Community Attitudes to Home and Car Electrification

Research Report

Prepared for The Australia Institute

April 2023

Prepared for:

Noah Schultz-Byard
SA Director
E noah@australiainstitute.org.au

The Australia Institute
Research that matters.

Prepared by:

David Stolper
Partner, Research
E David.Stolper@secnewgate.com.au

Irene Diseris
Director
E Irene.Diseris@secnewgate.com.au

Yoko Di Benedetto
Senior Executive, Research
E Yoko.DiBenedetto@secnewgate.com.au

The Research Society · QPR Member QPR QUALIFIED PROFESSIONAL RESEARCHER · iap2 international association for public participation · ISO 20252 Standards CERTIFIED · Australian Polling Council Quality Mark

Contents

Executive summary

Key findings

Issues context

Cost of living dominates the current issue agenda with lower concern for climate change and households' contribution to carbon pollution

- Cost of living (77% are very or extremely concerned), electricity prices (64%), the economy (63%) and housing affordability are currently the most concerning issues across the community.
- 58% of those with a mains gas connection are concerned about gas prices while climate change is a mid-tier issue (45%).
- Only 21% are concerned about their household's contribution to carbon pollution and there is a clear opportunity to raise the importance of this issue in the context of electrification.

Strong support for the transition to renewable energy despite cost-of-living concerns

- Around two thirds (65%) feel positive about the transition to renewables vs 15% negative, with young people, and those in South Australia, being most positive about it.
- There is also solid support for the Federal Government's plan to reach net zero by 2050 with 53% positive and 19% negative about this.

Widespread acknowledgement of the importance of energy efficient homes to reduce emissions but less focus on home electrification

- Nearly three quarters (70%) feel making homes more energy efficient is very or extremely important for Australia to reduce carbon emissions and there is similarly high acknowledgement of the role of large-scale renewable projects (63%) and increasing the uptake of rooftop solar 61%).
- However, Australians are currently relatively less convinced about the importance of electrifying homes to significantly reduce emissions (42% think this is important), or of increasing the use of electric cars (38%).

Attitudes to electric cars

Australians are fairly positive about electric and hybrid vehicles and generally support the transition towards them

- Australians felt most positive about hybrid vehicles (58% very or somewhat positive), followed by electric vehicles (52%) and then combustion engine vehicles (44%). Men and younger Australians were particularly positive about electric and hybrid vehicles.
- Just under half of Australians (45%) also felt positive about the transition to more EVs although 26% feel negative towards it and this view is especially prominent among those aged 65 or over.

Although combustion engine vehicles currently dominate on the road, over half expect their next car to be a hybrid or an EV

- Just 6% of Australians indicated they had at least one EV in the home and just 4% had ever personally purchased one. The uptake of hybrid cars was also quite low with just 8% having ever purchased one or having one in the home.
- However, 25% of people who expect to buy a new car within 10 years expect their next car to be electric and another 40% expect it to be a hybrid car.

Greater affordability and access to public charging stations are key to increasing the uptake of EVs

- Perceived environmental benefits, cost-effective running costs and the increasing cost of petrol/diesel were the top motivators among those who had already purchased or are considering an EV.
- The cost was the biggest barrier to purchasing an EV, followed by concerns about the availability of public charging stations or of running out of charge.
- Increasing the availability of public charging stations and having free charging in public areas are considered the most important priorities to promote the adoption of electric vehicles in Australia. Government rebates and providing clear information on EV benefits is also considered important by most people.

Key findings *cont'd*

Overall attitudes to home electrification

Most Australians feel positively about the move to electrify more Australian homes, and this is largely driven by environmental reasons

- Over half of Australians (55%) feel positive about electrifying more Australian homes with only 13% negative about it and 31% ambivalent. Men and younger people are more likely to feel positive about it than other segments.
- Environmental reasons were the biggest drivers of positive sentiment towards electrifying more Australian homes (mentioned by 59%), followed by the potential for cheaper electricity bills (18%).
- Those with a negative view of the trend most mentioned cost concerns (43%), the electricity network is already overloaded, that gas is better for cooking, heating and hot water, that it is more efficient or that they want the choice of both gas and electricity.

Appliance fuel preferences

Australians typically prefer electric for heating, hot water and ovens, but are divided when it comes to their cooktops

- There is a clear preference for electric heating (58% vs. 20% gas), electric hot water (54% vs. 32%) and electric ovens (63% vs. 25%). However, opinions on cooktops are more divided with 46% preferring electric vs. 43% for gas.
- When we compare current vs preferred energy sources, it reveals that the biggest opportunity lies with converting gas hot water users. Currently, 47% use gas for hot water, but only 32% would opt for a gas system if they needed to purchase a new one.
- By contrast, converting people from gas to electric cooktops is likely to be more challenging with 43% currently use gas and 43% also preferring it.

Perceived efficiency, environmental benefits and the ability to use solar are amongst key reasons to prefer electricity

- Across the four appliance categories, the main reasons for preferring electricity were typically: not having a gas connection, being more energy efficient, being better for the environment, it's what they currently use, its safer and that it can be powered by solar. Comfort was also a key reason for preferring electricity for home heating.
- The top reasons for choosing gas power included: they currently use gas, and it would be too much effort to change or a belief it's more energy efficient or performs better than electricity. Price and comfort is important for heating while the inconvenience of switching is another important factor for hot water.

Home energy management systems (HEMS)

There is significant interest in HEMS

- Around six in ten (62%) have or are interested in installing a comprehensive HEMS and 63% have or are interested in basic timers. Opinions were slightly more divided when it came to "connected" system (54%).
- Regarding specific appliances, consumers were most interested in providing control over their solar panels (65%), followed by home battery systems (61%), hot water (61%), dishwasher (60%) and washing machines (60%). Those with EV chargers and home batteries were also relatively interested in allowing control of this equipment (80% and 71% respectively).

Introduction

Background and objectives

The transition towards a low-carbon future is a pressing issue, and household electrification has emerged as a critical component of Australia's ongoing shift in energy use. In response, The Australia Institute commissioned a research report to better understand current consumer sentiment towards home and vehicle electrification via new community research. This report provides a snapshot of where Australian households currently stand in their journey towards electrification and identifies the key drivers and barriers to adoption.

