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Victorian Energy Upgrades

Department of Environment, Land, Water & Planning

Submitted by email: energy.upgrades@delwp.vic.gov.au

5 May 2022

Victorian Energy Upgrades Home Energy Rating Assessment Issues Paper and Draft Regulations and Specifications

AGL Energy (AGL) welcomes the opportunity to make a submission in response to the proposed VEU ***Home Energy Rating Assessment Issues Paper and Draft Regulations and Specifications***.

AGL is committed to meeting the needs of its energy customers both now and through the transition to a net zero emissions future. AGL is one of Australia's largest integrated energy companies and the largest ASX listed owner, operator and developer of renewable generation. Our diverse power generation portfolio includes base, peaking and intermediate generation plants, spread across traditional thermal generation as well as renewable sources.

AGL supports the Department of Environment, Land, Water and Planning (DELWP) proposal to add a Home Energy Rating Assessment activity to the VEU scheme. AGL's experience shows that home energy audits provide a positive outcome in improving the energy efficiency outcomes. Specifically, audits result in the occupants reducing they energy usage, either by modifying their behaviour and/or buying more efficient appliances when they need replacing.

AGL has run three successful programs which have assisted customers to reduce their energy consumption:

- Home Energy Audits and Appliance Replacement program
- SA Home Energy Audit & Retrofit pilot
- Reduce Your Juice digital gamification

In addition, AGL has a DIY home energy audit tool on our public Discover AGL website. The Energy Coach takes customers through how they use their appliances and rooms in their home and makes recommendations to improve its overall efficiency. To date, Energy Coach has had nearly 3.5 million unique views.

Our website also contains 39 pages of energy efficiency tips and recommendations for both residents and small businesses on Discover AGL

The Attachment contains AGL's detailed responses. If you have any questions please contact Jenniy Gregory, jgregory@agl.com.au.

Yours sincerely

Con Hristodoulidis

Senior Manager Policy and Regulation Strategy

Consultation responses

1. **Do you think residential home energy rating assessments should become a VEU program activity?**

Yes. The reasons for our opinion are as follows.

AGL experience

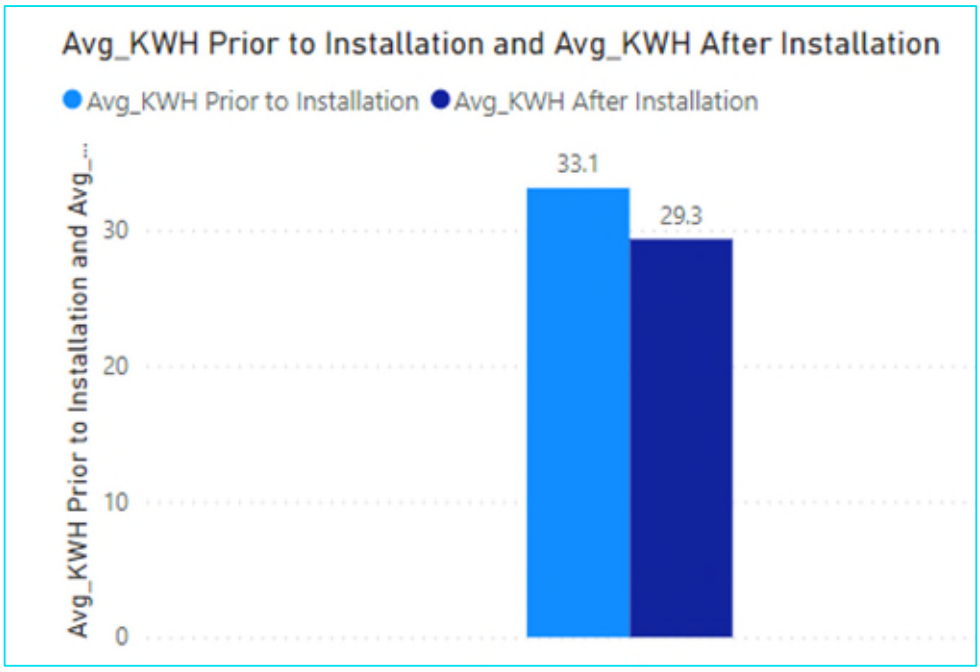
Home Energy Audit & Retrofit project

In 2021, AGL undertook a pilot energy efficiency project in SA, for both metro and regional customers on our hardship program (known as Staying Connected or SCON). The ***Home Energy Audit & Retrofit project*** (HEA&R), targeted customers (homeowners and renters) who were paying below consumption and thus increasing their energy indebtedness. The aim was to see if undertaking an in-person and in-depth home energy audit (HEA), with the auditor recommending prioritised potential upgrades (with AGL facilitating these), would make any difference to customer behaviour and energy use. It also utilised the SA Retailer Energy Efficiency Scheme where possible.

Summary

- The average total kWh per day compared to the corresponding period in the previous year has decreased by just over 4%, with some customers significantly decreasing their daily consumption (up to 10 kWh/day compared to the same time last year).
- There were a couple of cases where the household only received the HEA, but they have also decreased their daily usage.

Fig. 1: HEA&R aggregated data



More details are contained in Annex 1.

Home Energy Audit program: Victoria, South Australia and NSW

Since 2019 AGL has undertaken over 4,000 Home Energy Audits (HEAs) for customers on AGL's SCON and supplied them with a variety of white goods[1] designed to decrease their energy usage and bills.

Summary

- 83% of customers who completed a Home Energy Audit remain active in the same premises as when the HEA was completed.
- ~47% of customers who completed a HEA are currently active on our Staying Connected.
- Average usage pre-energy audit was 23.31 kWh per day, this reduced to 20.16 kWh per day following the audit, which equates to a 3.15 kWh daily reduction, approximately a $320 annual saving per customer.
- The highest participating customer cohort by age were customers between 35 to 45 years of age.

Reduce your Juice

In 2020 – 21, AGL partnered with CitySmart to deploy the Reduce Your Juice App to our customers during the COVID-19 lockdowns in 2020. We wanted to test and learn if gamification had the ability to drive desired energy efficiency behaviours and encourage customers to take the initiative to make the right energy management decisions for their household (that is, lower their energy consumption through behaviour change).

