Institute for Energy Economics and Financial Analysis

IEEFA webinar: Slashing energy bills through efficient, smart homes

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Snapshot of IEEFA

The Institute for Energy Economics and Financial Analysis (IEEFA) is a non-profit global impact think tank that produces a significant volume of original independent public interest research and analyses on issues related to sustainable energy markets, trends, regulations, and policies.

Evidence-based

Our analyses are thoroughly researched, fact-based, and data driven

Independent

As a non-profit think tank, our work is free from political influence, corporate and sectoral interests.

Energy focused

Our mission is to accelerate the transition to a diverse, sustainable and profitable energy economy. We cover domestic and export energy markets.

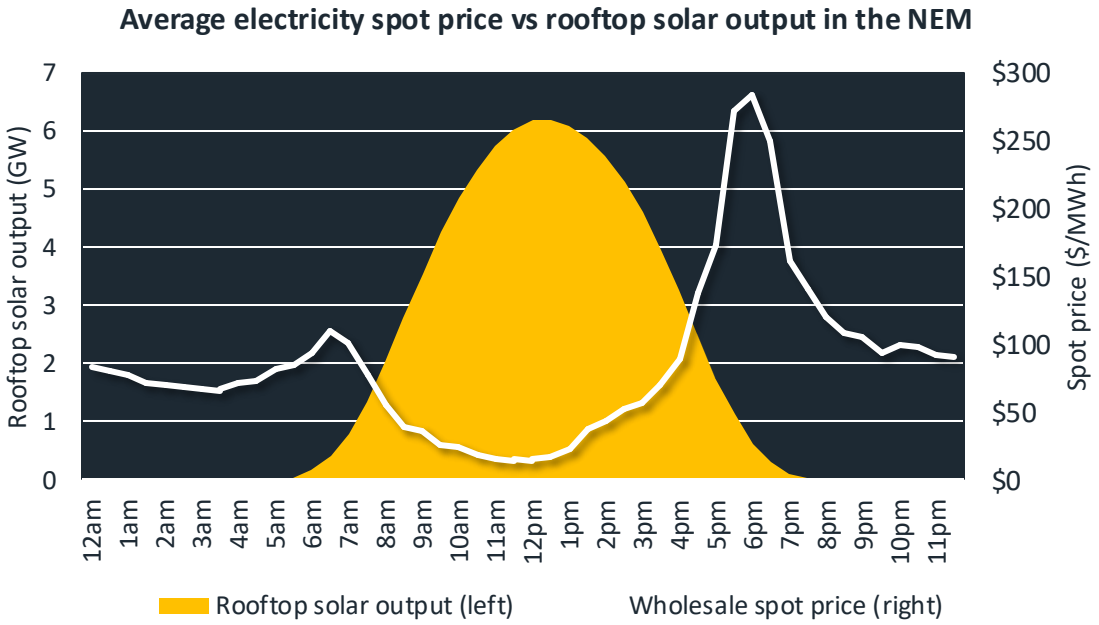
Financial analysis

We focus on the financial issues associated with the energy transition, looking at market trends, financial risks and opportunities.

Global

We have teams in North America, Europe, Asia and Australia.

Renewable energy is putting downward pressure on electricity prices – so why are bills still so high?



Source: AEMO

Energy bills to rise by up to 9.7% as Australian regulators approve price increases

The Guardian Australia – 26 May 2025

Higher power bills to kick in from July

Sydney Morning Herald – 26 May 2025

Cost of Living

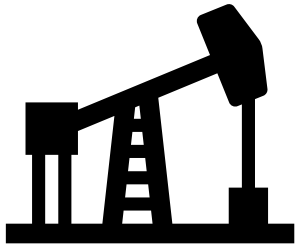
'Not welcome news': Electricity prices to rise for 500,000 Australians from July

SBS News – 26 May 2025

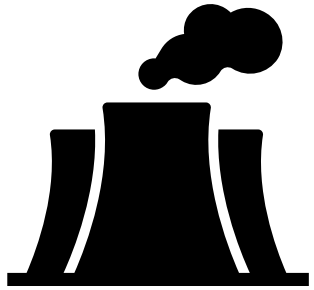
Households face up to 9pc power bill rise amid coal plant outages

Australian Financial Review – 13 March 2025

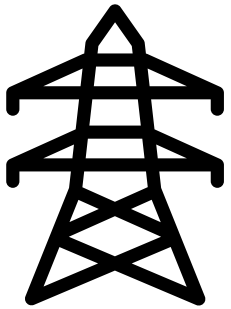
What's driving high energy bills in Australia?



