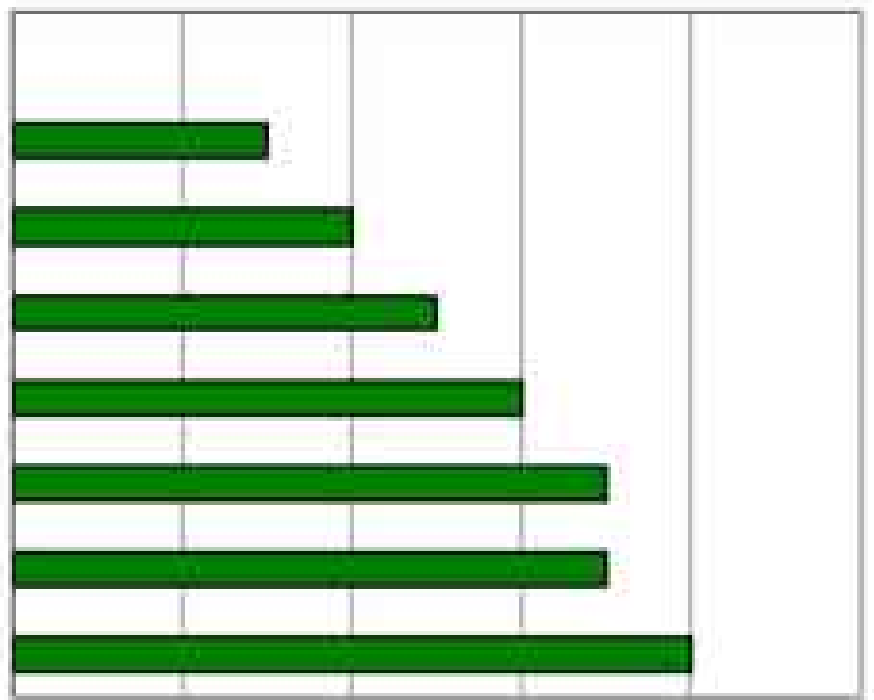
Awning blind



Reduction in Heat

0% 20% 40% 60% 80% 100%

- Unshaded single glazed window
- Internal venetian blinds
- Internal holland blinds
- Tinted glass
- Trees-full shade to light shade
- External roller shutter
- External awning
- Pergola with vines or shade cloth