Summary

- Total Registrations: 1,423 customers
- Reduction in usage from point of sign up through until week 15
- Players experienced a reduction in energy consumption of 32.9%
- 30% of the customers who registered for Reduce Your Juice proceeded to play the game (425)
- The results indicated the program reduced overall usage by 10% for customers who participated in the program over 25 weeks of gameplay
- Customers enjoyed the gamification knowledge sharing process. Customers found it more engaging to obtain knowledge through the game rather than standard forms of communication
- The highest registered users that played the game identified as being women at 70%, from ages 25 through to 44

[1] Products included energy efficient washing machine, fridges-freezer, freezer, TV.

Additional AGL comments

Scorecard enhancements required to suit target audience

The Scorecard methodology was designed to prioritise the deepest retrofits first in order to allow the home owner to realise the most effective retrofits first, and the least effective retrofits last. This does not sit well for many households, especially where the occupants are suffering financial vulnerability and/or are renting.

We believe the Scorecard methodology should be amended to recommend near to long term upgrades.

- For instance, draught-proofing, hot water upgrades, reverse cycle air conditioning upgrades/installation rather than activities such as double glazing (too expensive for most households, especially as there are so few VEECs allocated to this activity) or solar PV (not an energy efficiency measure).
- Considers the household's energy bill profile in making these suggestions, including behaviour change actions (e.g. correct temperature settings for the climate on HVAC systems).
- Recommends activities which can be significantly co-funded under the Victorian Energy Upgrades (VEU) scheme or the Solar Victoria initiatives, with reference to these in the leave-behind documentation.

See Annex 2 for the HEA and HEA&R audit templates as examples.

Scorecard has been adopted by other states

The Scorecard methodology has been adopted nationally as a methodology for home-owners to investigate the star rating of their home and receive recommendations of how to increase their rating by undertaking deep retrofits. Whilst this is suitable for home-owners, it is not as suitable for renters or low income home-owners who are not able to afford deep retrofits (such as air conditioning retrofits or ceiling and wall insulation).

Should Victoria successfully roll-out Scorecard as an effective Home Energy Audit (where 'effective' means contributing to households lowering their energy consumption through both behaviour change and installation of more energy efficient appliances), then other states may add this methodology to their energy savings programs, thus facilitating national consistency.

Minimum Energy Performance Standards (MEPs) for rental properties

Under Victorian MEPS for rentals legislation, from March 2022, windows in rooms likely to be used as bedrooms or living areas must be fitted with curtains or blinds that can be closed, block light and provide privacy, and from March 2023, all rentals must have a fixed heater in the living room which meets energy efficiency standards[2].

[2] https://www.consumer.vic.gov.au/housing/renting/repairs-alterations-safety-and-pets/minimum-standards/minimum-standards-for-rental-properties

A robust Scorecard methodology, with a rating and priority recommended activities which are listed in order of achievability (as per our recommendations above) could be used by the renter to encourage the rental provider to undertake upgrades – especially if they are 'free' or at reduced cost under the VEU[3].

2. **Are there other home energy rating assessment tools that you would like to see incentivised by the VEU program?**

   We are not aware of any other suitable tools already active.

   NatHERS is based upon the house plans and building specifications of a home loaded into a NatHERS accredited software tool. This tool then estimates the amount of heat that needs to be added or removed to keep that home comfortable. There is no required interaction with the householder as such, and is more a building rating tool than a home energy audit and behaviour change program.

   The National Construction Code is similarly a new house or major renovation rating tool, and perhaps not as robust as many in the energy efficiency industry would like.

3. **What issues and opportunities do you foresee with providing up-front incentives for a home energy rating assessment?**

   AGL believes that the activity and installer training and accredited need to be monitored and audited, to ensure the HEAs are useful for customers by providing them with information and advice on how to improve energy efficiency in their home or business.

   AGL suggests using existing Scorecard accredited installers for a pilot, to iron out any technical issues and to identify compliance evidence required.

   We also suggest using Victorian-owned housing stock for this pilot, to make sure that the Scorecard methodology is suitable for renters and financially vulnerable households.

   Multipliers for households experiencing vulnerability

   It is our experience that households experiencing financial vulnerability do not have the financial capacity to pay for any energy reducing activities, even if they save them money off their energy bill. Therefore, we suggest a multiplier be applied to make sure that these are free for financially vulnerable households, which could be reviewed annually to counter any significant long-term increase or decrease in the value of the resulting certificates.

   For instance, it is proposed that this activity creates 3 VEECs; at today's spot price of $55[4], this would equate to $165 per household. The average cost of a Scorecard assessment we believe to be around $260 - $300 for a small to medium-sized house. If a multiplier is adopted, we also suggest that it be linked to the number of bedrooms.

[3] That is, their certificate value covers, or significantly discounts, the cost of the product and its installation
[4] 27 April 2022

Linking certificates to the number of bedrooms

The aim of this proposed methodology is to drive energy and emissions reduction through as many households as possible having a Scorecard audit undertaken and then implementing the recommendations.

AGL believes that analysis of the Scorecard data to date would show that most audits have not been undertaken in large houses. The possible main reasons for this are:

- The household income is such that energy bills are not on their radar (Sustainable Energy Authority of Victoria, market research 2004)
- They do not believe an energy audit would make any significant difference and are therefore unlikely to spend the money

Therefore we recommend that the number of VEECs allocated has a rate for residences with up to 3 bedrooms, and one of 4+ bedrooms, as this would be in line with the current scale of Scorecard audit costs.

4. **What issues and opportunities do you foresee with providing incentives for a new activity incentivising upgrades demonstrated through re-assessment?**

AGL believes that one VEU-sponsored Scorecard assessment per home is sufficient, though much lower than before the audit. If the householder wishes to get a new assessment as they believe that their rating has improved, then this should be at a cost to the household.

5. **Do you support the proposed approach to calculating the energy savings resulting from the provision of a home energy rating assessment?**

AGL's energy efficiency programs have shown that the reduction in energy usage per customer after an energy audit varies between customers, and, depending on the measures suggested and then undertaken (be they behavioural or physical alteration to the building or its appliances).

We have found that the greatest decrease is when high energy consuming devices, particularly heating and cooling devices, are changed out for more efficient models.

6. **Do you support the assumed savings lifetime proposed for the activity? Yes/No?**

a. AGL supports 5 year deeming at each site unless the resident changes

The reason for this is many structural changes can happen in a family home within 5 years, especially related to children and energy usage. For instance, there are significant energy usage changes related to families in a 5-year period, for example:

- going from no children to a baby/toddler,
- toddler to increasingly tech-engaged children
- Children to teenagers

- Teenagers to young adults

During this time appliances will change as the family composition changes, as may the usage of rooms within the home.

b. Eligible for new Scorecard rating if substantial renovation occurs within the 5-year period

AGL does not support this proposal, as the updated rating and energy usage comments can be captured after the 5-year period. If the house is to be sold with the energy rating, then it should be up to the owner, not the scheme to fund the upgraded rating.

c. Eligible for a new Scorecard assessment after the 5-year period.