High coal and gas prices



Coal power station outages



High network costs (including supernormal profits)

An overlooked factor: The state of our homes?

Household energy upgrades are the key to lowering energy bills

Thermal efficiency upgrades

- Sealing gaps
- Draught-proofing
- Insulation
- Window treatments

and more…

Upgrading to efficient electric appliances

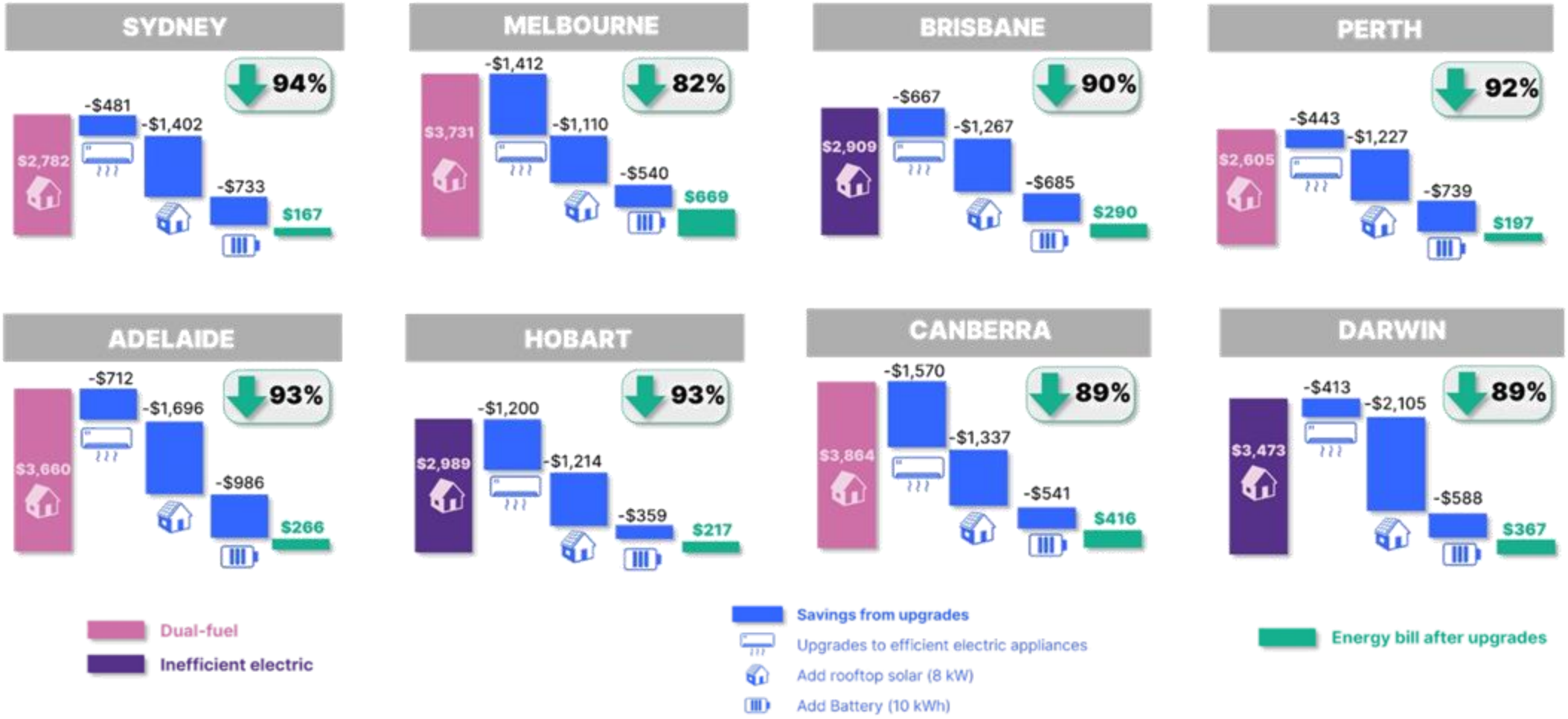
From	To
Gas appliances	Heat pump hot water
Resistive electric appliances	Split systems
	Induction cooktops