The survey captures the opinions of a diverse sample of Australians, from different demographics and regions, providing valuable insights into the attitudes and behaviours of the wider population. The findings of the report can inform public policy development, at both a state and national level, to help guide Australia to a more sustainable and resilient energy future.

Specific research objectives were to understand:

- Current and potential electric vehicle use and the consideration factors for combustion engine vs. electric vehicles (EVs);
- Household energy and appliance choices and factors in the consideration of gas vs. electric appliances; and
- Key barriers and motivations for purchasing electric vehicles or installing electric appliances.

Research Methodology

Online survey

Participants sourced from an ISO accredited market research panel.

Representative sample

n = 1,954 Australians aged 18+

Margin of error +/- 2.2%
(95% confidence interval).

Quotas set on age and gender (interlocked) by location. A detailed sample profile is included in Appendix 2.

Data weighted to ABS Census population statistics on age and gender by location.

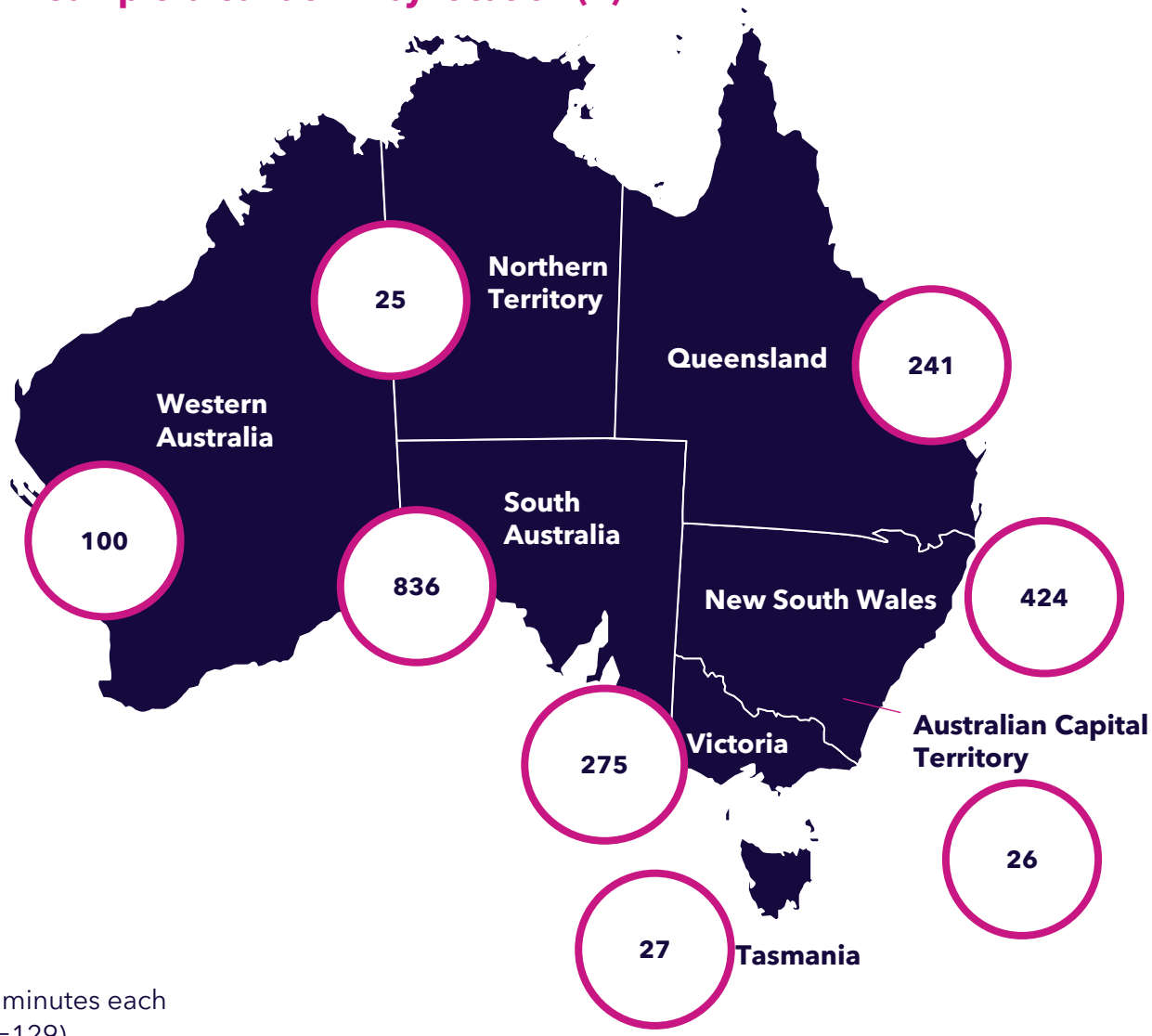
Fieldwork dates

3rd – 17th March 2023.

Survey testing

n=6 cognitive interviews across SA and NSW (45 minutes each via Zoom) + two rounds of pilot survey testing (n=129).

Sample breakdown by location (n)