Yes, as per answer above.

7. **Are there other considerations that should be included within the activity calculations?**

No comments at this stage

8. **Do you agree with limiting residential premises to a single incentive? Yes/No?**

a) If no, how would you like to see multiple incentives per premises included in the program?

AGL supports one energy audit per home.

We also support the Assessor undertaking more than just the Assessment in the one visit. For example, if the Assessor can book in an electric hot water upgrade for the customer or change the showerhead/s to low flow and light bulbs to LED (provided that they are an accredited electrician), then this could provide economies of scale for more homes becoming efficient in their use of energy.

9. **Are there any issues or opportunities to improve the implementation and administration of the proposed activity?**

As per comments in Question 1, AGL believes that the Scorecard methodology needs to be is amended to recommend near term upgrades first followed by long term upgrades, to motivate the resident/s to adopt behaviour change. This approach also mitigates against the split incentive issues associated with asking landlords to undertake, large and potentially expensive upgrades.

- For instance, completing draught-proofing, hot water upgrades, reverse cycle air conditioning upgrades/installation first, rather than activities such as double glazing (too expensive for most households, especially as there are so few VEECs allocated to this activity) or solar PV.
- Consider the household's energy bill profile in making these suggestions, including behaviour change actions (e.g. correct temperature settings for the climate on HVAC systems).

- Recommends activities which can be significantly co-funded under the Victorian Energy Upgrades (VEU) scheme or the Solar Victoria initiatives, with reference to these in the leave-behind documentation.

10. **If you are a Residential Efficiency Scorecard assessor, would you be interested in becoming a VEU accredited provider?**

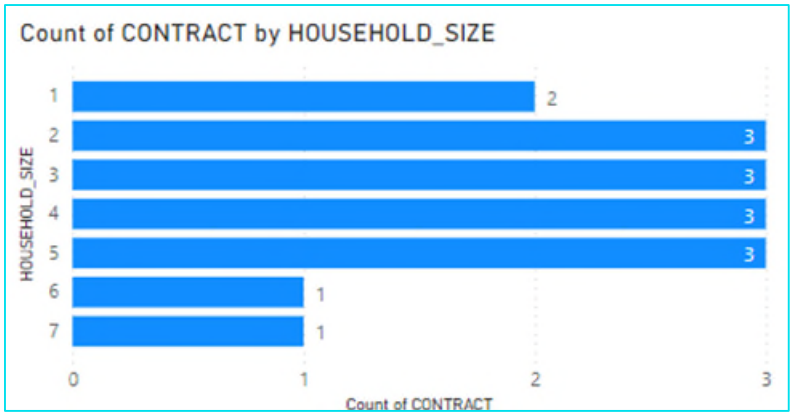
    N/A

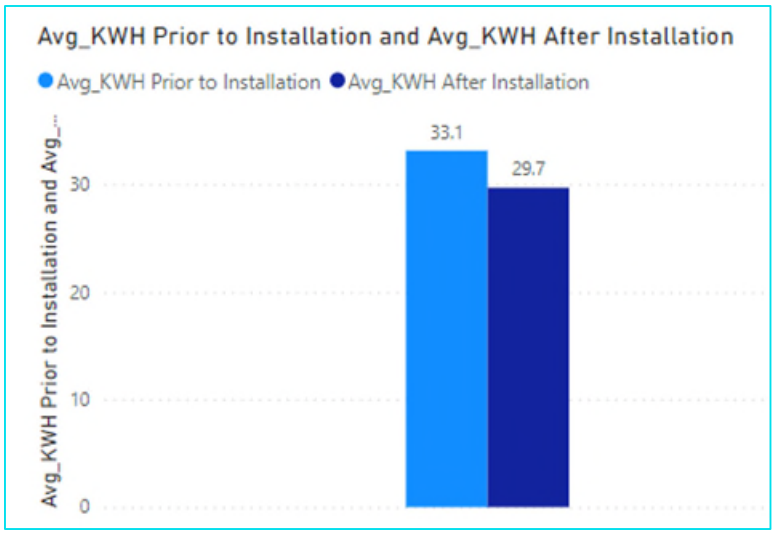
11. **If you are a VEU accredited provider, would you be interested in becoming a Residential Efficiency Scorecard assessor**

    N/A.

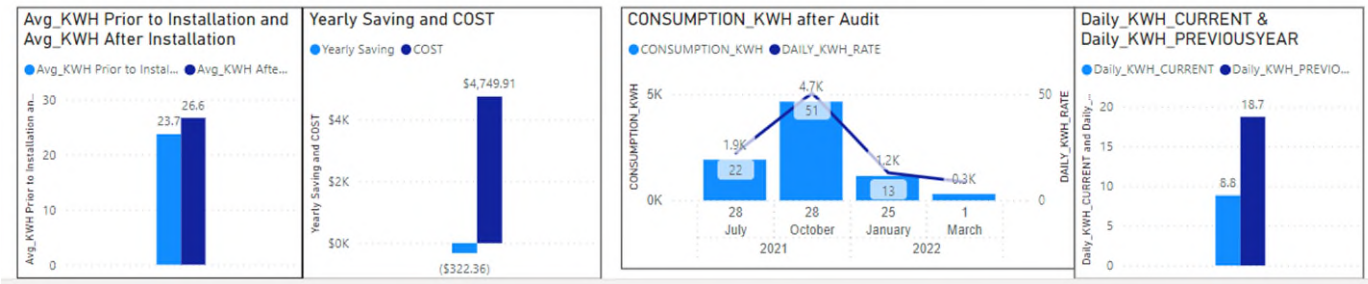
Annex 1: Energy efficiency project results to date