Installing rooftop solar

Installing a household battery

Shifting key energy loads

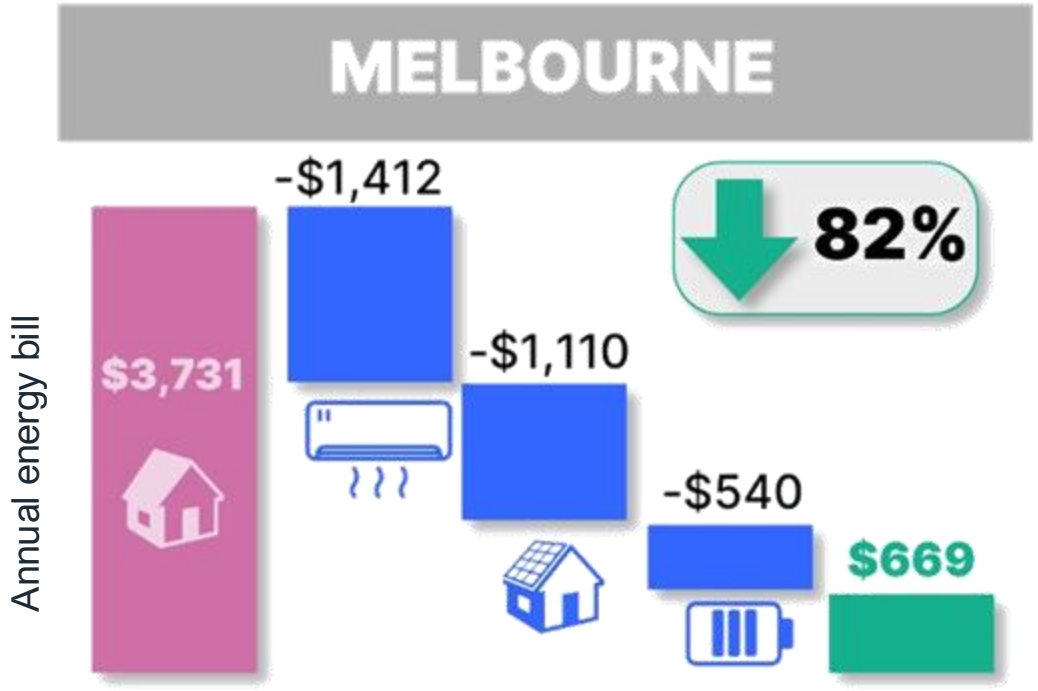
Efficient electric appliances, rooftop solar and batteries could lower energy bills by 80-90%



Example: A typical home in Melbourne

Our starting home uses **gas** for:
- Ducted heating
- Hot water
- Cooking

Gas appliances are generally the least efficient option.



