



Power Smart



Darlington Course Outline

Living
Smart

Wk1:	Thinking Smart, Climate Change
Wk 2:	Power Smart
Wk 3:	Gardening for Productivity
Wk 4:	Waste Smart Travelling Smart
Wk 5:	Gardening for Biodiversity
Wk 6:	Healthy You Healthy Home
Wk 7:	Water Smart Living Simply



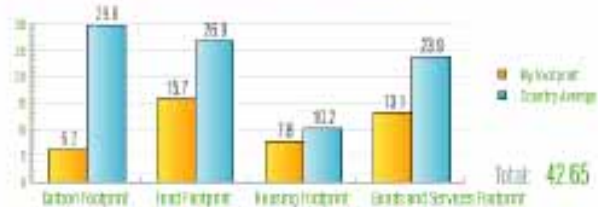
Ecological Footprint

- Eco-Footprint – hectares of biologically productive land
- How many hectares are needed to sustain your lifestyle?
- Available hectares per person: 1.8.
- Average Australian: 7.6Ha.



MY ECOLOGICAL FOOTPRINT

MY FOOTPRINT IN GLOBAL HECTARES BY CONSUMPTION CATEGORY



MY FOOTPRINT SHARE BY TYPE



**Ecological
Footprint**
REDEFINING PROGRESS

FRIDAY, SEPTEMBER 12, 2008

If everyone on the planet lived my lifestyle, we would need:

3 Earths = 2.72 Earths

TO REDUCE MY FOOTPRINT I PLEDGE (CHECK ALL THAT APPLY)

- | | | |
|---|---|---|
| <input type="checkbox"/> To increase my use of renewable energy | <input type="checkbox"/> To take mass transit whenever possible | <input type="checkbox"/> To purchase carbon offsets |
| <input type="checkbox"/> To retrofit my house for energy efficiency | <input type="checkbox"/> To replace belongings only when they wear out | <input type="checkbox"/> To plant a garden |
| <input type="checkbox"/> To adopt energy saving habits | <input type="checkbox"/> To buy more products certified as sustainably produced | <input type="checkbox"/> To eat lower on the food chain |
| <input type="checkbox"/> To walk more and drive less | <input type="checkbox"/> To increase the share of local, organic foods in my diet | <input type="checkbox"/> To recycle more of my waste |

By taking these actions, I hope to reduce my annual footprint to:
_____ global hectares or acres next year.

REDEFINING
progress
The National Economics

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



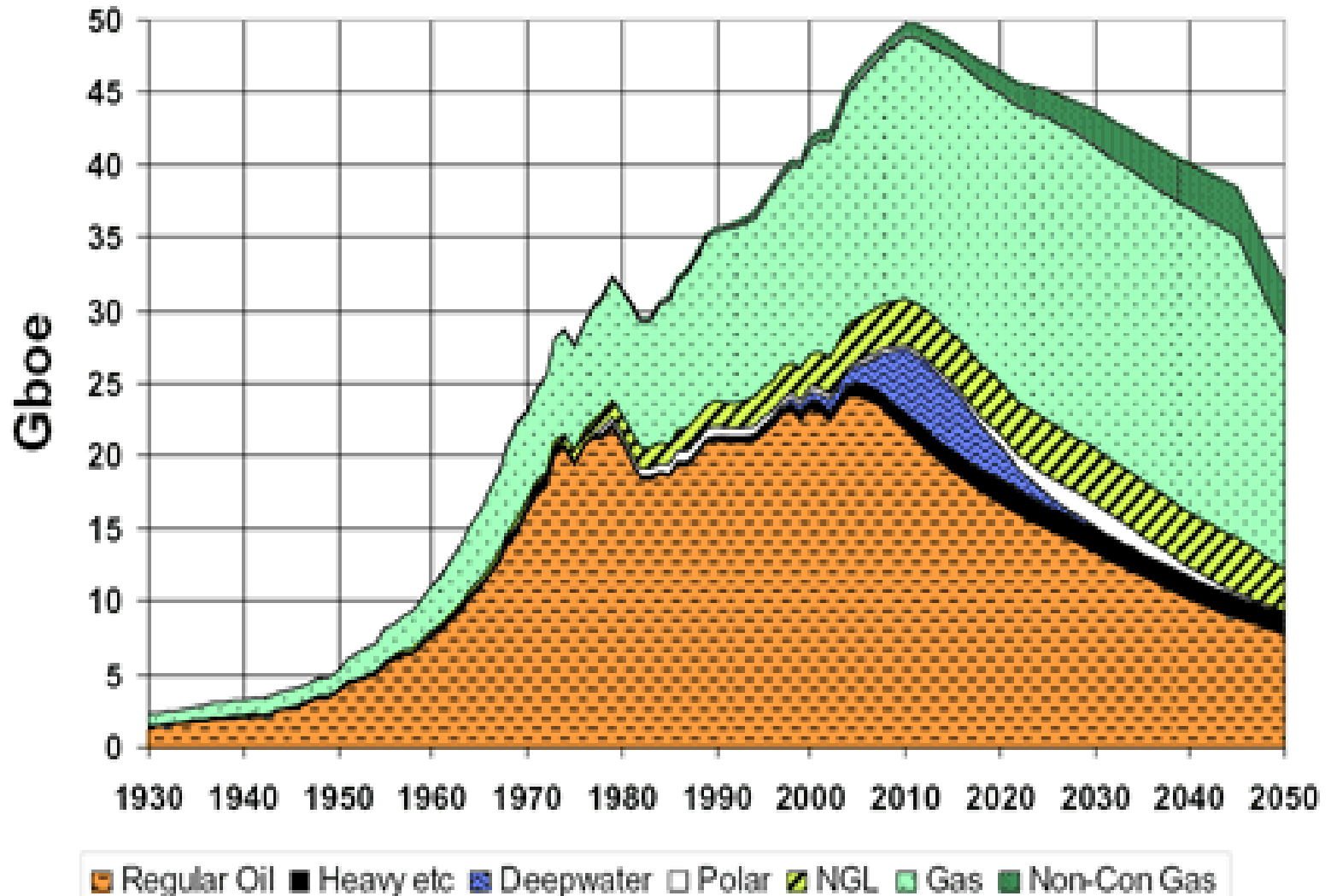
Power Smart

Why?