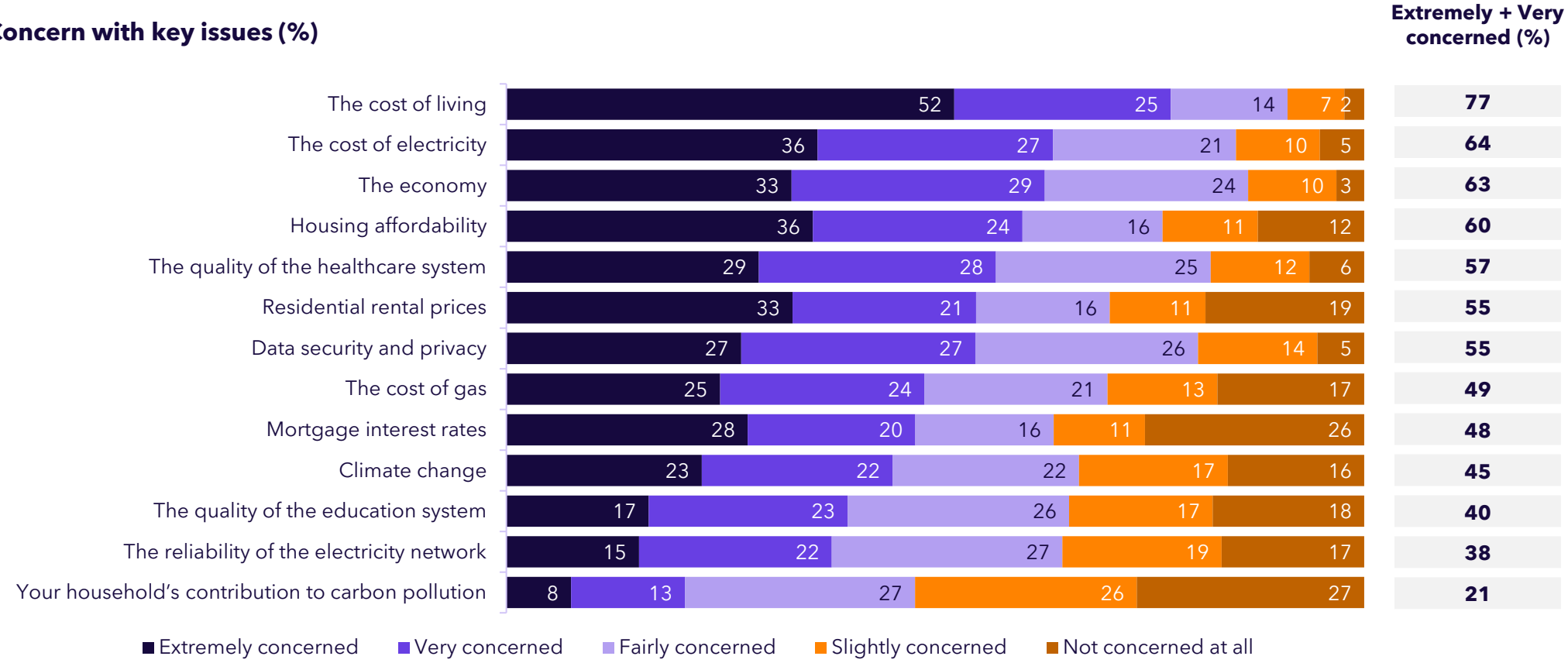


Contextual issues and concerns

Contextual issues and concerns

The cost of living, electricity prices, the economy and housing affordability are dominating the current issues agenda. Climate change is a mid-tier issue while there is relatively low concern with household contribution to carbon pollution.

Concern with key issues (%)



- **Victorians** and **people with the mains gas** are more concerned about **the cost of gas** (58% of both segments) vs those in other states (46%) and those with no gas connection (40%).
- **Those aged 35-49** are more concerned about **the cost of electricity** (70%) and **gas** (56%) compared to other age groups (62% and 46% respectively).
- **University educated** people are more concerned about **climate change** (53%) and their household's **contribution to carbon pollution** (25%) compared to those who are not (39% and 18% respectively).
- **Men** and **older people aged 65+** are more likely to be not concerned at all about and their household's **contribution to carbon pollution** (33% and 38% respectively) and **climate change** (20% and 23% respectively).

Overall reactions to the transition to more renewable energy

There is strong support for the transition to renewable energy despite cost-of-living concerns. Around two thirds (65%) feel positive about the transition to renewables, with young people, and those in South Australia, being most positive about it.

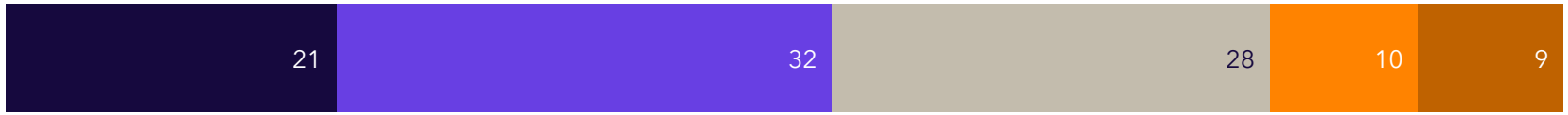
Attitudes to the transition to renewable energy (%)

Very + Somewhat Positive (%)	Very + Somewhat Negative (%)
65	15

■ Very positive ■ Somewhat positive ■ Neither positive nor negative ■ Somewhat negative ■ Very negative

	Large states					Gender		Age			
	SA	NSW	VIC	QLD	WA	Men	Women	18-34	35-49	50-64	65+
Very + Somewhat Positive (%)	69↑	63	65	61	68	65	65	71↑	66	62	59

Attitudes to the Federal Government's plan to reach 'net zero' emissions by 2050 (%)