Results from stages 1 & 2, SA Home Energy Audit & Retrofit pilot project



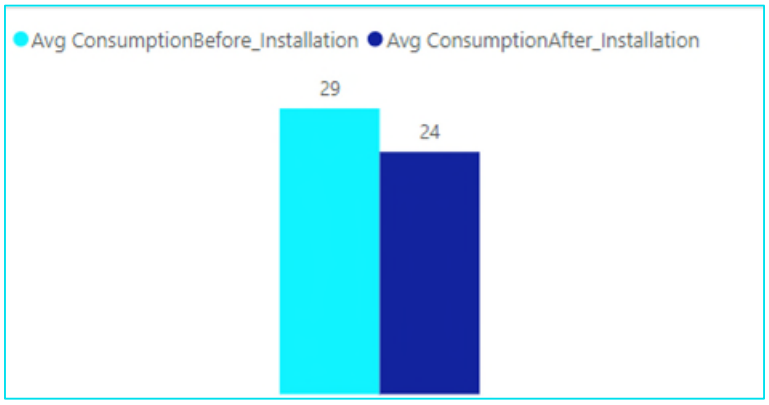


Customer example

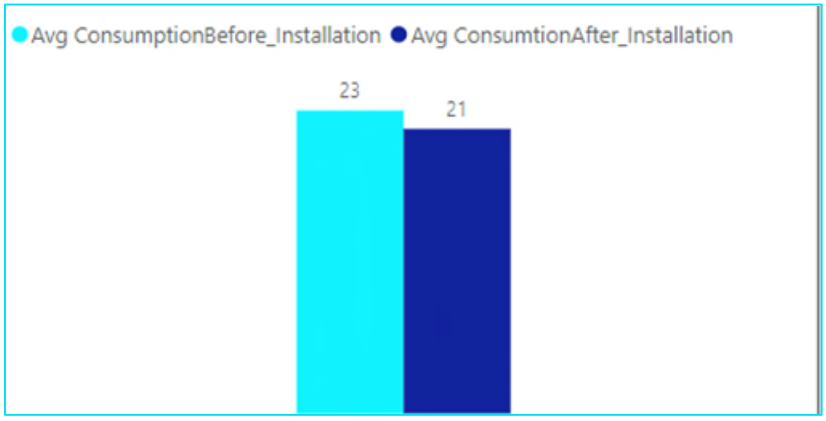


Results from Home Energy Audit & Appliance Replacement project

Home energy audit only, no appliance replacements



Home energy audit Plus equipment replacement



Audits were undertaken in August 2021

Annex 2: Audit templates from the SA HEA&R and the national HEA projects

AGL Deeper Retrofit HEA

Report

Customer	[redacted] **(Single Parent Pension card held)**
Job ID	**9400526030**
Site Address	[redacted] **Stirling North, SA 5710**
Date Completed	**1/12/20**
Auditor	[redacted]

Intro

Energy usage total

Single fuel

Electricity Current Qtr 2858 Kwh, Previous 3429 Kwh 4644 Kwh (winter bill) 2983 Kwh

Gas N/A

Property information

Single story hardie plank construction with pitched tiled roof. Approx 130 sqm. Switchboard is single phase. Average condition. Some minor tree shade areas to the west side.

Qualifies for REES-R upgrades but no product qualifies

4 live in the property of mixed ages

Key Observations

[redacted] **stated that she believed that old appliances were driving the current consumption. She is aware that she is unable to reduce the total amount owed to AGL. She was not able to state when off-peak power can be used**

Energy Habits/Behaviour

Laundry

[redacted] **does 10 washing loads per week, in cold water, as well uses the lines for drying. Washing times are mixed.**

TV/Entertainment

TV usage is around 8+ hrs per day, depending on family or child use. In concert there are a number of gaming systems that are used routinely and for extended periods. A total of 2 TV units

Heating/Cooling

Cooling is with Evap ducted system. In summer it is used considerably and is left on during the evenings and when not at home. Naturally no temp settings with this device.

Heating is with an electric split system, and is used routinely in winter for several hours per day. Temperature is set to 22C all the time. It is only used however during daytime/early evening but is left on if someone leaves the room.

Energy Consuming Appliances

Lighting

The home has the following:

LED's various types x 4
CFL's x 8
Floodlights x 2
Linear tubes x 5

Hot Water System

Dux 250L electric storage tank model 250H1366, 10+ years old in poor condition

Primary Heating system

Fireplace with wood consumption. A/C unit in external bedroom, only serves that one room. (Not seen but would expect that an electric heater may be used given the increase in consumption in winter)

Primary Cooling system

Pedestal Fans – One wall mounted A/C system in back external bedroom in poor condition. It is used in both summer and winter

Laundry

Washing Machine – Haier 9.5 kg front loader 5 yrs old in average condition

Dryer – No

Other

Fish Tanks – No

Gym Equipment - No

Garage Equipment - No

Thermal efficiency

Ceiling insulation in poor condition with poor loft

Floor/Wall insulation – None

Window Coverings – Light curtains/blinds throughout the house.

Window/Door condition – Acceptable

Floor coverings – Vinyl to the house including wet areas with carpets in bedrooms.

Recommendations & Observations for client

The home would benefit by the installation of solar, with a possible battery option being considered.

Heating and cooling is not an issue, however the home does have an Evap ducted system which is currently unserviceable. At present fans and a

wood fireplace are the only cooling and heating available. Naturally this does not add to the consumption issue.

The one A/C unit in the property working however will need replacing with a significantly more efficient inverter split system. The room this has a flat roof and no access points, but I doubt there is any insulation in the area.

My main observation, as that there is no one item or area that would be the reason for high consumption, rather it is the accumulative effect of multiple issues.

AGL Suggestions

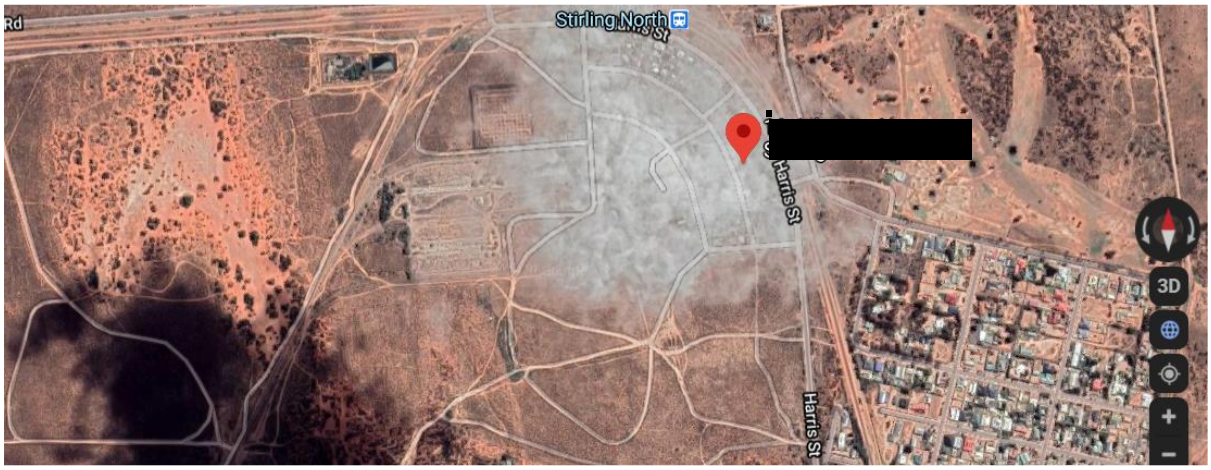
The priority is an upgrade to key appliances, fridge, freezer and possibly oven as required. The fridge in particular is in dire and urgent need of replacement.