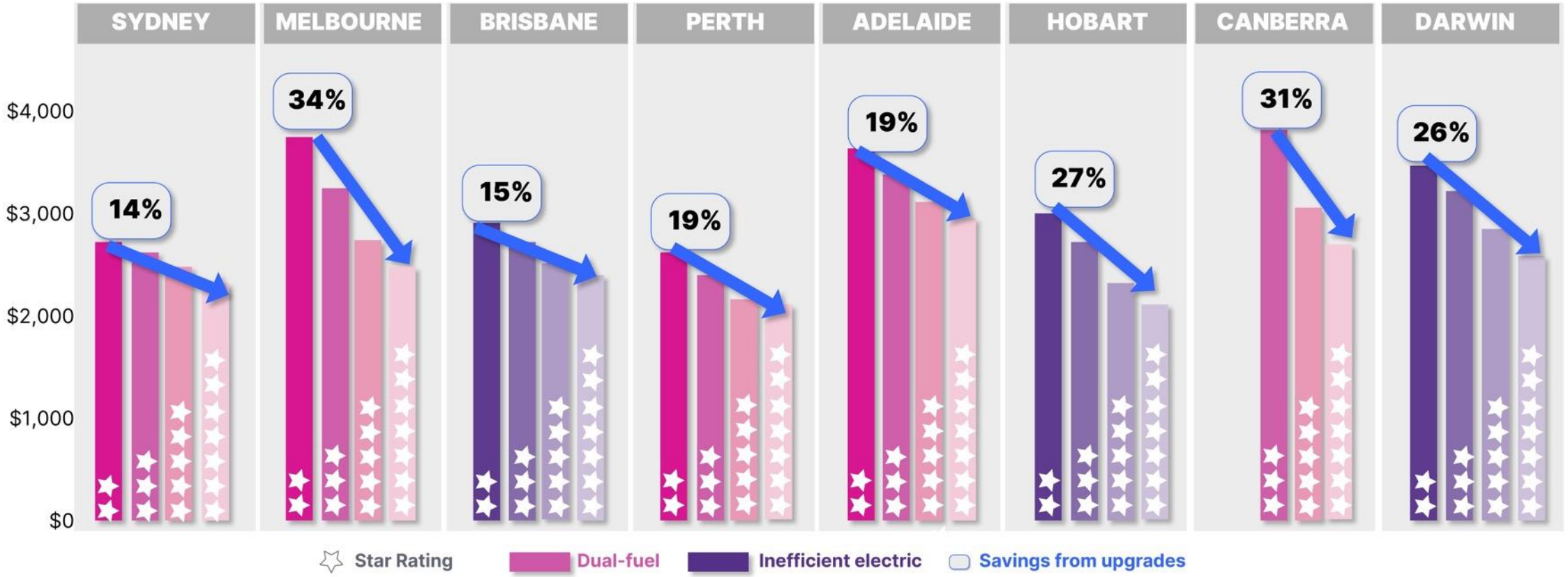
Upgrading to:
- Reverse-cycle air conditioners for heating
- Heat pump hot water system
- Induction cooktop

And then disconnecting from gas

Installing a rooftop solar system (8 kW)

Adding a battery (10 kWh)

