

Transition to an energy efficient home

Sustainable Stirling

15. June 2024



Sustainable Stirling (core team)

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Our next informal meet-up

- When: 25. June 2024, 1:30pm
- Where: Scarborough Community Hub (undercover tables)
- What: Discuss questions about how to save money and reduce your carbon footprint

Contact us for more information at
<https://www.sustainablestirling.org/contact-us/>

Your options – produce (shift) energy / reduce consumption

- *Production / Shift energy consumption*

- Solar panels
- Heat pump
- Battery (EV/home battery)

- *Reduce consumption*

- Better insulation (reduce draught)
- Repaint your place
- Higher efficiency appliances
 - heat pump (500-600%) / gas (~90%)
 - EV (80%) / petrol engine (30%)
 - Induction stove (3x more efficient than gas)
 - ...



Transition to a more efficient & more sustainable energy system

Assess your current energy usage



Set your goals



Research your options



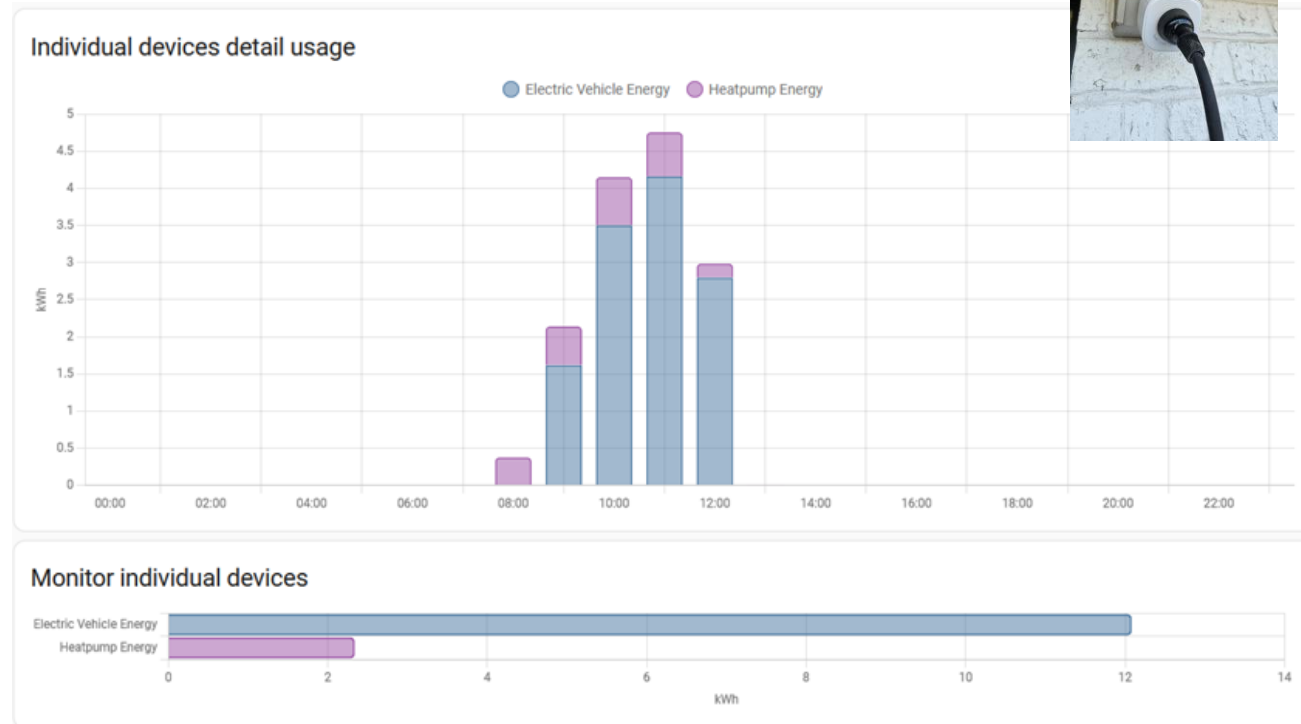
Conduct a cost/benefit analysis



Determine the feasibility of installing a new system at your place

1. Assess your current energy usage

Analyse your current energy consumption patterns. Understand which appliances and systems are consuming the most energy. Review past energy bills to gauge your historical usage and seasonal variations.