The HWS also is in major need of an upgrade and a heat pump would be the best option

Solar PV and battery should also be considered and may be the best option to reduce the outstanding amount.

Insulation could be topped up in areas where it has no loft, although due to the old ductwork in the ceiling I was only able to observe a small section of the roof. It is obvious that the current level of performance of the insulation is inadequate

[redacted] **has a major issue in being able to repay the current debt level, and without intervention at a high level, the situation will not improve.**

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HOME ENERGY ASSESSMENT REPORT

Dear [redacted]

This is your personalised report from your Home Energy Assessment.

Your assessment was conducted by Your Energy Saving Solutions Pty Ltd – 03 8394 0826

Your Assessor was: [redacted]

Date: **30/07/2021**

Appointment Number: **78658**

This report is a summary of our discussion during your appointment, and it contains recommendations on what we would suggest you do to lower your energy costs.

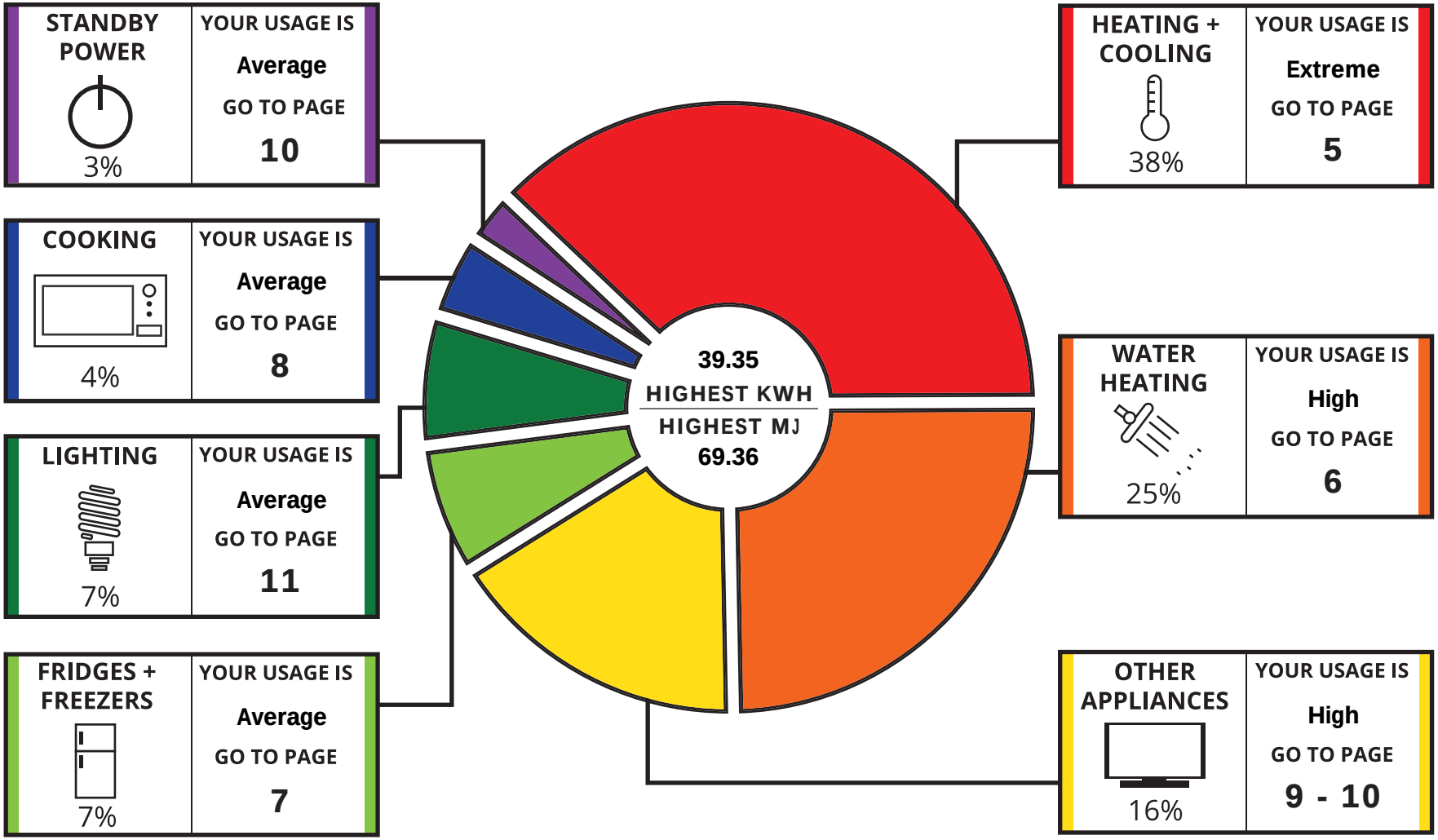
We hope that you found the assessment informative and worthwhile, and we hope you have a better understanding of your own energy usage and where savings can be found.

For all enquiries related to this report please email: aglhea@yess.net.au or call: 03 8394 0826

Do you provide consent to be contacted regarding further energy efficiency products and services?:

DID YOU KNOW...

This chart shows where energy will go in a typical Australian home. Our recommendations are to help bring your usage closer to these figures.



KEY RECOMMENDATIONS

This report has been done for [redacted] at [redacted]

- **I would encourage you to be mindful of your heating and cooling usage, as your regular use of your portable heater is resulting in high energy usage. Where possible, try to limit running your heating and cooling systems to only zoned areas, turning them off once the room has reached a comfortable temperature. Try to avoid running units overnight, and reduce your use of your oil heater - these units have a comparable energy consumption as a ducted unit, but with only 1/3 of the heat output! Consider implementing low energy heating and cooling devices, such as electric throw rugs and blankets, wheat heat bags, or hot water bottles, as it is far more efficient to heat just yourself rather than the whole room.**

  You may benefit in identifying issues and implementing passive solutions to help keep your house a comfortable temperature. I encourage you to investigate whether you have insulation as that will help understand how to keep your house warm or cool. I have included a resource to help you find solutions most suited to your needs.