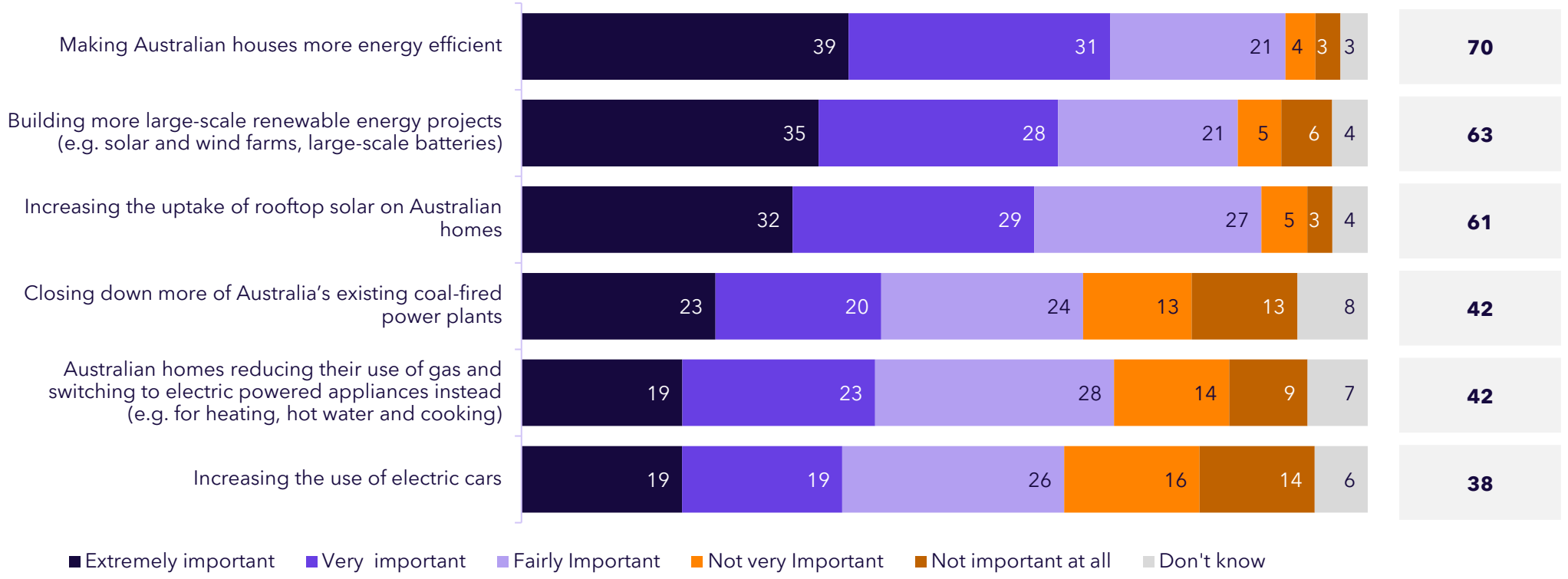
Very + Somewhat Positive (%)	Very + Somewhat Negative (%)
53	19

■ Very positive ■ Somewhat positive ■ Neither positive nor negative ■ Somewhat negative ■ Very negative

Perceived importance of actions to reduce Australia's carbon emissions

There is widespread acknowledgement of the importance of making homes more energy efficient, building more large-scale renewable projects and increasing the uptake of rooftop solar. However, Australians are relatively less convinced about the importance of electrifying homes or increasing the use of electric cars.

Perceived importance of potential actions to reduce carbon emissions (%)



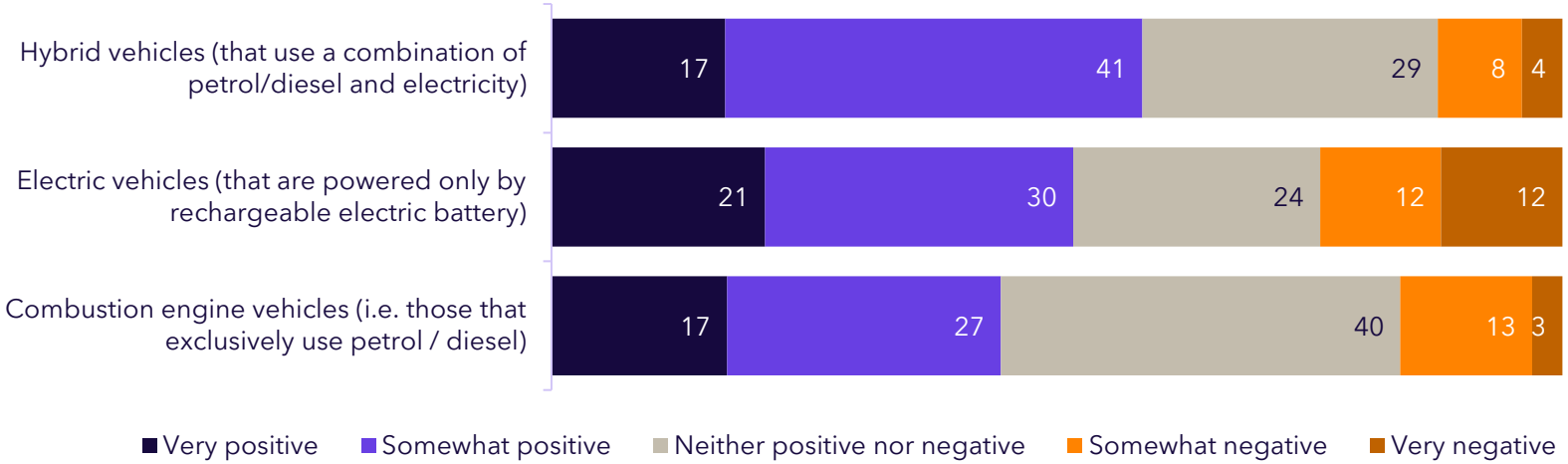
- **Young people aged under 35** (50%) are more likely to believe that reducing the use of gas and switching to electric powered appliances instead will help reduce carbon emissions compared to older age groups (39%).
- **Older people aged 65+** (33%) are less likely to think the use of electric car will help reducing carbon emissions compared to those under 65 (44%).

Uptake and attitudes to electric vehicles

Overall attitudes to electric, hybrid and combustion engine cars

Australians feel most positive about hybrid cars (58%) with only 12% negative. Electric vehicles are a little more polarising (52% positive and 24% negative) with men, younger people and university educated people being most positive about them.

Attitudes to car types (%)



	Very + Somewhat Positive (%)	Very + Somewhat Negative (%)
Hybrid vehicles	58	12
Electric vehicles	52	24
Combustion engine vehicles	44	16

	More likely to feel positive	More likely to feel negative
Hybrid vehicles	• Men (65%) • Younger people aged 18-34 (65%) • Working (65%) • University educated (69%)	• Older people aged 65+ (17%) • Non-working (47%) • Not university educated (14%)
Electric vehicles	• Men (57%) • Younger people aged 18-34 (65%) • Working (60%) • University educated (63%)	• Older people aged 65+ (41%) • Homeowners (29%) • Non-working (31%) • Not university educated (19%)

Q7. How do you feel about the following types of cars in general?
Base: All participants (n=1,954)

Current uptake of electric and hybrid cars

The uptake of electric cars is still quite limited with just 6% saying they have one in their home and 4% having personally purchased one. The uptake of hybrid cars is slightly higher (8% have purchased one) with only 3% saying they have a vehicle charging station in their home.