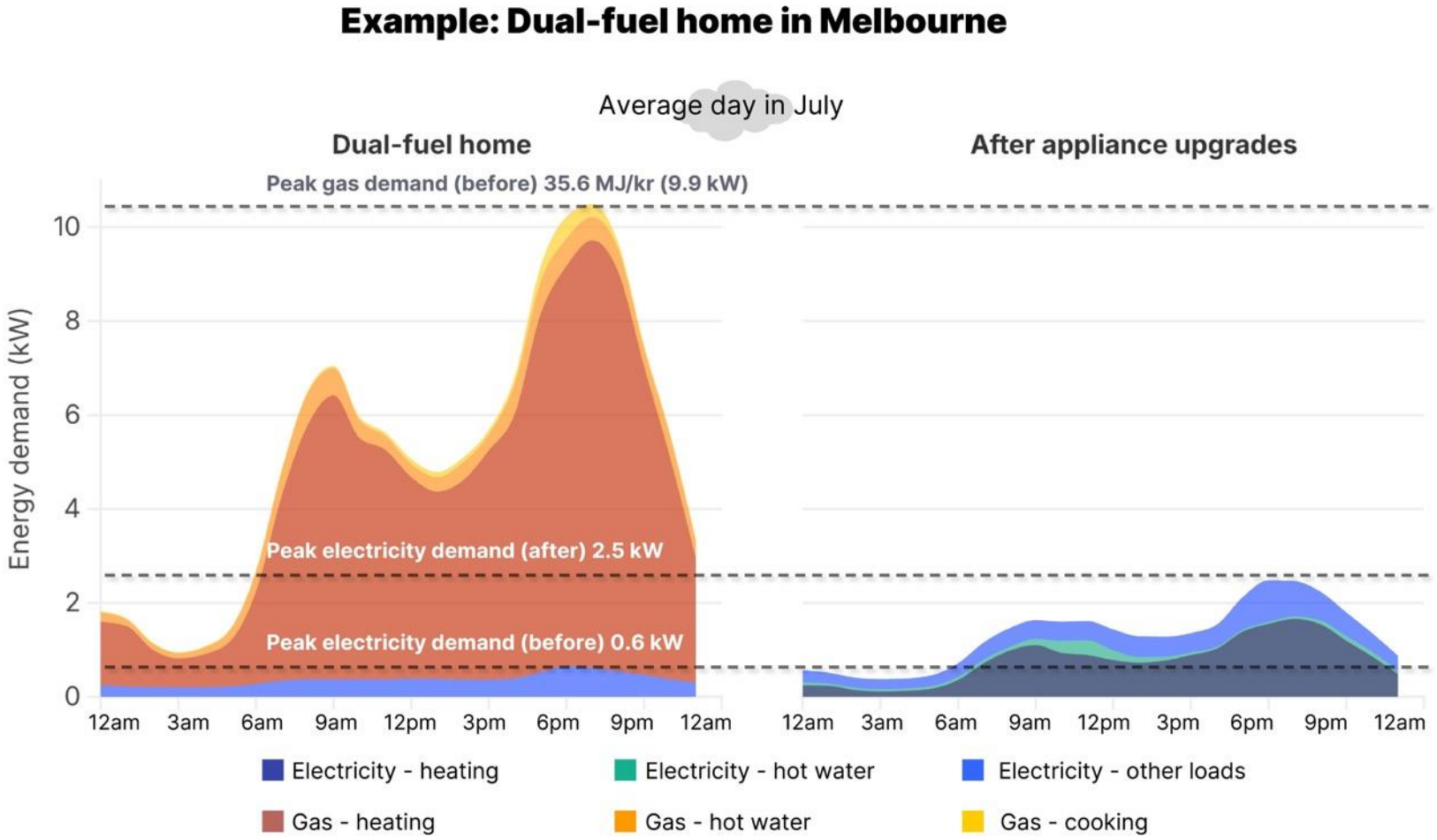
Thermally efficient homes have the lowest running costs



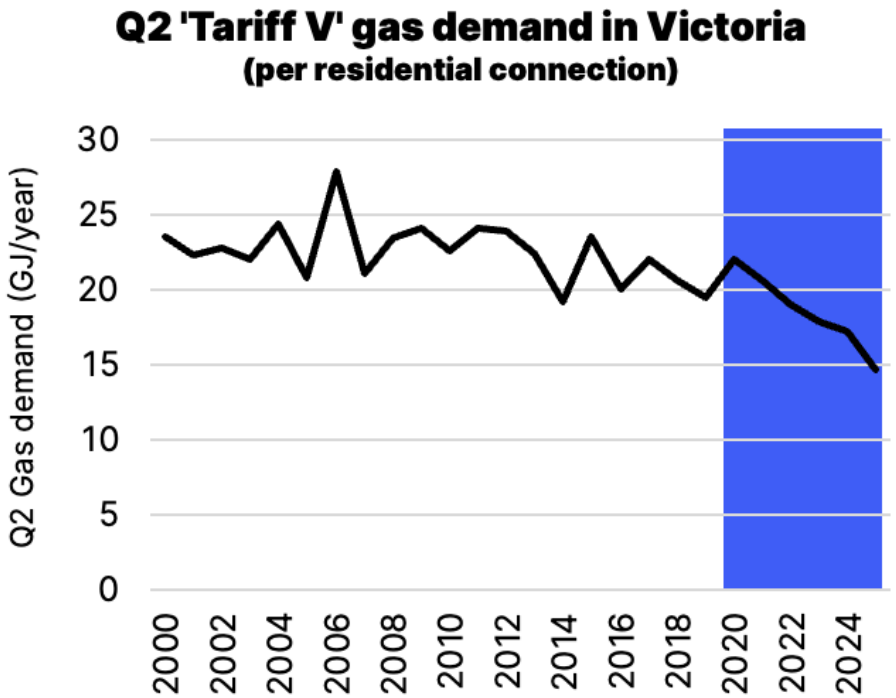
How could home energy upgrades support the wider energy system?