- **As your washing machine is due for maintenance and/or repair, I would encourage you to fix or replace it as soon as possible rather than running laundry in a poor condition machine. Make sure to limit your laundry to only full loads, as full and half loads consume a comparable amount of energy. Wash with cold where possible as 75% of the energy consumed for a hot wash goes to heating the water!**

  Fridges run most efficiently when there is as little open space as possible, as it is more difficult for a unit to keep air cool than it is food and liquid. If you do have open space, fill up bottles of water to create additional thermal mass within the fridge to reduce this strain. When it is time for you to upgrade in the future, avoid getting a unit much larger than one that could comfortably hold your usual food supply.

  In general, I encourage you to investigate any other appliances that may be impacting your consumption. I believe your portable heater is the largest culprit, but other devices will also impact your usage.

- **Where Summer gas consumption is above average, generally the first thing to look at changing is hot water usage. Usually showers are the leading culprit for high gas usage, so ensure your showers are under 10 minutes. You should also consider swapping to a water saving shower head - these are given water star ratings similar to what you might see on a washing machine. Look for 3 stars or better if choosing something new. It may be good to have your hot water unit inspected, to ensure all parts are working as expected, due to its age. Though your hot water usage is not necessarily extreme, it is higher than it should be in a 1 person household with 5 minute showers. I believe the majority of your Winter gas usage comes from your hot water service, rather than your gas heater.**

BILLING ANALYSIS

	Single Rate (General Usage)	$	Time of Use*	$	Controlled Load	$	Solar Exports	$	Comments
Winter Electricity High (Daily kWh)	3541.34	$0.25	Peak Shou Off P						Average daily use 39.35 kWh. Winter electricity usage extreme - 3.78 times above average.
Summer Electricity Low (Daily kWh)	330.60 kWh	$0.25	Peak Shou Off Pea						Average daily use 3.67 kWh. Summer electricity usage low.
Winter Gas Low (Daily MJ)	4300.04 MJ	$0.02							Average daily use 69.36 MJ. Winter gas usage low.
Summer Gas High (Daily MJ)	3074.06 MJ	$0.02							Average daily use 51.23 MJ. Summer gas usage high.

* Time of use tariff means that your rates change depending on the time of day.

Daylight electricity consumption on weekdays is **High**

This chart shows the benchmark (expected usage) for a similar household to yours.
Your own usage may vary, but this tool is generally a good target to aim for if your usage is high.

>>>>>>>>>>>>>>>>>>>>>>>>

For more information visit:
www.energymadeeasy.gov.au/benchmark

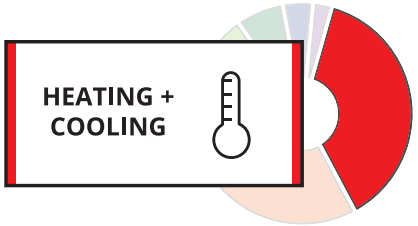
Household Type: **Owner Occupied**

Qty and Age of Occupants

0 - 5	-	5 - 17	-	18 - 60	1	60 +	-

Indicative Average Daily Consumption (KWh)		
	Summer Dec - Feb	Winter Jun - Aug
1 Person Home	7.6	10
2 Person Home	11.4	14.7
3 Person Home	13.3	16.6
4 Person Home	15.7	19
5+ Person Home	16.4	19.7

HEATING AND COOLING:



Heating Type:	No Heating	AC Heat Pump	Split	Ducted	Wall Box	(Portable)	Electric Resistance	Wood	(Gas)
Cooling Type:	(No Cooling)	AC Heat Pump	Split	Ducted	Wall Box	Portable	Evaporative		

Able to Zone rooms that are used?
Yes - Can zone

Age of system:
Gas heater 15+ years.

Winter temp setting:
N/A

Summer temp setting:
N/A

Unit serviced and in good repair?
No - Needs Repair

Heating/Cooling Equipment is checked and cleaned regularly – filters, dampers and ducting where present?
No - Needs to be Cleaned & Checked

Comments:
Oil heater in room (1-2 hours), Gas (not used often). No low energy. Just fans in Summer. House colder than hot. Gas heater needs maintenance.

Did you know: Portable electric heaters are generally very expensive and power-hungry appliances to run.
If you have any small electric heaters, look at getting an electric blanket or heated throw rug instead – these **consume 95% less energy.***

*When comparing a 100W blanket to a 2000W electric heater

Optimum temperatures for air conditioning

Location	Summer (cooling) AC temp	Winter (heating) AC temp
Nth QLD, NthWA, NT and Central Aus	21° - 23°	17°
SE QLD and NE NSW	25°	18°
SA	24° - 25°	19° - 20°
SW WA	23° - 24°	18°
SE NSW, NE VIC and ACT	26° - 27°	20°
(Sth VIC)	24°	20°

Use your curtains or blinds to help you **insulate the space you are heating or cooling.**
Open up on winter days to let the sun in, then close at night before turning any heating on.
Reverse this in summer! Close curtains to block sun then open curtains (and windows for breeze) to cool off at night.

Use **zoning** – this means only heating and cooling rooms that need it.
If you have a ducted system, use the **zoning controls** to switch off rooms that nobody is in.
If you have a single source like a split system or portable item, simply **close the door** to reduce the amount of space being heated or cooled.

HOT WATER SERVICE:

HWS Type:	Solar	Heat Pump Storage	Gas Storage	Gas Instantaneous	Electric **Resist** Storage	**Other/Communal**

Age of system: **15+ years.**

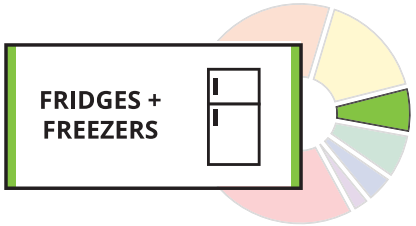
If storage, thermostat set to 60C? **Set to 60C**

Comments: **Set to low temperature. 5 minute showers.**

Did you know: The biggest usage of hot water in any home is through the shower! You can find out how your shower's efficiency compares by measuring the flow rate in litres per min (L/min). You can do this by turning on the water to a good showering temperature, then collecting the water in a bucket or jug for 10 seconds. If your shower uses more than 1.5 litres in 10 seconds, consider changing to a water efficient option.
Note: flow restricted showers are not suitable for certain types of hot water systems, such as gravity-fed and older gas instantaneous models.