Stated uptake of electric and hybrid cars (%)

	Have purchased	Currently have in the home
Electric car	4%	6%
Hybrid car	8%	8%
Charging station	N/A	3%

EV user/owner profile (7% of participants):

- **Men** (9% vs. 5% women)
- **Younger people aged 18-34** (14% vs. 4% amongst aged 35+)
- **Working people** (9% vs. 5% of non-working people)
- **University educated** (10% vs. 5% of not university educated)
- **Those who speak a language other than English** (14% vs 6% of those who do not)
- **Not financially vulnerable** (9% vs. 4% of financially vulnerable)

- South Australians are less likely to be an EV user/owner – just 4% have ever purchased one or have at least one EV in the home vs. 7% of those in other states.

Q4. Have you ever personally purchased any of the following cars for yourself or your household (either individually or with someone else)?
Q5. How many cars (including vans, utes or SUVs, but excluding motorbikes or scooters) does your household currently own with the following fuel/power types?
Q15. Does your home have, or are you considering, any of the following features?
Base: All participants (n=1,954); EV users/owners (n=116)

Attitudes to the transition to more EVs and predicted uptake of them

Nearly half of Australians (45%) feel positive about the transition to more EVs with around a quarter (26%) feel negative about it. Nonetheless, around two thirds of those planning to purchase a new car in the next 10 years expect it to be either electric or hybrid. Among those who intend to purchase a second-hand car, there is still a lean towards petrol.

Perceptions of the transition to more electric cars (%)

Very + Somewhat Positive (%)	Very + Somewhat Negative (%)
45	**26**

■ Very positive ■ Somewhat positive ■ Neither positive nor negative ■ Somewhat negative ■ Very negative

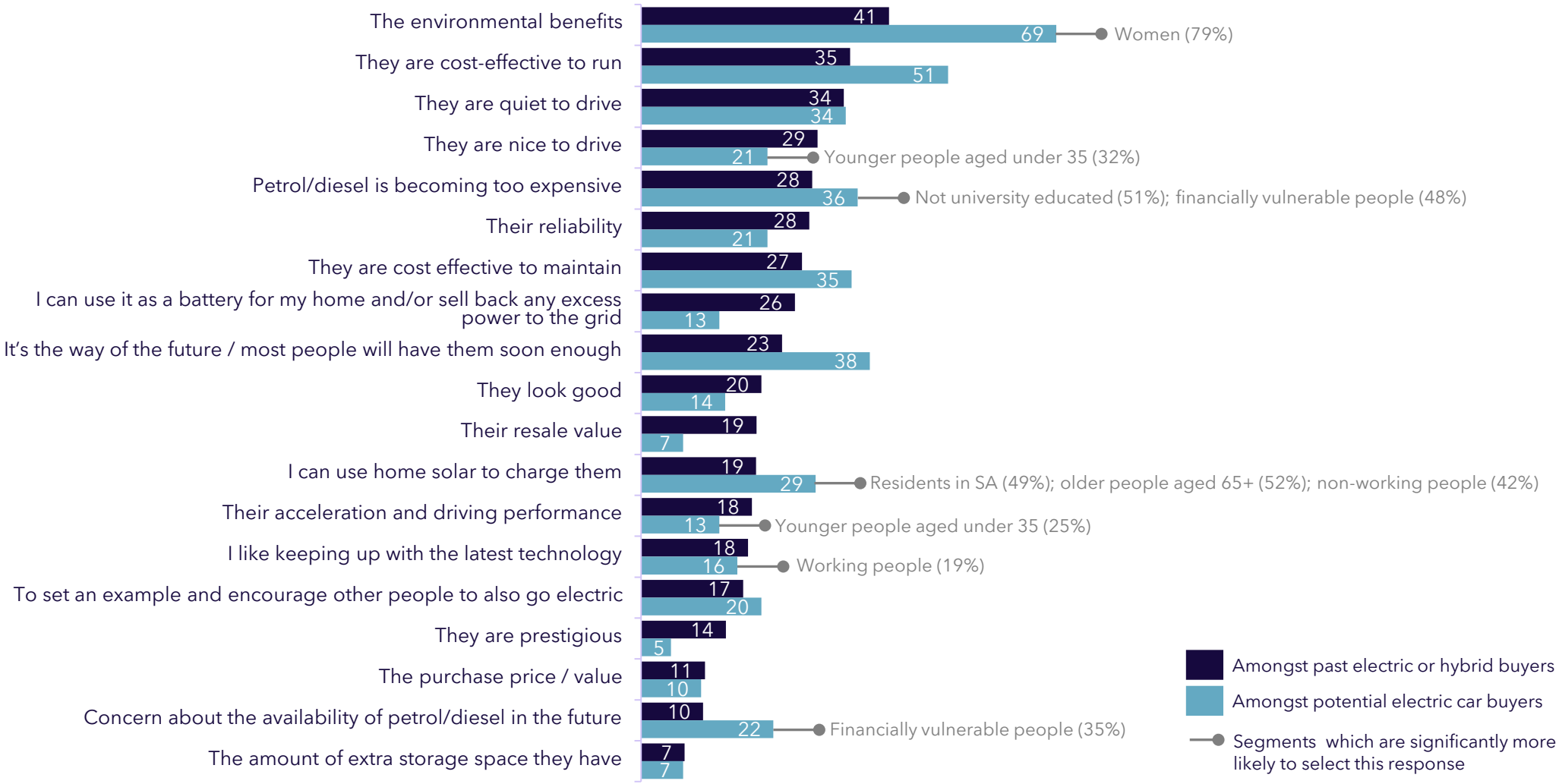
	Larger states					Gender		Age			
	SA	NSW	VIC	QLD	WA	Men	Women	18-34	35-49	50-64	65+
Very + Somewhat Positive (NET %)	46	42	51 ↑	44	42	49 ↑	42	55	48	40	35 ↓

	% of Australians who will purchase this type of car in the next 10 years	Among those who will purchase this type of car in the next 10 years, % of who say their next car will be...		
		Electric	Hybrid	Petrol or diesel
A new car	65	**25**	**40**	36
A second-hand car	55	**11**	**32**	58

Reasons for purchasing an electric or hybrid car

Electric and hybrid buyers were mostly motivated by perceived environmental benefits and cost-effectiveness. Notably we found that half (49%) of those in South Australia who were potential EV buyers said a key motivation was the ability to use home solar for charging.