1

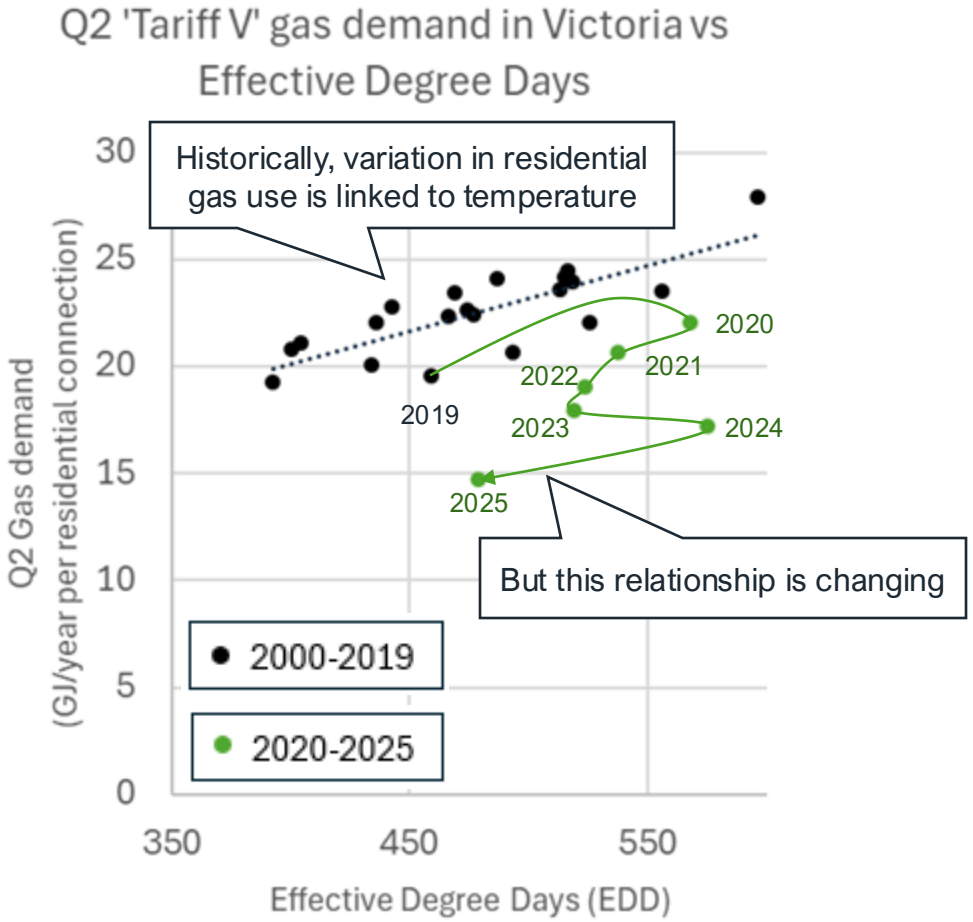
Reducing gas consumption in homes helps avert gas supply shortfalls.



We are already starting to see impacts in Victoria



Source: AEMO and AER.
Tariff V includes most residential and small business customers