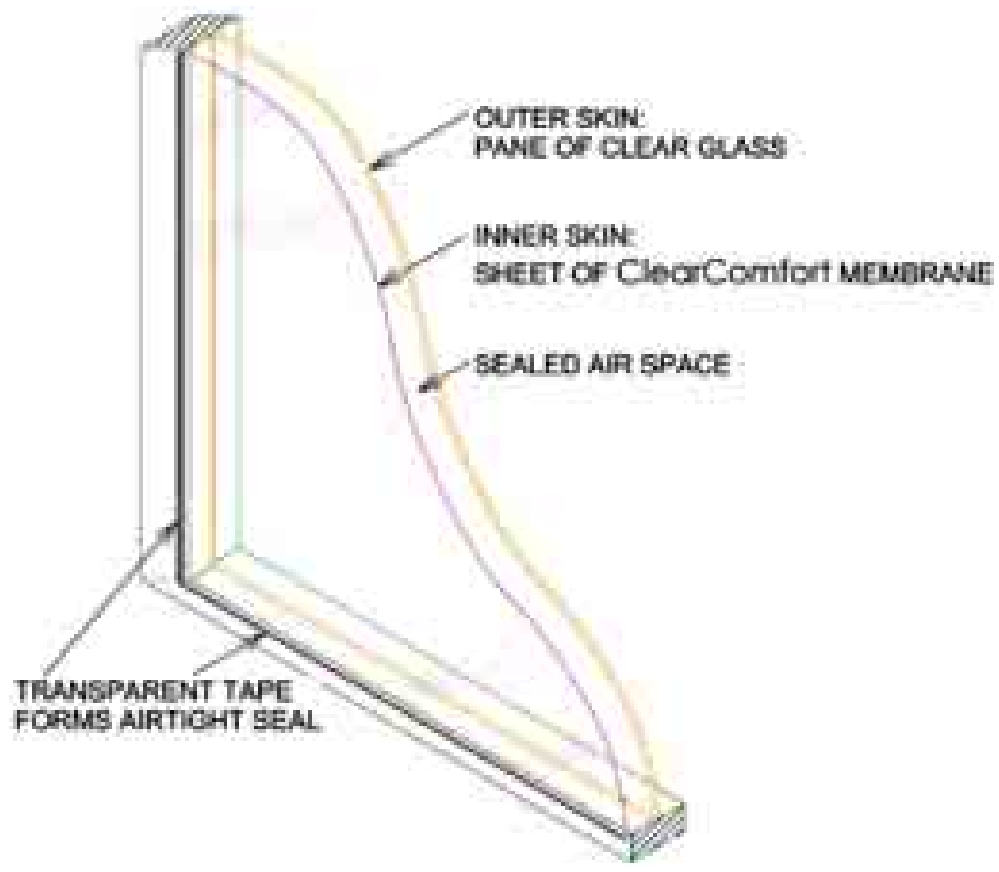


Other Options for Reducing Heating and Cooling

- Use of heavy drapes and pelmets;
- Use of solar window films;
- Use of double glazing;
- Use of secondary glazing films;
- Use of shade sails;
- Use of shade trees and green belts around houses;
- Use of whirligigs;
- Removal of heat sources from within home (eg halogen lights);
- Use of ceiling fans rather than air conditioners;
- Use of insulation;
- Use of light coloured roofing (painting a dark roof white will reduce temperature by 3C);