Reasons for purchasing an EV (% selecting each reason)

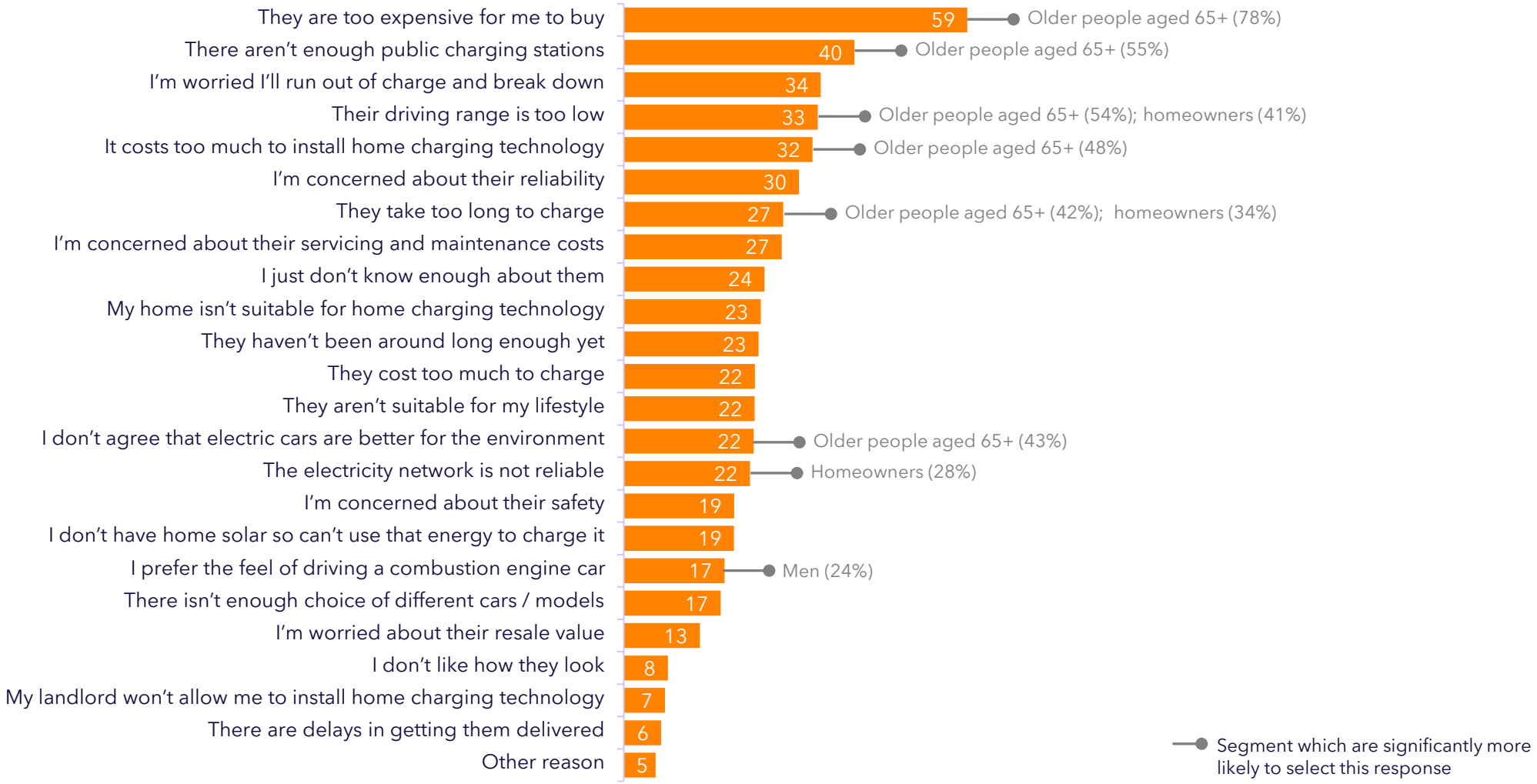


Q10A. Why did you previously decide to purchase an electric or hybrid car?
Q10B. Why do you think you will probably buy an electric car for your next new or second-hand car?
Base: Those who have ever purchased an EV (n=74); Those who will buy an EV in the next 10 years (n=273)
Descending order based on responses amongst past EV buyers

Barriers to purchasing an electric car

Cost, a lack of public charging stations and range anxiety are amongst the main reasons people will probably not purchase an electric car for their next vehicle. Older people are more likely to have a range of concerns about the cost as well as other issues.

Reasons for not purchasing an electric car next (% selecting each reason)



Q11. Why do you think you will probably not buy an electric car for your next new or second-hand car?
Base: Those who will buy a car in the next 10 years, but it will not be an EV (n=864)

Attitudes towards home electrification and the current state of Australian homes

Prompted reactions to the move to electrify more Australian homes

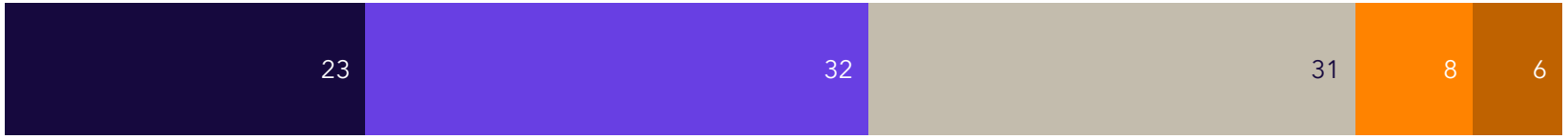
Over half of Australians (55%) feel positive about electrifying more Australian homes with only 13% negative about it and 31% ambivalent. Men and younger people are more likely to feel positive about it than other segments.