Who monitors the power consumption of devices at home?

Home Improvement › Electrical › Tools & Testers › Multi Testers



Roll over image to zoom in



240V Plug Power Meter Electricity Usage Monitor,PIOGHAX Energy Watt Voltage Amps Meter with Backlit Digital LCD, Overload Protection and 7 Display Modes for Energy Saving

Brand: PIOGHAX

4.3 ★★★★★ 154 ratings | [Search this page](#)

Amazon's Choice

200+ bought in past month

\$22⁹⁹

prime



Secure transaction



Free Delivery



Returns Policy



Amazon-managed Delivery

Brand	PIOGHAX
Power source	240v
Style	Digital
Colour	blue
Min. Operating voltage	240 Volts

1. Assess your current energy usage – use estimates

Average annual air conditioner running costs medium room (reverse cycle, non-ducted, single split system)

← Mobile/tablet users, scroll sideways to view full table →

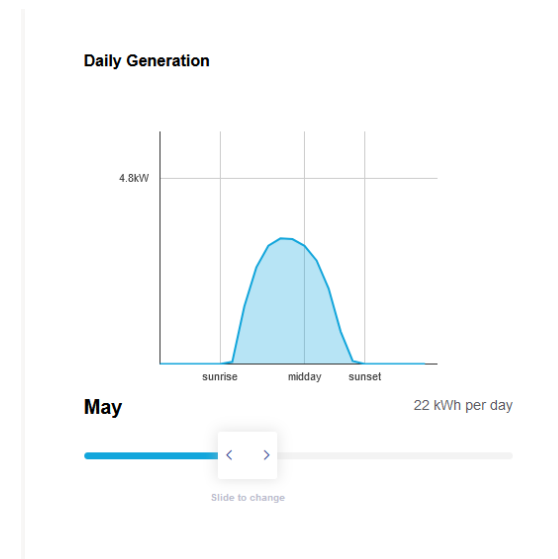
Climate Zone	City	Average Usage Rate	Cooling Costs	Heating Costs
Hot	Brisbane	31.2c/kWh	\$258	\$20
Hot	Darwin	28.1c/kWh	\$232	\$18
Average	Sydney	35.3c/kWh	\$101	\$153
Average	Adelaide	44.9c/kWh	\$128	\$194
Average	Perth	30.8c/kWh	\$88	\$133
Cold	Melbourne	26.3c/kWh	\$48	\$306
Cold	Hobart	29.5c/kWh	\$54	\$343
Cold	Canberra	26.4c/kWh	\$48	\$307

Source: www.canstar.com.au – 01/11/2023. Average energy consumption figures based on air conditioners listed in the Commonwealth of Australia E3 Program's Registration database. Average electricity usage rates based on single rate, non-solar only plans on Canstar's database, available for an annual usage of 4,347 kWh. With the exception of Perth which is based on the usage rate of the Synergy Home Plan (A1) tariff and Darwin which is based on the government's regulated rate. Climate zones based on the Zoned Energy Rating Label for air conditioner models imported or supplied after 1 April 2020.

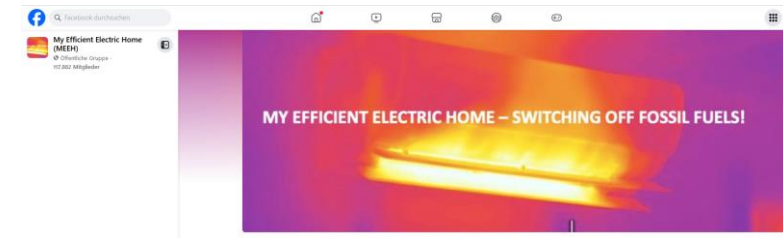
2. Set goals

- Define your objectives for transitioning to renewables. These could include reducing your carbon footprint, saving on energy costs, or achieving energy independence.
- Establish measurable targets to track progress over time.