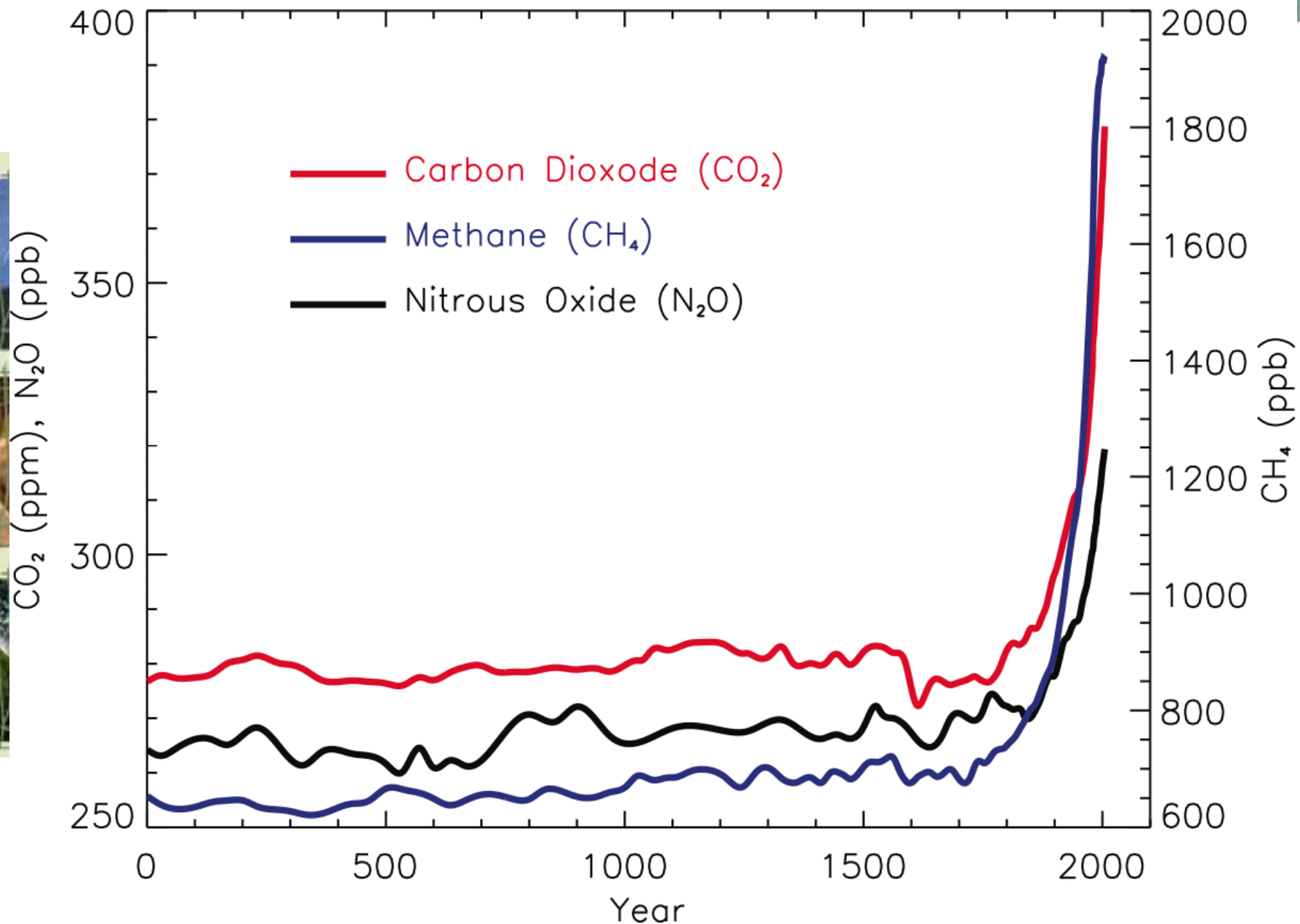


Peak Oil & Gas – Finite resources

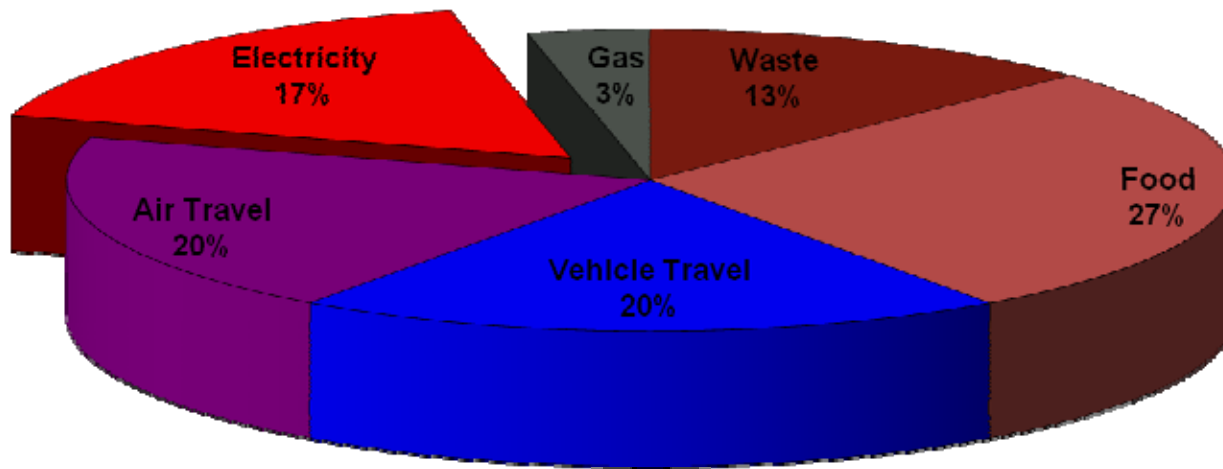
ASPO: OIL & GAS PRODUCTION PROFILES 2005 Base Case