In Australia, several Governments and other organisations are encouraging Australian homes to shift away from gas-powered appliances (for their heating, cooling, hot water and cooking) and to use more electric appliances (ideally powered by solar power) instead.

Shifting to electric power will…

- *Reduce carbon pollution and help Australia reach its target of net zero emissions by 2050*
- *Help many households save money on their energy bills by switching to more efficient electric appliances.*

Overall, how do you feel about the move to "electrify" more Australian homes? (%)



Very + Somewhat Positive (%)	Very + Somewhat Negative (%)
55	13

■ Very positive ■ Somewhat positive ■ Neither positive nor negative ■ Somewhat negative ■ Very negative

	Larger states					Gender		Age			
	SA	NSW	VIC	QLD	WA	Men	Women	18-34	35-49	50-64	65+
Very + Somewhat Positive (NET %)	54	53	56	53	59	62 ↑	49 ↓	67 ↑	53	52	47 ↓

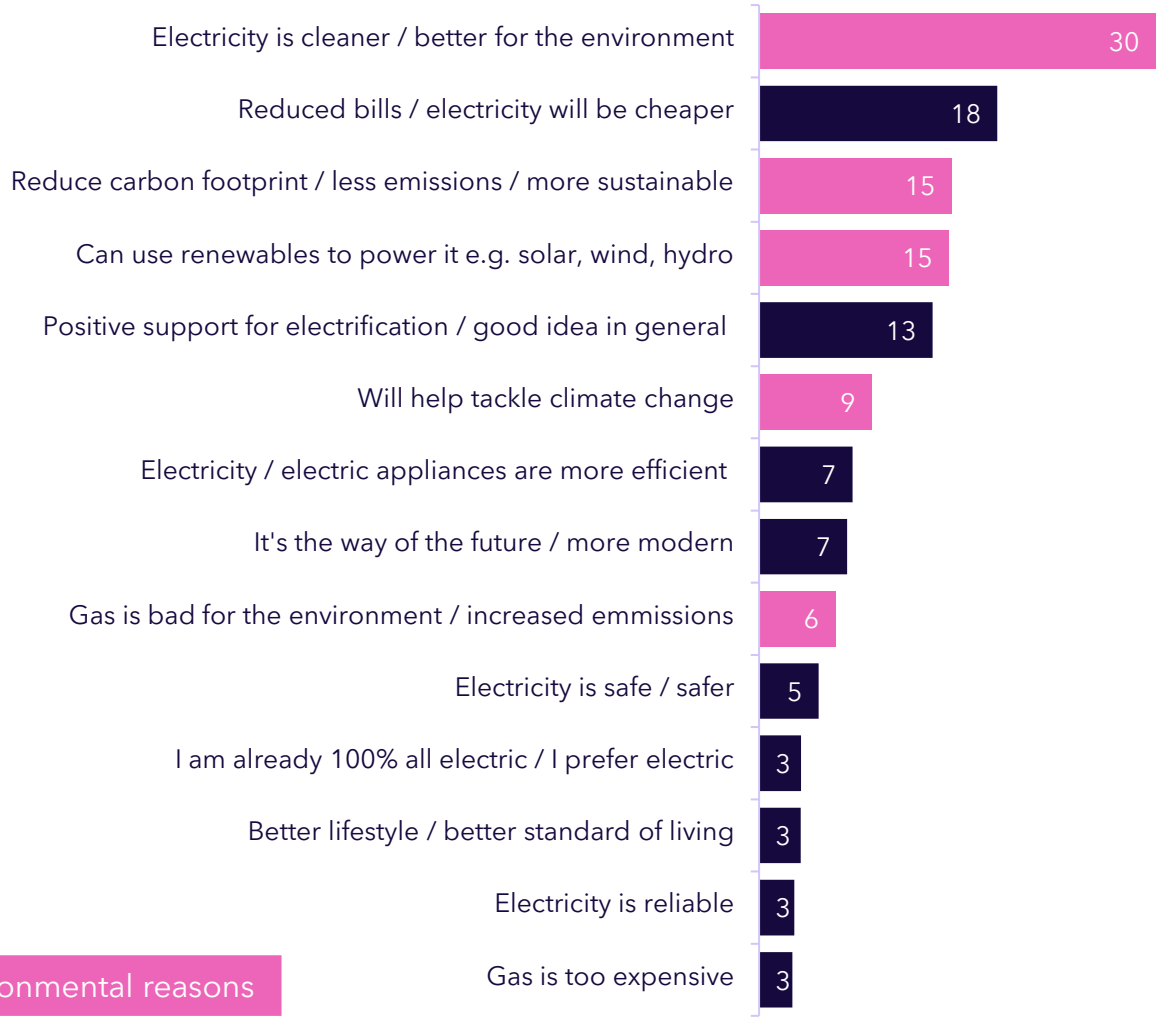
Q24. Overall, how do you feel about the move to "electrify" more Australian homes?
Base: All participants (n=1,954; SA: n=836; NSW: n=424; VIC: n=275; QLD: n=241; WA: n=100; Men: n=966; Women: n=988; 18-34: n=566; 35-49: n=542; 50-64: n=443; 65+: n=403)

↑ Significantly higher than those not in the group @ 95%
↓ Significantly lower than those not in the group @ 95%

Reasons for feeling positive about electrifying more homes

Environmental factors were the main stated reasons for positive sentiment towards electrifying more Australian homes, with 59% mentioning factors including that it is a cleaner fuel or that it will help reduce carbon emissions. Around one in five (18%) were also positive because they felt it would reduce people's energy bills.

Stated reasons for positive reaction – unprompted (coded % among those who were positive)



"This will greatly reduce the carbon footprint and you can save a lot of money if it can be powered by your own solar."

"Solar panels are extremely energy efficient and battery storage is great. If we can draw on energy produced by the sun, rather than gas and coal that's a good thing."

"To reduce our pollution and to make it cheaper. With solar panels and a battery, you can almost run your household for free (after initial costs)."