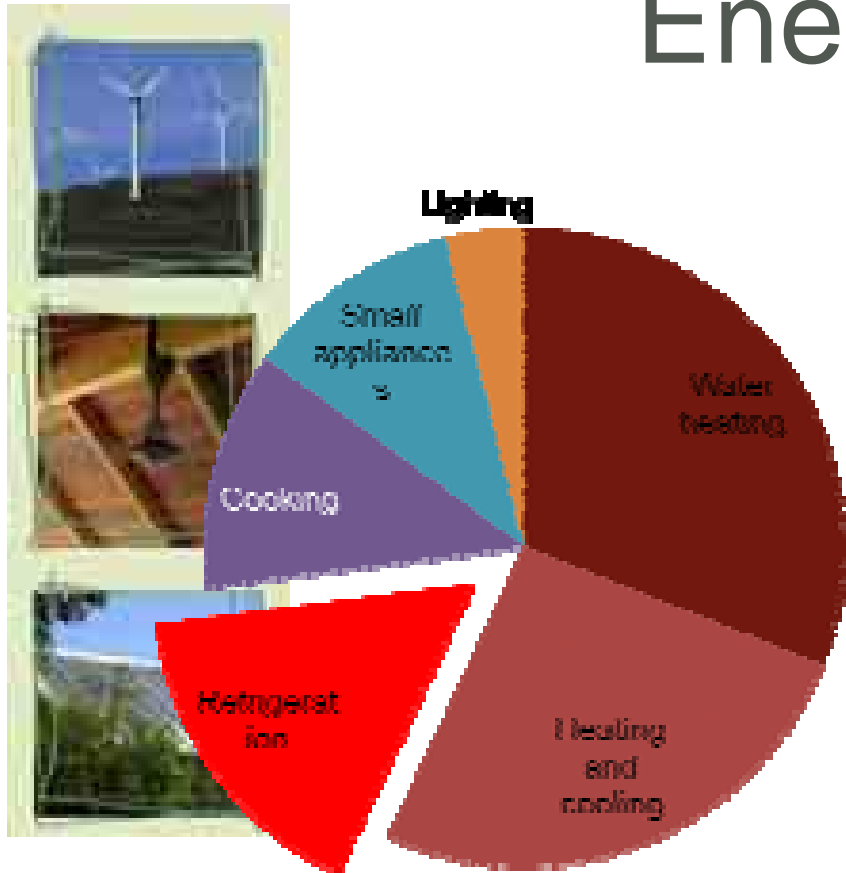
Clear Comfort Secondary Glazing



Magnetite Secondary Glazing

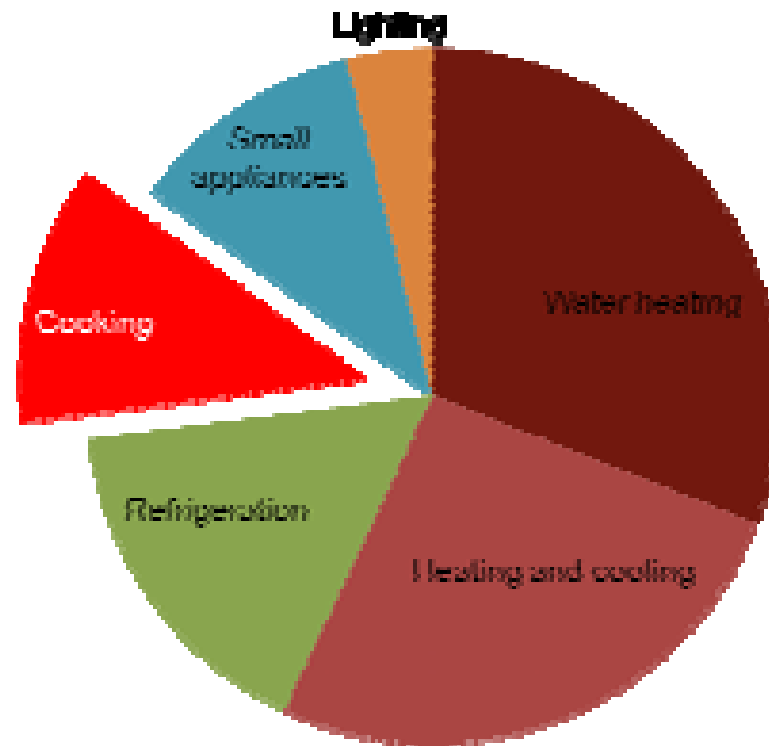


Reducing your Refrigeration Energy Use



- Get rid of “beer fridge”, or switch off except for parties;
- Replace worn seals on fridge;
- Ensure fridge is well ventilated;
- Don’t overload the fridge;

Reducing your Cooking Energy Use



Reducing your Cooking Energy Use

- Use microwave or gas (75% less energy than electric stove);
- Ensure oven seal in good condition;
- When using oven, cook several dishes at once;
- Use cooking pots with flat bases on tight-fitting lids;
- Use pressure cooker;



Buying Energy Efficient Appliances



A screenshot of the energyrating.gov.au website. The page has a yellow background. At the top, there's a navigation bar with links: Home, Integrating, Energy Programs, Regulations, Product Standards, Government, Energy Rating, and Energy Efficient. Below this, there's a search bar and a list of links: Search & Compare Appliances, Product Information, What's New?, Registering a Product, and Energy Programs. The main content area has a yellow background with a large, faint image of a person's face. At the bottom, there's a logo for the Australian Government Department of the Environment, Water, Heritage and the Arts.

www.energyrating.gov.au

Energy Efficient 400-500l Fridge/Freezers



Energy Efficient 400-500l Fridge/Freezers

Cost Calculator

Brand	Model	Capacity	Age	Energy Class	Energy Consumption (kWh/year)	Net Weight (kg)	Net Price
Whirlpool	WFC 5000	500L	1	A++	100	100	100
Whirlpool	WFC 5000	500L	2	A++	100	100	100
Whirlpool	WFC 5000	500L	3	A++	100	100	100
Whirlpool	WFC 5000	500L	4	A++	100	100	100
Whirlpool	WFC 5000	500L	5	A++	100	100	100
Whirlpool	WFC 5000	500L	6	A++	100	100	100
Whirlpool	WFC 5000	500L	7	A++	100	100	100
Whirlpool	WFC 5000	500L	8	A++	100	100	100
Whirlpool	WFC 5000	500L	9	A++	100	100	100
Whirlpool	WFC 5000	500L	10	A++	100	100	100