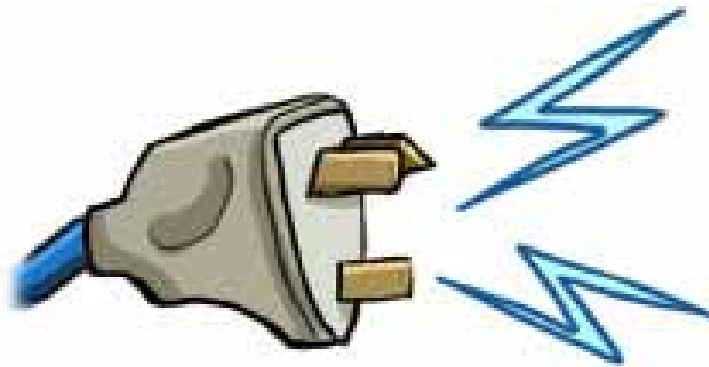


Concentrations of Greenhouse Gases from 0 to 2005

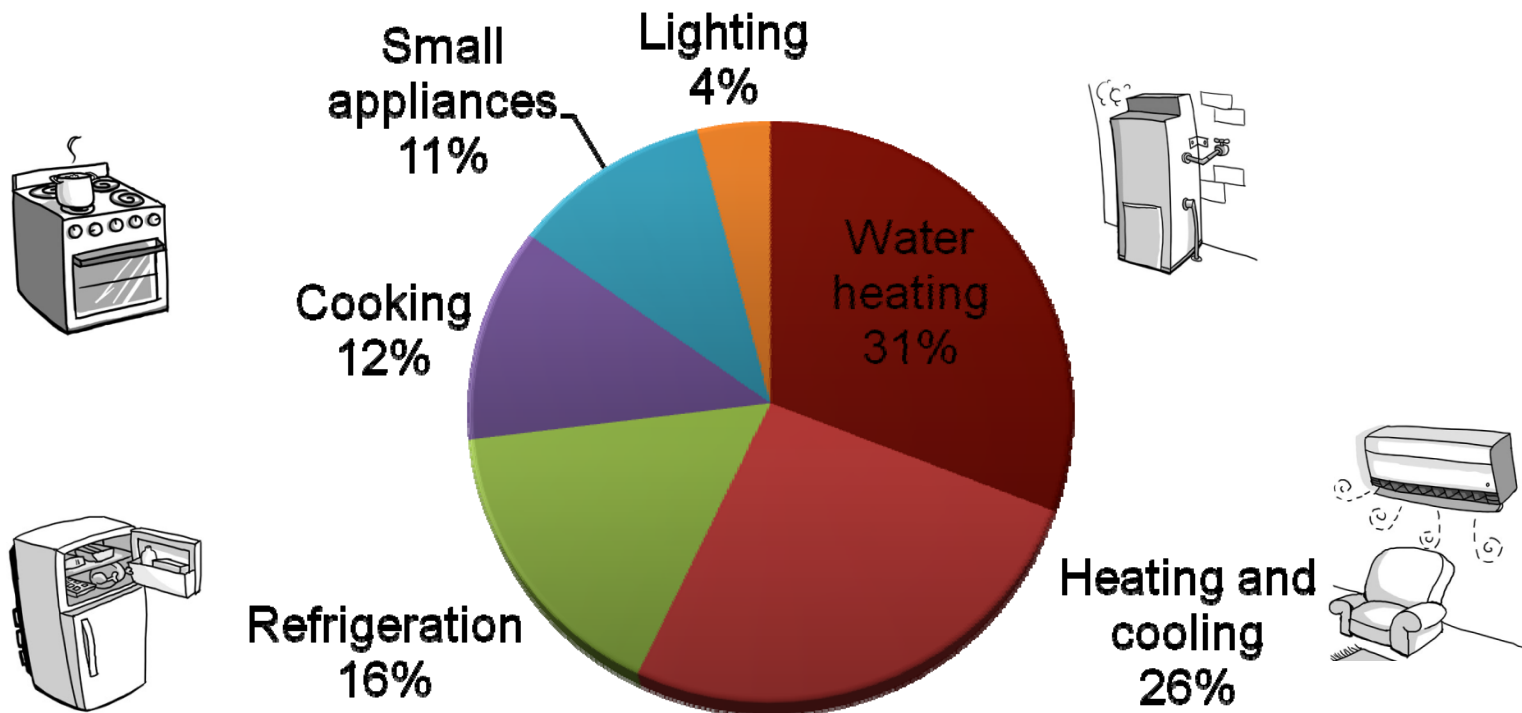


Electricity Represents 17% of the Average Aussie Household's GHG Emissions





Energy use chart for an average home



Source: SEDO

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 Energy Meter;
- Simple to operate;
- Accurate over long periods;
- No good for stand-by power.
- \$39.95
- www.todae.com.au

Measuring Your Energy Use



- Power Mate power meter;
- Simple to operate;
- Accurate;
- Suitable for Stand-by Power;
- \$295.00;
- www.ata.org.au

Alternative Technology Association



ALTERNATIVE TECHNOLOGY ASSOCIATION : Promoting energy saving & conservation to households

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Categories

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- Books
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- New products
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- MR16 LED Replacement Lamps
- LEDs and accessories
- Power Usage Meters and Test Gear
- Weather monitoring
- Electronic kits
- Educational toys
- Solar equipment and devices
- Seminar and event tickets

Welcome to the ATA's new webshop! We hope you find the new-look webshop more user friendly.

Please note that this is a new webshop. If you have not visited this version of the shop before you may need to re-register. If the shop won't allow you to register with your current email address then you already have an existing profile, so please try and login with the most likely password. If you can't login and the 'recover password' option doesn't help you, please [email us](#), thankyou.

If you are a member of the ATA, ensure your profile contains your ATA membership number to receive discounts and free ReNew downloads.

Now you can join the ATA, renew your ATA membership or ReNew subscription or buy books, magazine back issues and a range of other items in a secure environment.

To get started, just select from the categories at left. Help files are available from the links in the help section at bottom left.

If you require more information on a particular product, [email the shop](#).

If you have a question about an order you have placed and have the order number, [email our admin staff](#) or call (03) 9639 1500 between 10am and 4pm weekdays.

Please note that all prices on this shop include GST

Bestsellers

1. Low cost Superflux LED - White
2. New individual membership Australia only

Featured products



sanctuary



Shopping cart

Cart is empty

Log in here

Please note that this is a new webshop. If you have not visited this version of the shop before you may need to re-register. If the shop won't allow you to register with your current email address then you already have an existing profile, so please try and login with the most likely password. If you can't login and the 'recover password' option doesn't help you, please [email us](#), thankyou.

E-mail

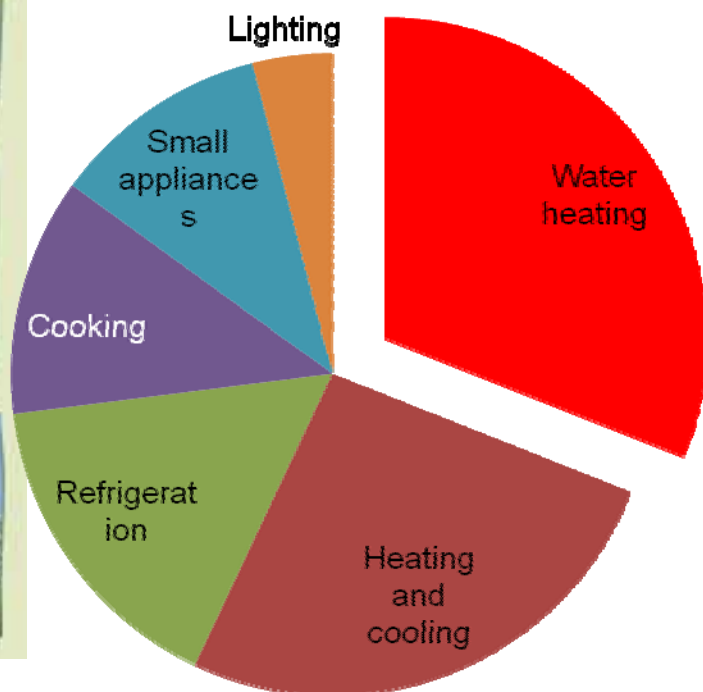
Password

[Submit](#)

[Register](#)