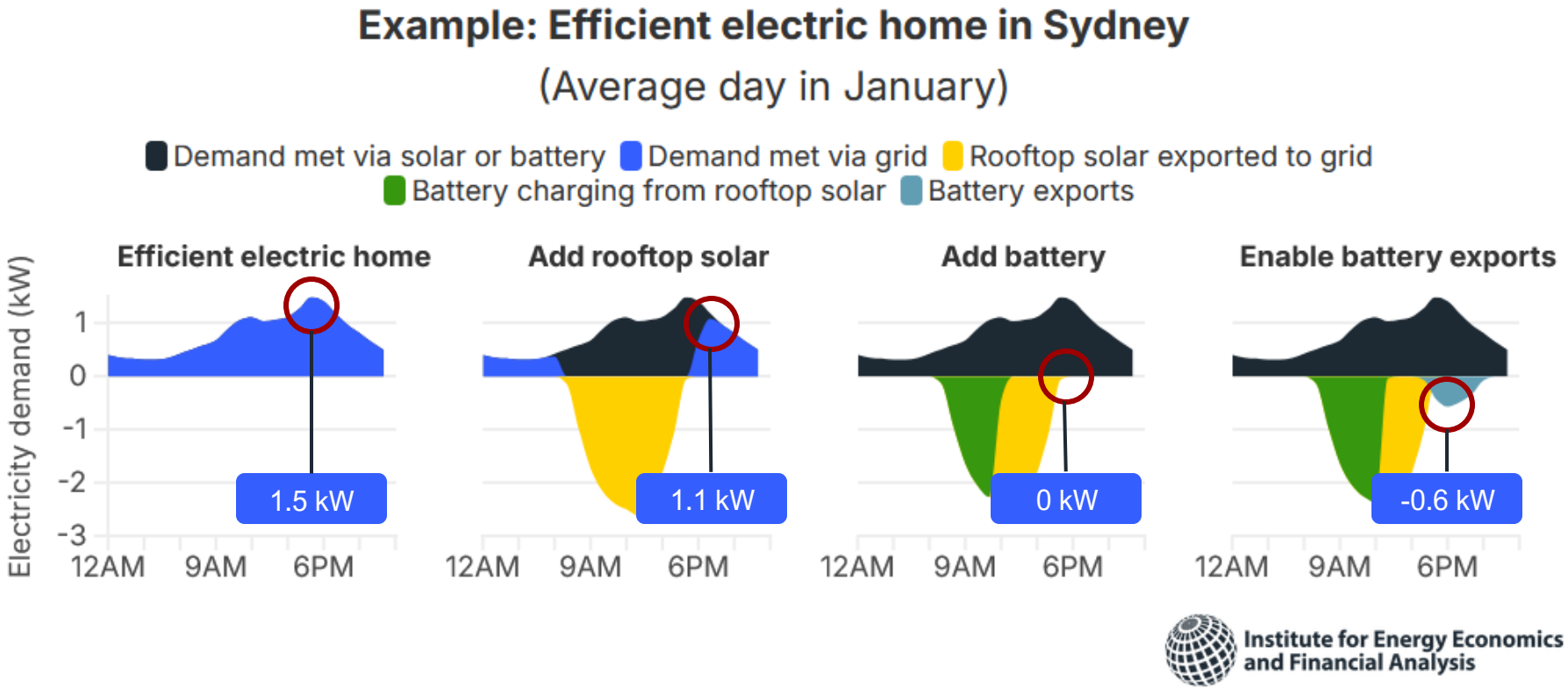


Source: AEMO and AER
Adapted from original analysis by Tim Forcey

How could home energy upgrades support the wider energy system?

2

Managing peak electricity demand can help lower wholesale and network* costs.



If we get the regulations right

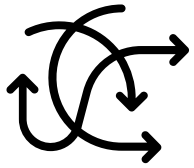
Many of these upgrades are economical – so why doesn't everyone take them up?

Many households have no access to upgrades

One in three homes are rented

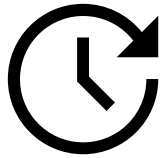
Upfront capital costs can be a barrier

'Bounded rationality' impacts our decisions



Decisions around energy use are complex

Consumers often lack time, ability and motivation to engage with energy decisions



We tend to undervalue future savings ("hyperbolic discounting")

Our recommendations to governments

1	Federal and state governments should commit to halve household energy bills over the next decade
2	Minimum energy performance standards should be expanded and increased
3	A comprehensive, national incentive scheme for energy upgrades should be implemented.
4	Fairer electricity pricing structures should be provided for consumers
5	A first-principles review of the economic regulation of gas and electricity networks should be undertaken

Contact

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