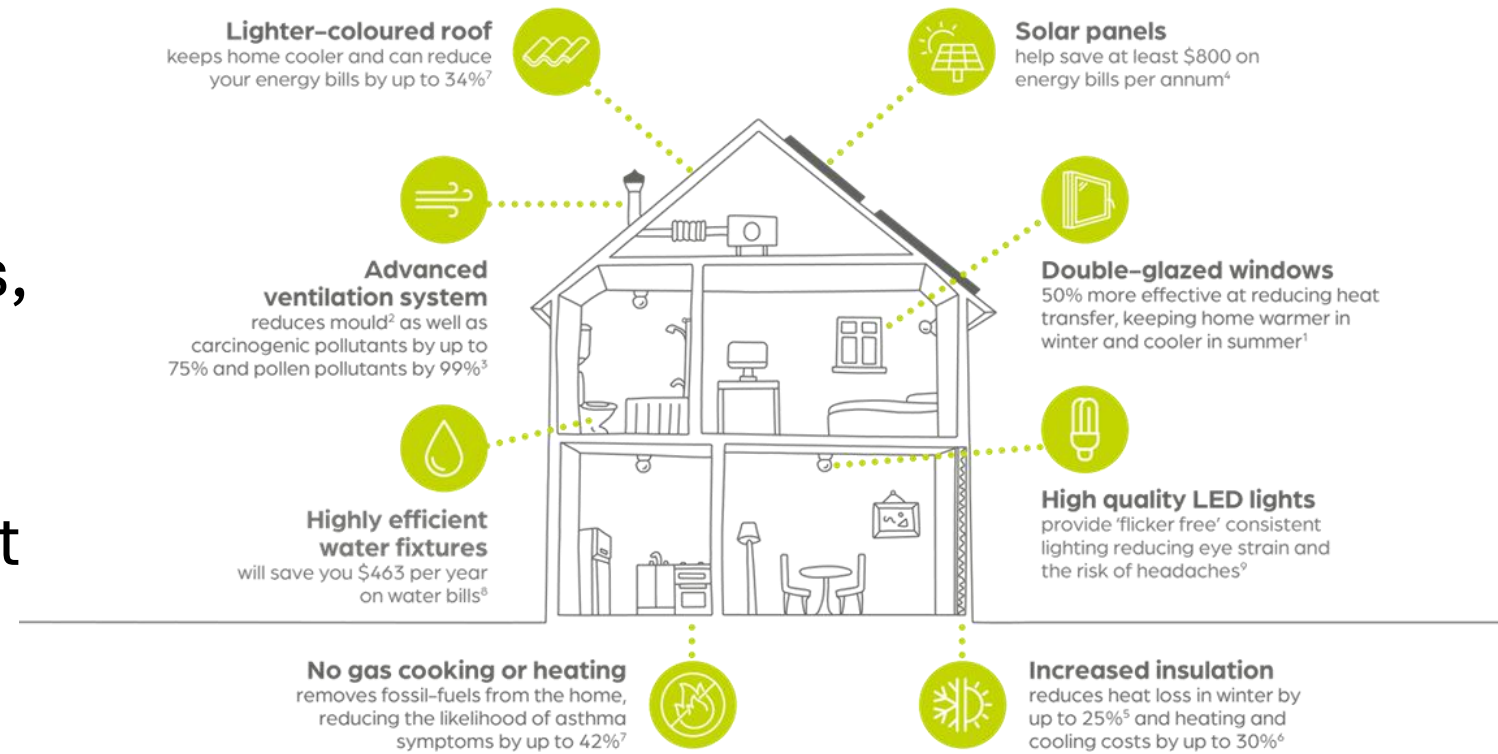
Most important							
Element	Reduce energy cost	Increase comfort	Increase resilience	Reduce GHG emissions (petrol/gas)	Control / access with onsite EMS or VPP	Cost	Impact
Rooftop solar	xxx	x	xx	xxx	xxx	Moderate	High



3. Research your options



- Consider factors like availability, cost-effectiveness, suitability for your location, and environmental impact
- Evaluate potential government incentives, rebates, and tax credits for renewable energy installations.