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

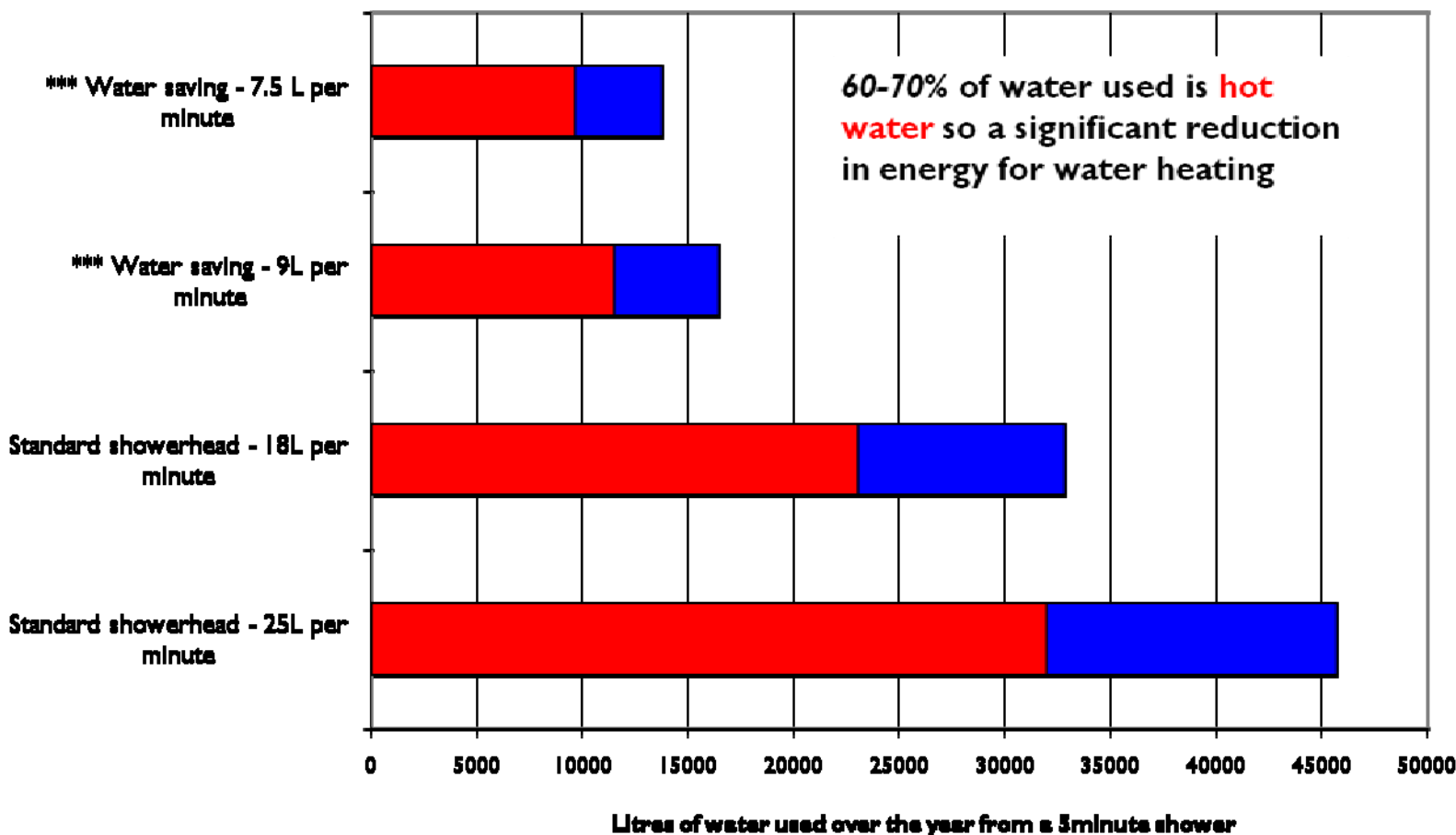


Water-Saving Showerheads

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

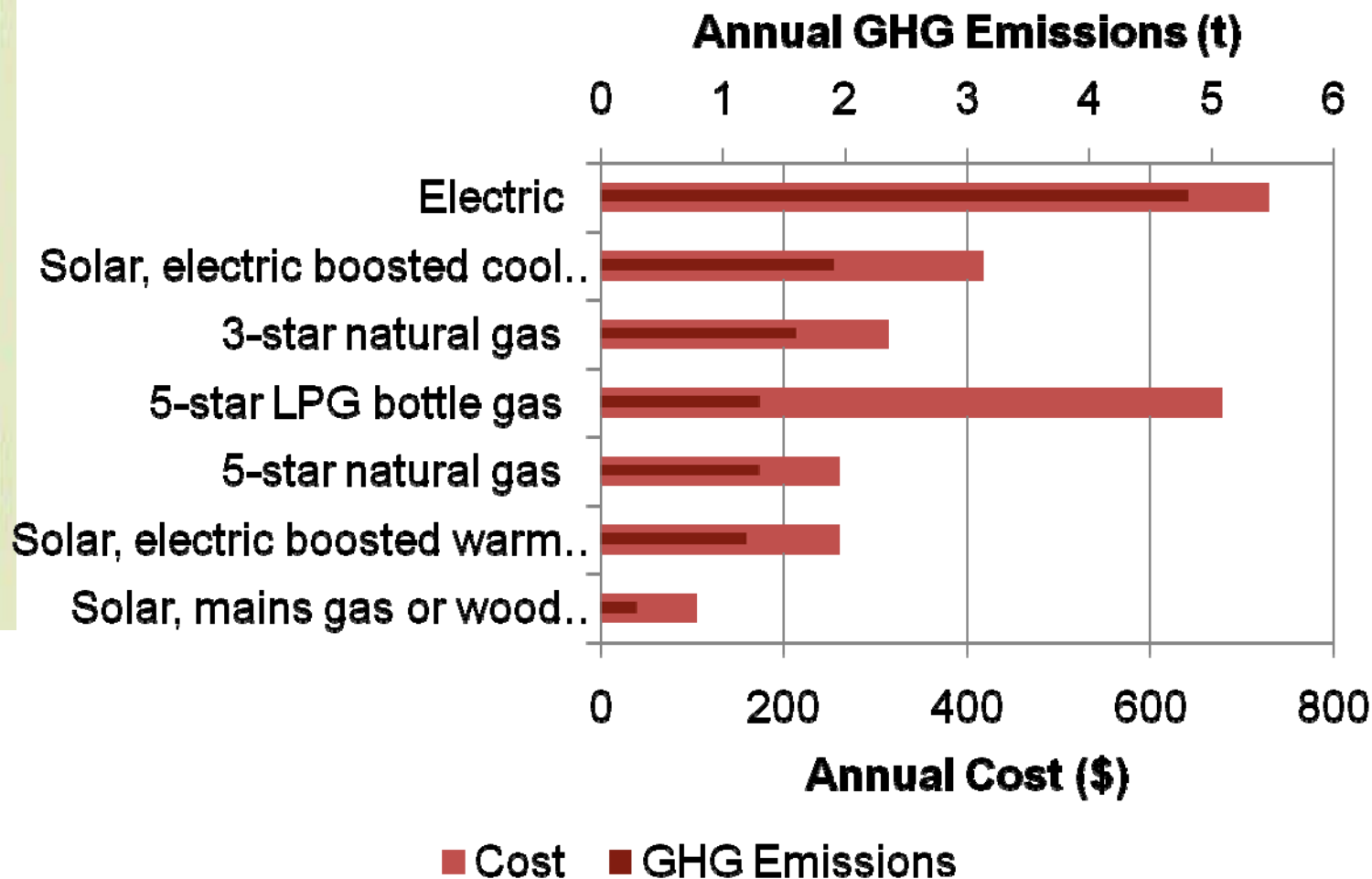


Shower Saver

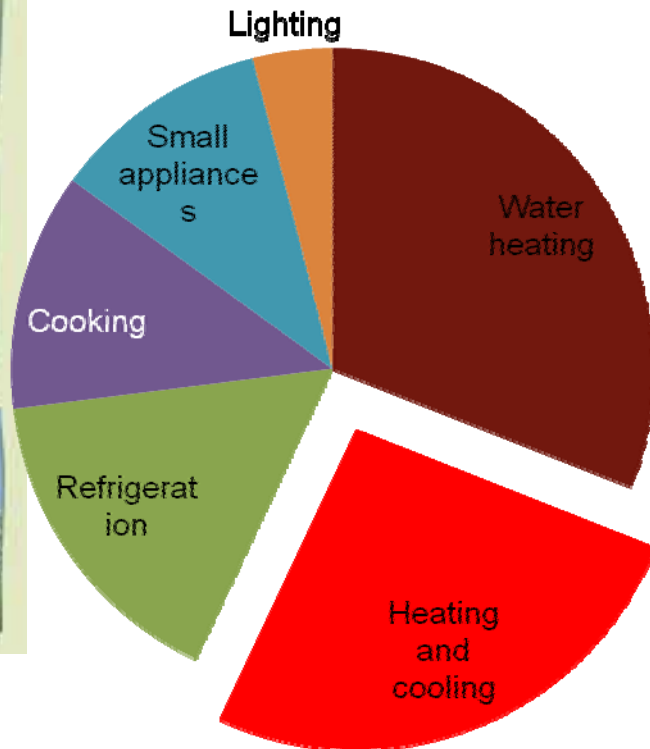


<http://www.showersaver.com.au/>

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

Dense planting
as wind breaks

South facing courtyard
with moist, cool fernery

Deciduous trees
& vines to the north.