Switch to



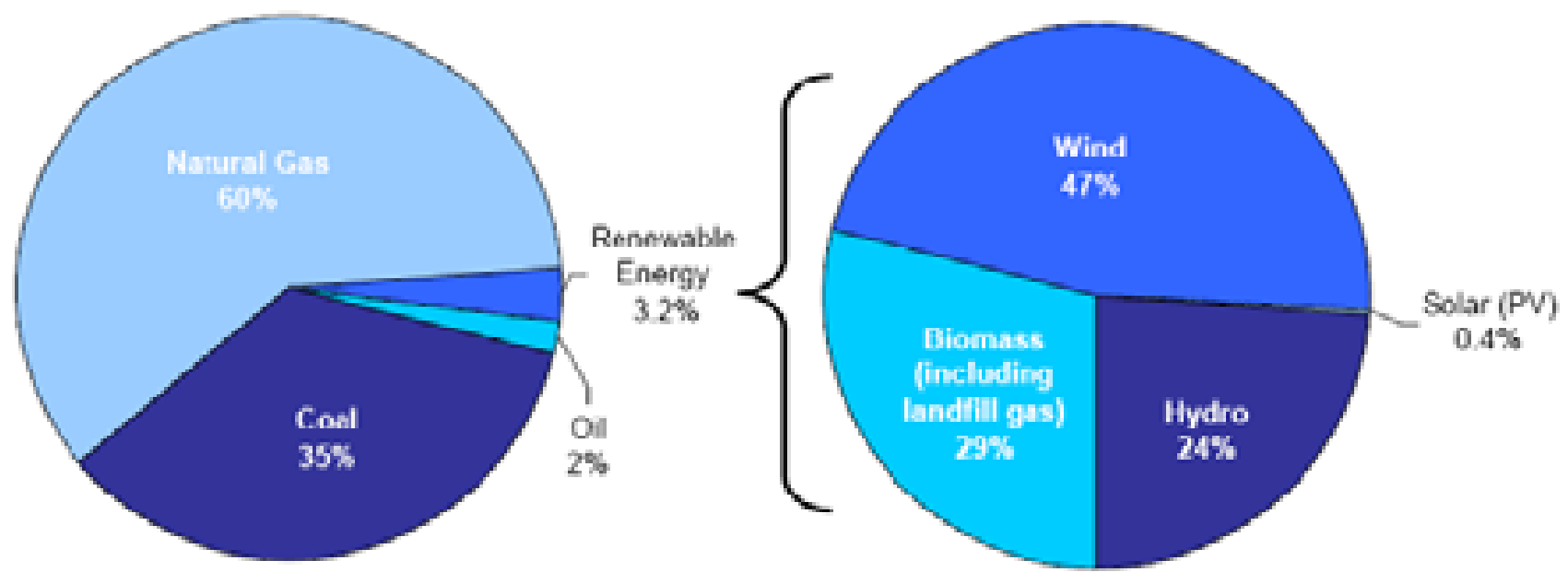
- Synergy offers two options for green power:
 - "Natural Power"
 - Costs an extra 4.4c per unit for NaturalPower
 - For the average household means an extra 50c per day
 - Ensures 100% of your electricity comes from renewable sources
 - "Easy Green"
 - Customers can sign up in \$10 annual increments
- Switching to NaturalPower or Easy Green is easy
 - Call Synergy on 13 13 54
 - Go to their website <http://www.synergyenergy.com.au>



Time for a break



2005-6 Electricity generation in WA



<http://www.energy.wa.gov.au/cproot/799/5305/RenewableEnergyFactSheetAug2006FINAL.pdf> from ABARE 2005 data

Photovoltaic Solar Panels

Darren Anderson
Sun Grid Solar





Wind Turbines

Ralph Bradstreet
ralph@bradstreet.org

Group discussion time

- How could you reach an average 80% greenhouse reduction?
 - Where do you waste energy in your home – practices and appliances?
 - What steps could you make overnight?
 - What longer term steps?



Solar Panel Offer



www.SolarUnlimited.com.au

SOLAR
Unlimited

**SMART Living
Unlimited Offer
\$200 off!
RRP prices**

Reduces 25% off the average
power bill of 20 units per day

**Japanese Poly
or US Thin Film** (see our website)

Installed by a
Perth family business

Poly from ~~\$2250*~~ \$2050*
Thin Film from ~~\$1799*~~ \$1599*

Enjoy the experience of
start enjoying solar power in
now with affordable. Start
today, the planet today.

1 3 0 0 S O L A R W A
1 3 0 0 7 9 2 2 9 2

Solar Panel Offer - Steps

1. Indicate your interest on the attendance register;
2. We will give your details to Solar Unlimited;
3. A Solar Unlimited representative will ring you to arrange a time for a visit;
4. A representative will visit you to assess your needs and quote;
5. You can sign up then and there, shop around, or decide not to proceed.



Your Goals for Next Week



Living Smart
making sustainable connections



we power smart goals

My overall goal and steps to achieve this are:

WHY: _____

WHAT: _____

WHEN: _____

WHO: _____

HOW: _____

Why I want to address this goal: _____

I will address this goal by: _____

"Whatever you do do it clean and safe, keep it healthy and green, and make it fit, keep it real!"

growing