<https://www.certifiedenergy.com.au/green-star-homes/everything-you-need-0>

4. Conduct a cost-benefit analysis

- Compare the upfront costs of renewable energy systems with the long-term savings.
- Factor in potential maintenance expenses, lifespan of equipment, and projected energy savings.
- Assess financing options such as loans, leases, or power purchase agreements (PPAs) if upfront costs are prohibitive.

Hot water system running costs and emissions		
Type of system	Annual energy cost	10-year greenhouse gas emissions
Heat pump (peak tariff)	\$245–300	3.6 – 4.4 tonnes
Heat pump (off-peak)	\$190–230	3.6 – 4.3 tonnes
Solar (gas boosted)	\$125–165	1.9 – 2.6 tonnes
Solar (electric boosted, peak tariff)	\$265–365	3.9 – 5.4 tonnes
Solar (electric boosted, off-peak)	\$235–315	4.4 – 5.9 tonnes
Electric storage (peak tariff)	\$730–915	10.8 – 13.5 tonnes
Electric storage (off-peak)	\$625–760	11.8 – 14.4 tonnes
Electric instant (peak tariff)	\$650–850	9.6 – 12.7 tonnes
Gas storage	\$470–555	8.0 – 9.5 tonnes
Gas instant	\$305–400	5.0 – 6.6 tonnes

Typical running costs and emissions for a Melbourne household of 2–3 people.

<https://www.choice.com.au/home-improvement/water/hot-water-systems/articles/gas-vs-electric-hot-water-systems>

5. Determine the feasibility of installing a new systems at your place

- Evaluate factors like available space, orientation, shading,
- Consult with professionals or use online tools, e.g. to assess your solar potential (e.g. <https://www.sunspot.org.au/>, <https://www.solarquotes.com.au/solar-calculator/>)
- Consider your specific needs and constraints.

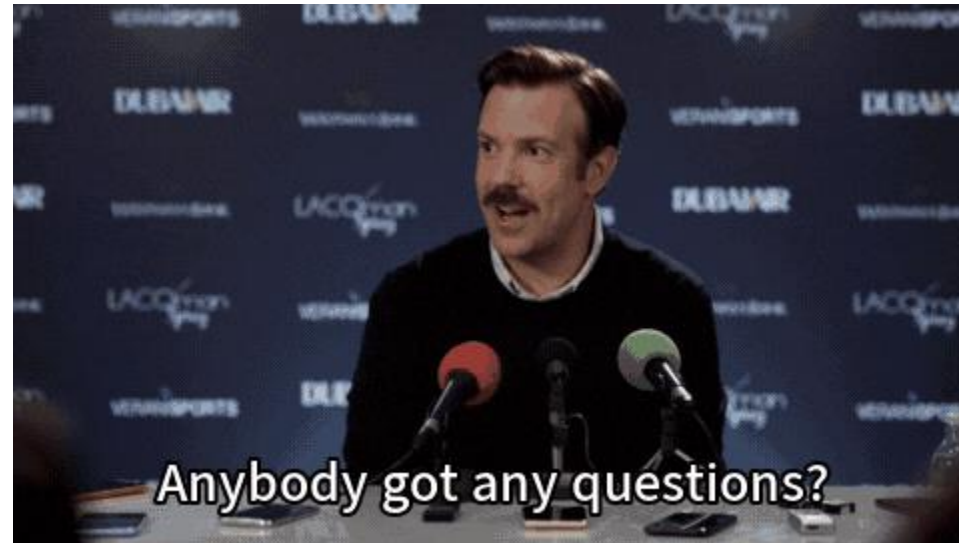


6. Next Steps

- Cancel existing providers? (e.g. gas “abolishment”)
- Next project? What else can you do to reduce your consumption further?



Comments & Questions



Contact us for more questions & comments

www.sustainablestirling.org