Keep evergreen trees
well back from the house

Deciduous trees & shrubs shade
the east and west walls and windows

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

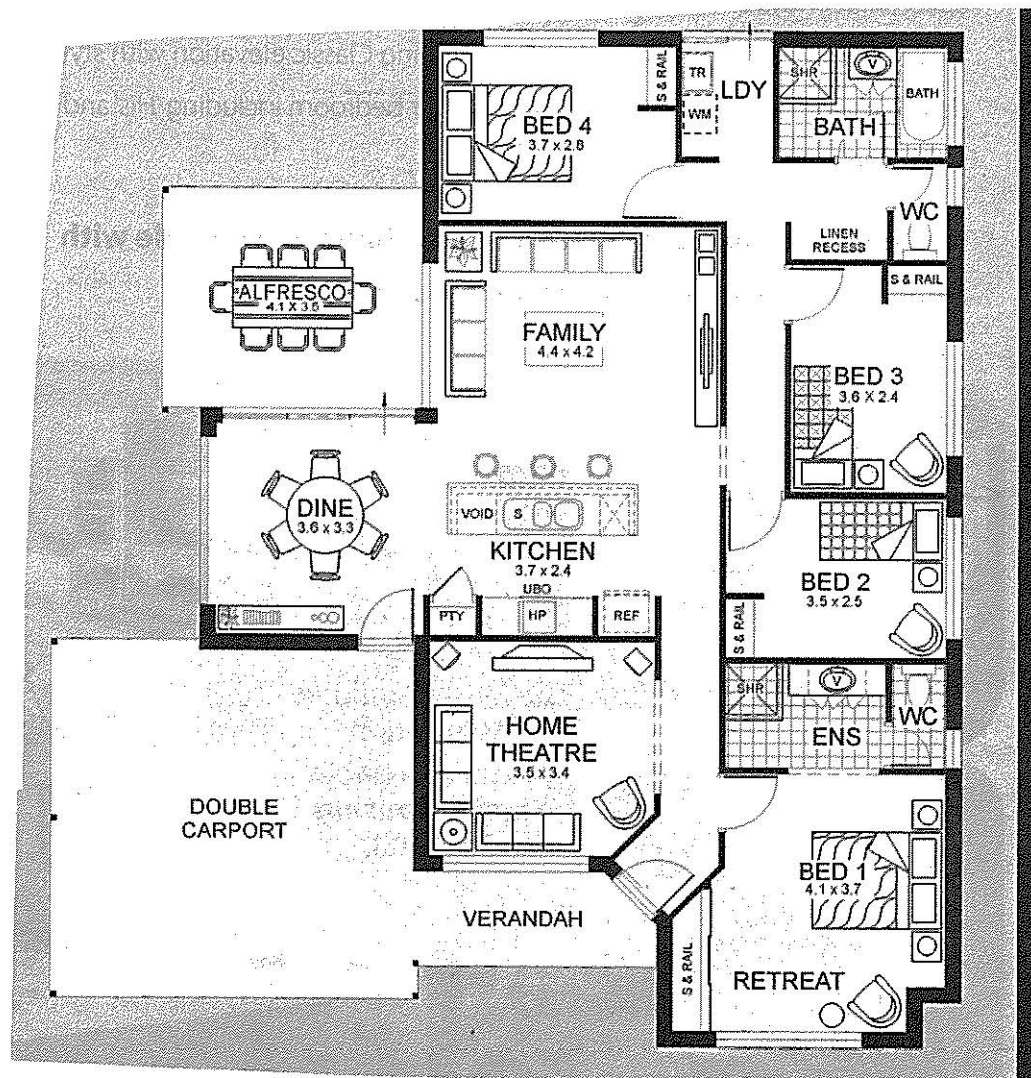


House Design Principles for renovations or new homes