You indicated that your showerhead is:

Not Water Saving



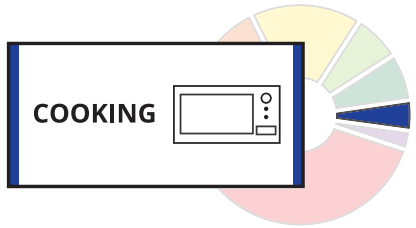
KITCHEN:

	Size (Volume in Litres)	Defrost Power (W)	Age	Condition	Purpose
Fridge # 1	**Top Mount - Small**	**423 kWh/year**	**6-10 Years**	**Good Condition**	**Primary Fridge**
Fridge # 2					
Fridge # 3					
Fridge # 4					

Comments: **Second hand. Open space in the fridge.**

Fridge Tips:
A typical fridge is likely to use between 1-2kWh per day. Given that, in Australia, electricity prices are between 20 to 40 cents per kWh, this equates to $100-300 per year per fridge.
Things that can increase the running cost of your fridge are:

- **Size: Consider a downsize if your fridge is usually less than 2/3 full. Or, fill empty space with bottles of water to increase efficiency!**
- **Location: Don't keep your fridge or freezer outdoors, or in a warm area of the house or in a shed.**
- **Ventilation: At rear and above your fridge.**
- **Age: The older the fridge the less efficient it is. If yours is 10 years old (or more) consider replacing it with something new with more advanced compressor and refrigerant technology.**
- **Condition: Check for broken, degraded or cracked seals around the edges of the doors, A quick test is if your fridge door can hold a $5 bill when shut – your seals are fine.**
- **Quantity: Think seriously about whether you need more than one fridge. If you have 2 separate, older fridges or freezers, think about buying a single bigger one to replace both.**



KITCHEN CONT.

Is the primary cooker:

Electric Stove	(Gas Stove)	Induction Stove	Electric Oven	(Gas Oven)

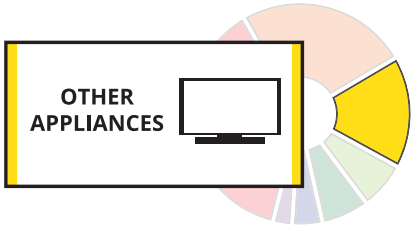
Is it in good condition and regularly serviced? Good condition. 7 years old.

Does the customer have any of the following low energy alternatives to the primary cooker?

Slow Cooker	Air Fryer	Induction Cook Plate	(Microwave)	Other

Comments: Cooks 2-3 days/week

Did you know: Plug in cooking appliances such as slow cookers and air fryers are very energy efficient, due to being compact and well insulated against losing heat to the room around. If you have a slow cooker but don't use it, pull it out more often! It's cheaper to use than your stove.



LAUNDRY:

	Type	Size	Age	Use	Condition	Comments
Washer	Front Loader	4kg-6.5kg	4-7 Years	Mainly Cold Wash	Poor	Broken. 1 load/week.
Dryer	N/A - No			Line Dry		N/A

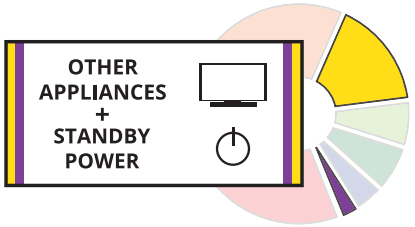
Dryer Tips: Where possible, hang your clothes to dry naturally – it's free! Alternatively, try to air dry partially before finishing off in the clothes dryer.
If you're a heavy dryer user, or you can't hang clothes to dry, then consider getting your hands on a heat pump dryer model. These are about 3x more efficient than traditional dryers!

Energy Consumed in Clothes Dryers - Per Load			
Vented Clothes Dryer	Heat Pump Clothes Dryer	Heated Clothes Rack	Outdoor Clothes Line
2.5 - 9kWh	1 - 3kWh	1 - 2kWh	0kWh

Cold Water Washing Tips:

- **Choose a good quality detergent (not the most expensive) that is suited to a cold wash**
- **Look for powdered detergents which generally perform better and are better value than liquid (often made up of water)**
- **Familiarise your self with your machine settings and capacity so appropriate water levels are set for better cleaning results e.g Delicate or Quick Cycles are half a normal load.**
- **Choose warmer washes when you are washing after illness or to deal with dust mites, for heavily soiled items and if there are any oil grease stains.**
- **Run hot water cycles only occasionally (especially if you are a cold water devotee) to help clear out detergent residue and clean the machine.**
- **Drying clothes on the line in the sun can have the same sanitising action as a hot wash – and its free!**

Choosing a cold wash cycle is better for the environment (less microfibers are released in a cold wash), better for your clothes (they will last longer) and better for your pocket (upto 75% less energy is used in a cold wash).



HOME ENTERTAINMENT:

	Hours of Use	Location	Type	Approx Size	Wattage (opt)	Additional Appliances
TV # 1	Not used often	Lounge Room	LCD	44-54"		N/A
TV # 2						
TV # 3						
TV # 4						
TV # 5						
TV # 6						

Comments: Not used very often. Turned off at switch.

TV Tips: With the exception of smart TVs, try to turn your telly off at the wall when it's not being used, particularly if it is older than around 5 years. This goes for TV accessories as well, such as games consoles, sound systems, or DVD players. They can still use power when left in standby mode, even if they are not switched on fully!
You can check the label on the back of your own TV to find out the type and the power usage. If your TV is above 200W (watts), or if it's older than 8 years, think about upgrading to something new.
A brand new 40 inch LED TV would use ½ the power or even less than a 200W TV!

