

Analysis: Household energy upgrades would slash the cost of living by billions per annum

Summary:

New analysis from Springmount Advisory reveals the average Australian household is losing between \$1052 - \$3039 per year, due to a lack of access to readily available energy efficient upgrades like solar and home insulation.

Including a breakdown of the top five electorates in each state and territory that will benefit most, the analysis charts a policy path for the cleanest, fastest solution to help millions of Australian households slash their power bills.

Over 4 million Australian households are already slashing their power bills in half due to the installation of solar panels, however 7 million households do not have solar.

This analysis shows the collective annual saving in helping the more than 7 million Australian homes get energy efficient installations is up to a staggering \$23 billion a year.

Key findings - Average savings per household and national total if all households upgraded

Thermal and electrification upgrades¹

- \$1,579 per household, per annum, on average
- \$14.5 billion, total per annum national household savings

Installing rooftop solar -

- \$1052 per household, per annum²
- \$5.5 billion collectively per annum

Upgrading to solar and batteries -

- \$1,459 per household, per annum
- \$9.1 billion collectively per annum across Australia.

Upgrading to solar and batteries plus 'quick fix' thermal upgrades, including efficient electric heat pump, hot water heating and cooking -

- \$3039 per household, per annum

¹ Based on the 'Quick Fix' scenario in the Renovation Pathways research; see assumptions and methodology for details

² National average calculated using state level installation costs and savings from Solar Quotes

Context

In November 2024, Australia crossed the threshold of four million solar households across the nation. Today, one in three Australian homes now have rooftop solar with a total capacity of 25GW - that's more than the total power generating capacity of Australia's remaining coal-fired power stations.

The average rooftop solar home saves more than \$1,500 a year on their power bills. The benefits are broader than just the host household though - every solar panel added helps reduce prices in the wholesale market and ensures a bigger supply of low cost low emissions electricity for neighbouring households, communities and businesses.

Historically, prices during the day time were high but thanks to solar, fossil fuel energy producers - coal and gas - no longer have unrestrained power to set prices and cannot compete with their new, improved renewable replacements, as clean energy like solar and wind often bidding into the wholesale market at \$0 or below \$0.

But the 'energy transition' inside Australian homes is just getting started. While it is well and truly underway, we are only part way there. Firstly, while 4 million homes have solar there are still almost 7 million without. Meanwhile just 250,000 batteries have been installed in homes across Australia.

Additionally, we have an energy efficiency crisis. More than 70 percent of existing homes in Australia have a housing energy rating of three stars or lower - well below the current minimum standard of 7 stars and lower still compared to international standards.³ This poor performance results in energy bills being far higher than they need to be and also conditions inside homes that are often highly uncomfortable and in some situations very dangerous - with some households unable to properly heat or cool their homes no matter the cost.

Given these untapped opportunities, Springmount Advisory was asked by Renew Australia for All to model the electorate level benefits of mass energy efficiency, solar and battery upgrades for residential households.

Springmount Advisory undertook desktop analysis of the most recent research on household upgrade cost savings undertaken by Climateworks Centre and CSIRO⁴⁵ including basic thermal upgrades, and installation of electric hot water heating and cooking. These relatively 'quick fixes' lower energy consumption by increasing

³ [A national roadmap for improving the building quality of Australian housing stock](#), Australian Housing and Urban Research Institute Limited, September 2024

⁴ Australian household savings average based on Renovation Pathways research conducted by Climateworks Centre in 2024. Available at: <https://www.climateworkscentre.org/news/renovations-and-rewiring-can-multiply-the-decarbonisation-dividend/>

⁵ Weighted national average of all housing types.

efficiency and switching away from the most expensive form of home energy - fossil gas, thereby supporting homes to reduce energy bills.

Additionally, separate analysis was conducted on household benefits of solar and solar battery installation in addition to the efficiency and electrification upgrades.

The unique cost savings for stand alone houses, townhouses and apartments have been combined with Australian Bureau of Statistics (ABS) census data to provide an insight into the likely cost savings for households in each electorate across the nation.