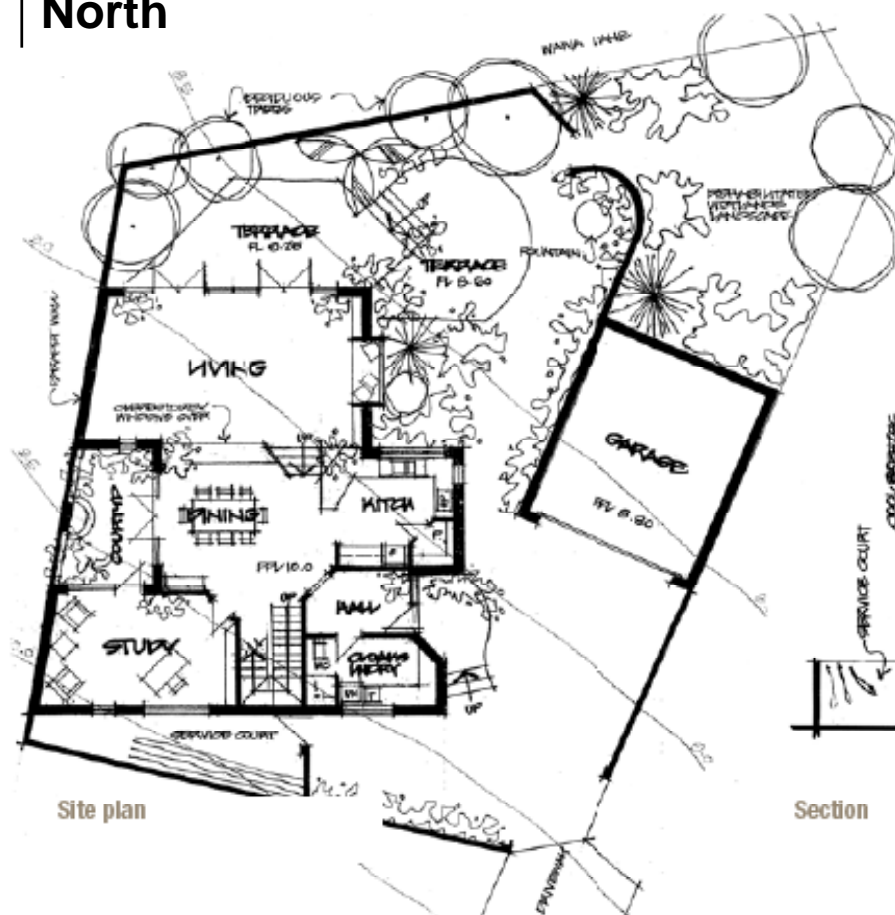
In groups, assess it for:

- 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?

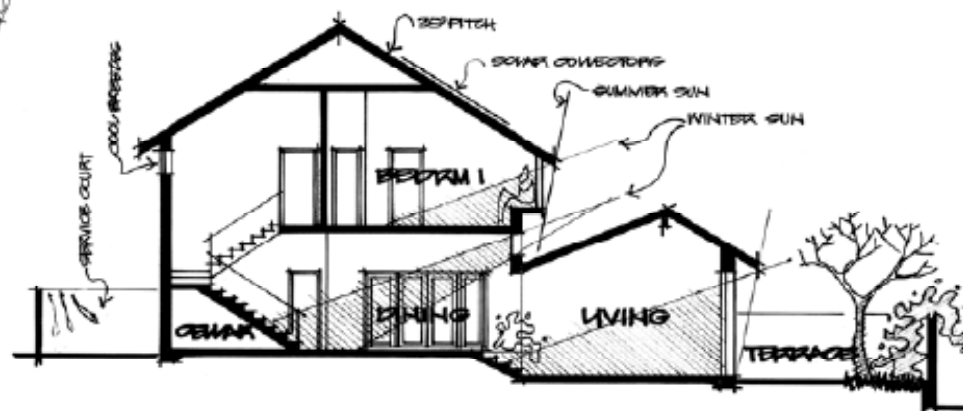
North



↑ North

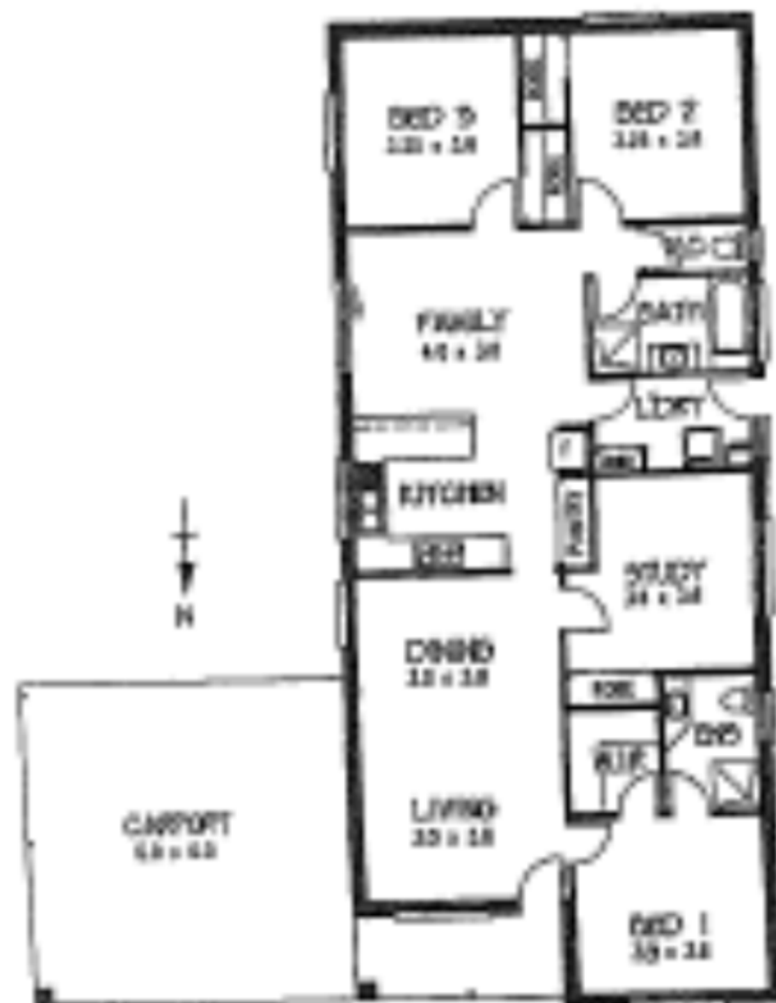


Site plan



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.