Other Appliances:

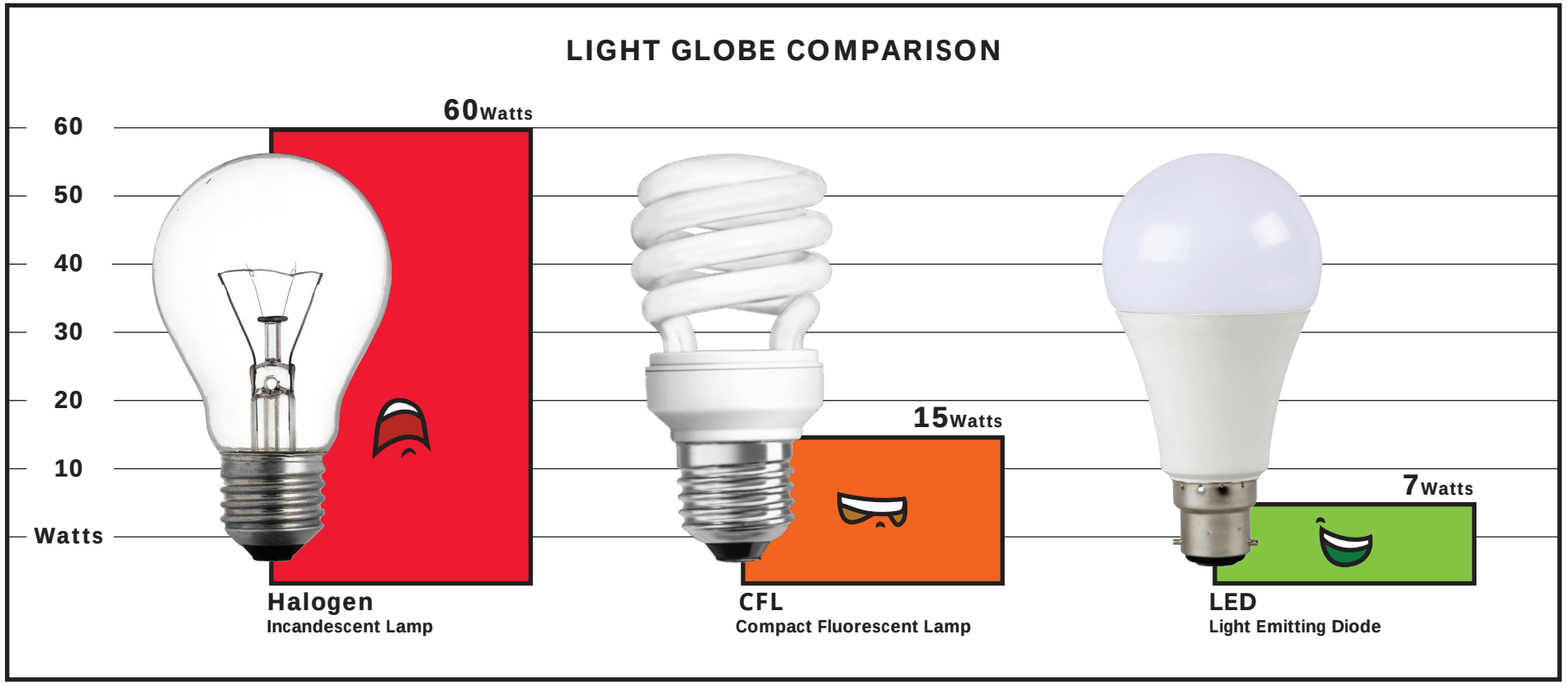
N/A

LIGHTING:

Type of Lighting in use: LEDs

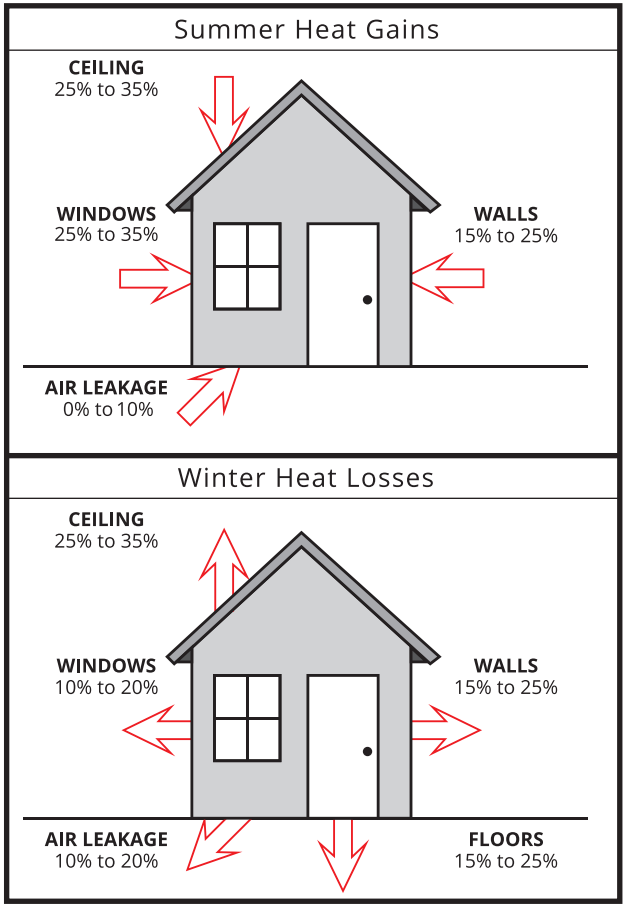
Comments: N/A

Did you know? A LED lamp retrofit (replacing a halogen globe running 7 hrs/day) will pay itself back in less than 3 months. Check for state run programs that subsidise LED retrofits in residential properties.



PASSIVE MEASURES FOR SUMMER AND WINTER COMFORT

SHADING AND VENTILATION:



Do windows have functional shading where relevant? No

Comments: No shade.

Are there ceiling fans in the home? No

Comments: Normal fans - used in Summer

Cooling Tip: Turn on a fan and open windows before reaching for the air con, as they are much cheaper to run than any AC.

INSULATION

Is there insulation in the home that is R2.5 and 100mm or more in thickness? Yes

Comments: In roof. Doesn't retain heat well.

Are doors and windows sealed well? Yes

Do windows in living area have coverings (curtains) or double glazing for heat retention in Winter? Yes

Comments: Heavy curtains

Heating and Cooling Tips: Use your curtains or blinds to help you heat and cool!
Open up on winter days to let the sun in, then close curtains at night before turning any heating on.
Reverse this in summer: close curtains to block sun, then open curtains (and windows for breeze) to cool off at night.

Most summer heat comes into a home from direct sun on windows. It's a very good idea to block the sun from windows from the outside if you can, using eaves, awnings, roller shutters, or plants/trees.
If you can't block sun from outside, the next best thing is using blockout curtains with white backing, or roller blinds, to reflect the sun's rays.
During the hottest parts of the day, keep your windows and doors closed!

Be sure that you're not losing winter heating through gaps and cracks.
Up to 25% of winter heat loss is caused by "air leakage" AKA draughts. Check for rattly windows, gaps in doors, vents in walls near the ceiling, and other things like an open chimney, and block them off to make the most of your heating.