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Installing rooftop solar -

- \$1052 per household, per annum⁷
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Upgrading to solar and batteries -

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Upgrading to solar and batteries plus 'quick fix' upgrades -

- \$3039 per household, per annum
- \$23.6 billion collectively per annum

Top electorate beneficiaries per State or Territory

State / Territory ⁸ Rank	Electorate	Annual household electricity savings for electorate
ACT		
1	Bean	\$261.9M
2	Fenner	\$254.7M
3	Canberra	\$231.1M

⁶ Based on Quick Fix scenario in the Renovation Pathways research

⁷ National average calculated using state level installation costs and savings from Solar Quotes

⁸ Note that Territories have less than 5 electorates

New South Wales		
1	Paterson	\$210.2M
2	Macarthur	\$209.5M
3	Farrer	\$208.4M
4	Cowper	\$205.1M
5	Hunter	\$204.6M
Northern Territory		
1	Solomon	\$110.7M
2	Lingiari	\$97.6M
Queensland		
1	Petrie	\$199.6M
2	Brisbane	\$198.4M
3	Blair	\$198.2M
4	Fadden	\$197.7M
5	Longman	\$194.5M
South Australia		
1	Adelaide	\$293.6M
2	Sturt	\$288.6M
3	Spence	\$278.8M
4	Mayo	\$278.3M
5	Barker	\$277.9M
Victoria		
1	Mallee	\$214.3M
2	Lalor	\$208.5M
3	Hotham	\$207.0M
4	Gellibrand	\$204.7M
5	Indi	\$202.0M
Tasmania		
1	Braddon	\$188.9M
2	Lyons	\$186.9M
3	Franklin	\$182.5M
4	Bass	\$182.4M
5	Clark	\$175.9M

Additional benefits

In addition to pure cost savings - supporting housing upgrades would drive the following additional benefits

	Jobs created (job years, nationally)	Emissions reductions (t CO2e per year)	Number of households upgraded (millions)
Thermal and electrification upgrades- Quick Fix	85,164	18.8M	9.20M
Solar Only	137,211	30.1M	5.20M
Home batteries	218,524	na	8.95M

The emission reductions equate to taking 6.5 million cars off of the road⁹.

Assumptions and Methodology

This analysis was prepared for Renew Australia for All by Springmount Advisory, inputs and data were sourced from:

- ABS 2021 Census - housing and income statistics including the number of house types (standalone, townhouse, apartment, social housing) per electorate and the number of households per income bracket per electorate.
- Climateworks Centre’s [Renovation Pathways project](#) - state-level research findings¹⁰ on the upgrade costs and benefits from home energy upgrades for detached homes, townhouses and apartments.
- Australian Institute of Health and Welfare data on social housing stock per state. AIHW data on public housing statistics is more accurate than ABS census data, however is only available at state level
- National Greenhouse Accounts Factors 2022, Table 1, to calculate expected emissions savings from solar installation.
- Savings figures from solar PV and household batteries, based on Solar Quotes.

Quick-fix: Quick-fix upgrades include thermal upgrades (R3.0); infiltration /draught proofing (0.5 ACH); heavy curtain drapes; roller shutters; efficient electric heat pump; efficient electric hot water heating and cooking.

Solar and battery: The following assumptions were used to model additional savings from solar PV and household batteries, based on Solar Quotes-2024¹¹).

⁹ <https://www.epa.gov/greenvehicles/greenhouse-gas-emissions-typical-passenger-vehicle>

¹⁰ <https://www.climateworkscentre.org/news/renovating-australian-home-can-reduce-emissions-and-energy-costs-savings-in-your-state-or-territory/>

¹¹ <https://www.solarquotes.com.au/solar-calculator/>

The modelling on savings utilised conservative figures - including smaller solar sizes and batteries (as outlined below). It also did not include any cost savings and/or benefits that households may receive through feed-in tariffs.

Building type	Solar Size (kW)	Battery Size (KWh)
Apartment	3	Generic Battery size (10 KWh)
House	7	
Townhouse	6	
House for WA	6.6	

Acknowledgements

We would like to acknowledge ACOSS work on the benefits of home energy upgrades ([2024](#)) which helped inform our modelling and guide our work.

About Springmount Advisory

Springmount Advisory was founded to provide policy and research insights required to address climate change at speed and scale.

We work with the best and the brightest in order to provide high quality research, policy and strategy advice for organisations driving change for a better world.

Our work delivers **Insight**, **Impact** and **Outcomes** for our clients. For more information about our work, see: <https://www.springmountadvisory.com.au/>

About Renew Australia for All

Renew Australia For All is a historic **alliance of more than 65 organisations** from social services, unions, faith, community and multicultural groups, environment organisations and industry working together to deliver a fairer, better and more secure future for all Australians.

See more about us and our plan to slash bills and cut inflation at renewaustraliaforall.org