Reduction in Heat

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

Unshaded single glazed window

Internal venetian blinds

Internal holland blinds

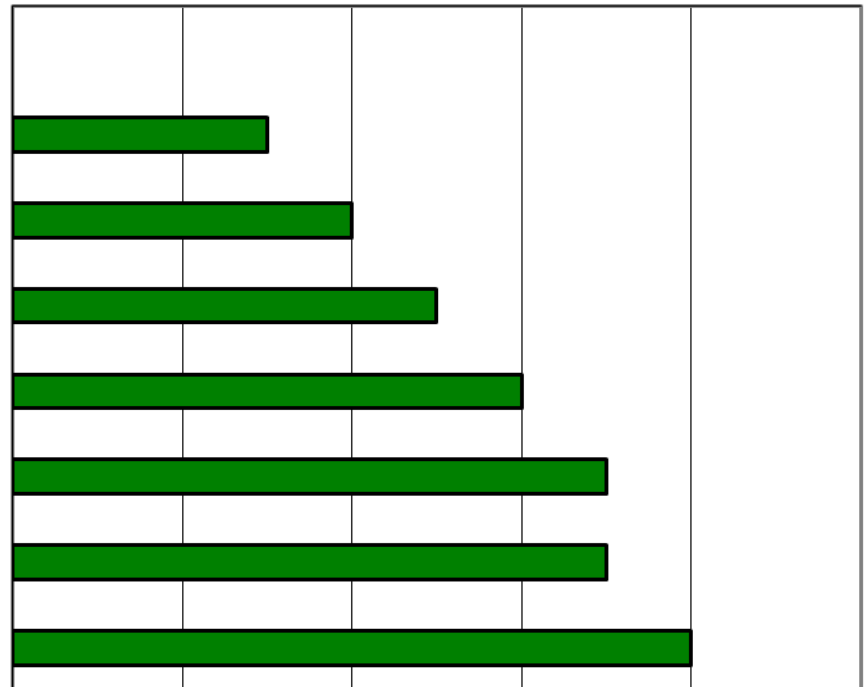
Tinted glass

Trees-full shade to light shade

External roller shutter

External awning

Pergola with vines or shade cloth



Awning blind

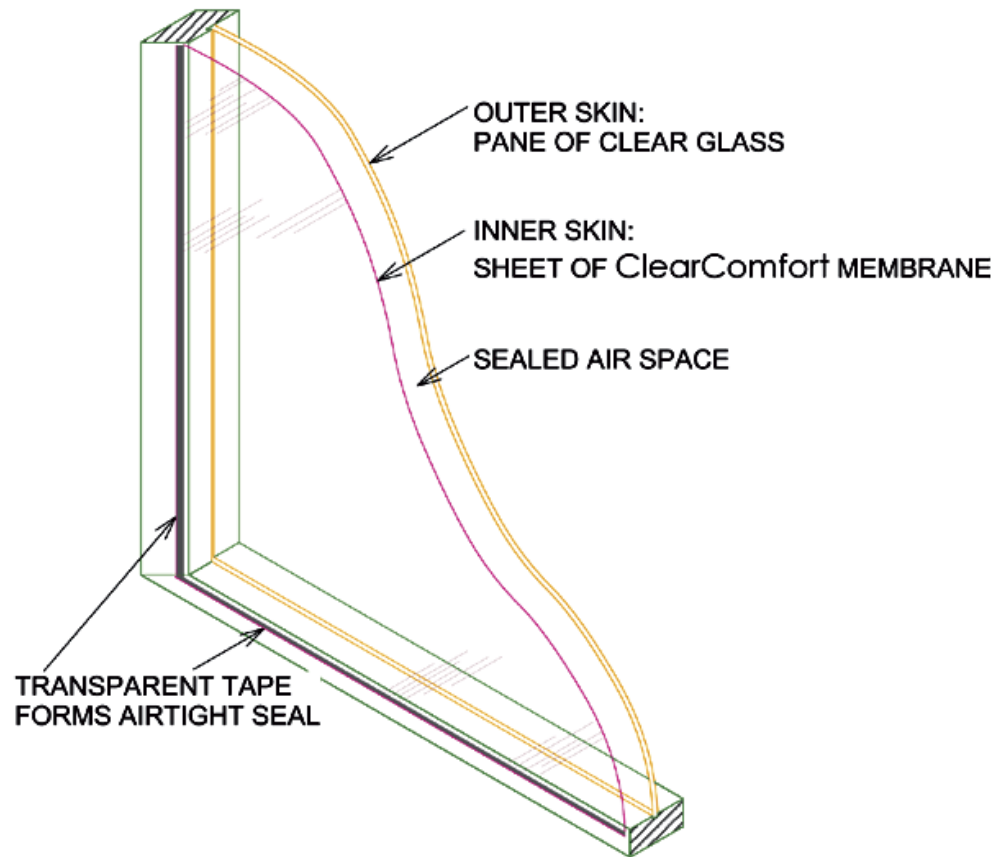


Other Options for Reducing Heating and Cooling

- 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);



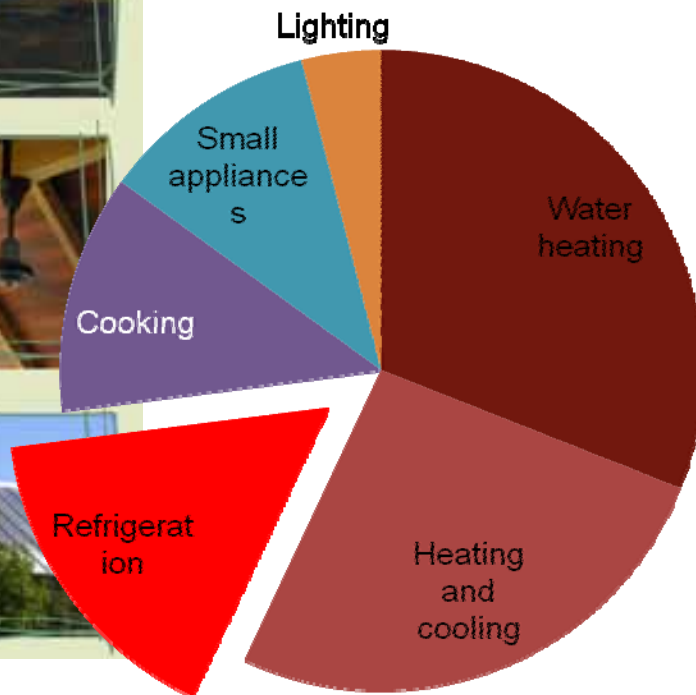
Clear Comfort Secondary Glazing



Magnetite Secondary Glazing

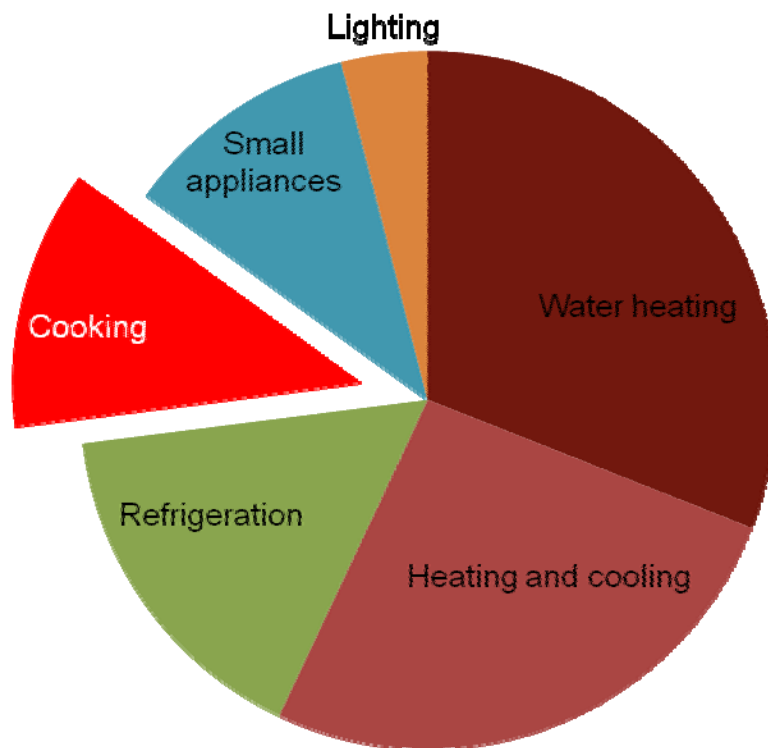


Reducing your Refrigeration Energy Use



- 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



Australia's leading guide to choosing an energy efficient appliance

a joint initiative of Commonwealth, State, and Territory government agencies

www.energyrating.gov.au

Everyone has a role to play in reducing greenhouse gas emissions that contribute to climate change. Choosing an energy efficient appliance is one way to do this while saving money.

- [Search & Compare Appliances](#)
- [Product Information](#)
- [What's New?](#)
- [Registering a Product](#)



Energy Programs Regulations Product Standards E₃ Committees Electronic Library Other Resources Search

Australian Government
Department of the Environment,
Water, Heritage and the Arts

www.energyrating.gov.au

Energy Efficient 400-500l Fridge/Freezers

Australia's leading guide
to choosing an energy
efficient appliance

www.energysrating.gov.au

Product Information

What's New?

Registering a Product



Energy Programs

Regulations

Product Standards

E₃ Committees

Electronic Library

Other Resources

Search

Refrigerators/Freezers - search result.

Cost Calculator

Your search returned 215 Refrigerators/Freezers for:

Type: All,
Capacity: 400 litres to 500 litres,
Brand Names: All,
Sorted by: New SRI -Descending order.

Electricity Cost: 15 c/kWh

Show Energy Costs for: 10 years

Recalculate Costs

[Tips on Use](#)

You can re-sort the list on any field by using for ascending order or for descending order.

[Show comprehensive detail](#) [Help on headings and content](#) [Do another Search](#)

Brand	Model	Available	Type	Total Volume (litres)	Energy Consumption(kWh/annum)	10 Yr Energy Cost	Star Rating
MIELE	K8952SD	AUS & NZ	1	413	272	\$408	
FISHER & PAYKEL	E450	AUS & NZ	1	451	330	\$495	
LIEBHERR	Kes 4260	AUS	1	407	335	\$502	
LIEBHERR	SKes 4200	AUS	1	407	335	\$502	
LIEBHERR	Kes 4260	AUS	1	407	335	\$502	
WESTINGHOUSE	WRM4300S	AUS & NZ	1	434	380	\$570	
WESTINGHOUSE	WRM4300W	AUS & NZ	1	434	380	\$570	
WESTINGHOUSE	WRM4300S	AUS & NZ	1	434	390	\$585	
WESTINGHOUSE	Refrigerator RP432	AUS & NZ	1	434	390	\$585	
ELECTROLUX	Refrigerator CS430	AUS & NZ	1	434	390	\$585	
ELECTROLUX	Refrigerator ERM4300W	AUS & NZ	1	434	390	\$585	
FISHER & PAYKEL	C450	AUS & NZ	1	451	406	\$609	

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

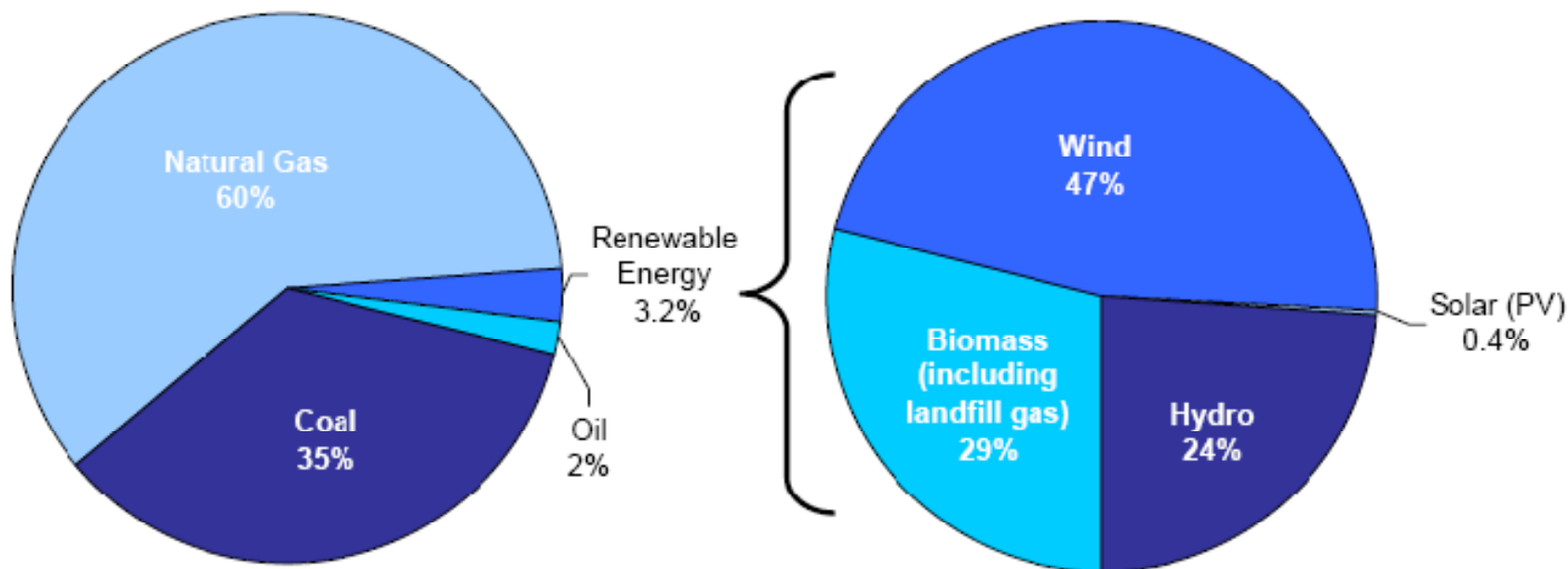
- Call Synergy on 13 13 54
- Go to their website <http://www.synergyenergy.com.au>



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

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?





MY power smart goal

My overall goal and steps to achieve this are:

goal: _____

step 1: _____ ☐

step 2: _____ ☐

step 3: _____ ☐

Why I want to achieve my goal:

I will achieve my goal by:

"Whatever you can do or dream you can,
begin it. Boldness has genius, power and
magic in it. begin it now."

goethe



When we shop....what we eat



Choosing low energy goods
What do they look like?



When we travel...



**Low greenhouse choices for
transport**

When we exercise...



**Low greenhouse choices for
exercise**