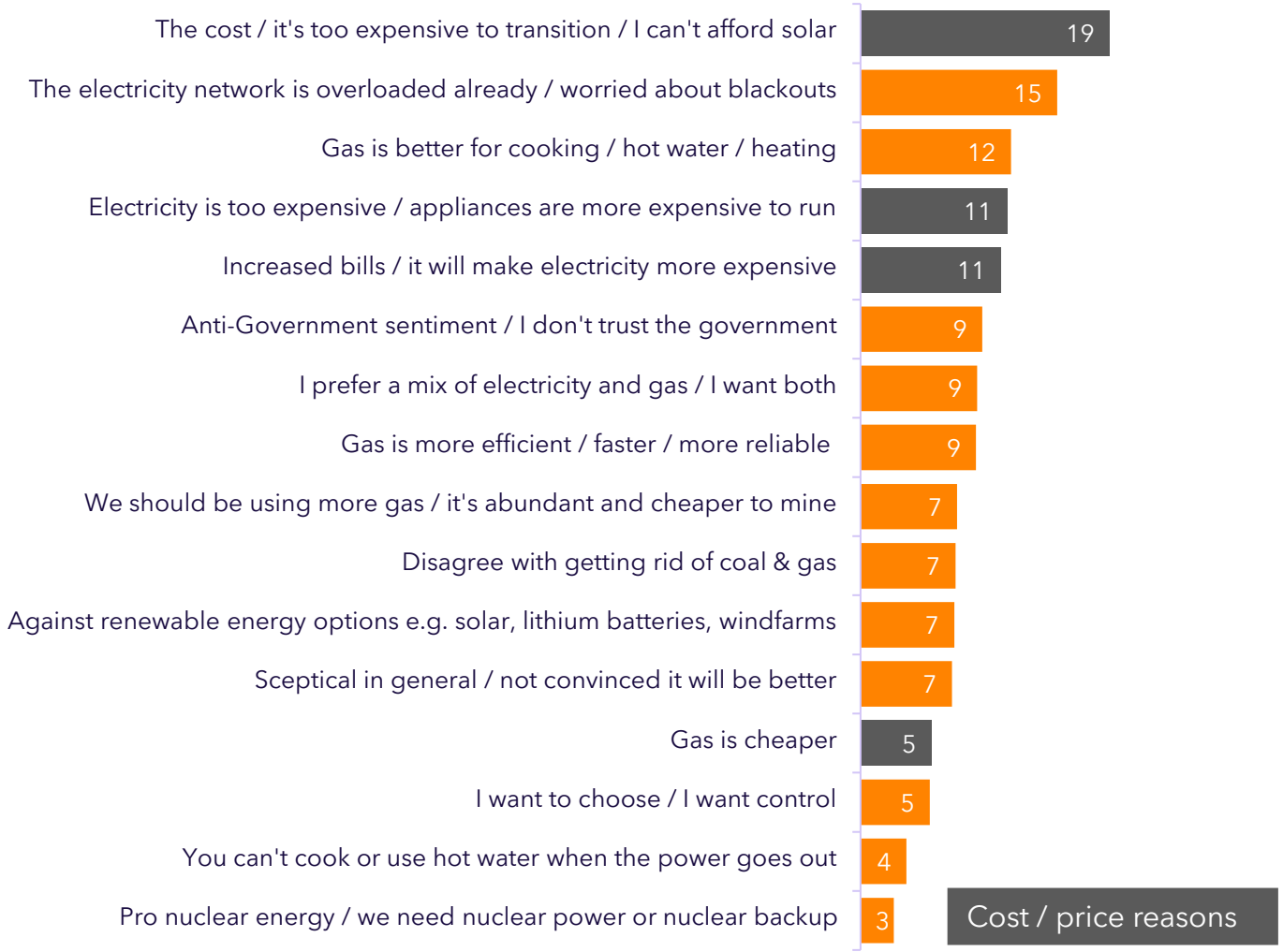
"Electricity is a modern and reliable source of energy in our everyday lives."

Q24B. Why do you feel (insert response from Q24) about the move to "electrify" more Australian homes?
Base: Those who feel positive about the move to "electrify" more Australian homes (n=1,080)
Responses <3% not shown

Reasons for feeling negative about electrifying more homes

Around two in five (43%) of those who felt negative towards the move cited cost concerns. Key specific negatives included a belief that the electricity network is already overloaded, that gas is better for cooking, heating and hot water, that it is more efficient or that they want the choice of both gas and electricity.

Reasons for negative reactions – Unprompted (coded % among those who were negative)



"Electricity bills will go up. Solar on residential is not worth it. The buy back price is too low for it to be worth it."

"Gas is a more efficient and a better-quality cooking system. I do not like government reducing choice and making everybody the same."

"Let people choose whether they have electric, gas or some other option without penalty."

"Gas is a relative clean energy. In Europe gas is now considered as a renewable energy."

Q24B. Why do you feel (insert response from Q24) about the move to "electrify" more Australian homes?
Base: Those who feel negative about the move to "electrify" more Australian homes (n=247)
Responses <3% not shown

Current use and consideration of solar and home batteries

Around a third (30%) indicated they already have rooftop solar panels and a further 27% are currently considering it. Less than one in ten (7%) have a battery system although 31% are considering getting one. Half of Australian households also have a main gas connection (50%).

Current use (%)

	Currently researching options for buying this technology (%)	Currently considering buying this technology but not actively researching it (%)	Not currently researching or considering buying this technology (%)
30% Have **rooftop solar panels**	11	16	43
7% Have a **battery system**	12	19	62
50% Have a **mains gas connection**			

***Younger people aged under 35** are more likely consider buying these technologies, and **older people aged 65+** are likely to not consider it - see additional demographic breakdowns in Appendix 2

	Larger states					Gender		Age			
	SA	NSW	VIC	QLD	WA	Men	Women	18-34	35-49	50-64	65+
Already have **rooftop solar panels** (%)	42 ↑	24 ↓	29	36 ↑	31	29	31	27	28	32	34
Already have a **battery system** (%)	8	6	9	8	3	8	6	11 ↑	5	7	3 ↓
Currently have a **mains gas connection** (%)	63 ↑	46	78 ↑	22 ↓	58	52 ↑	47	57 ↑	52	47	39 ↓

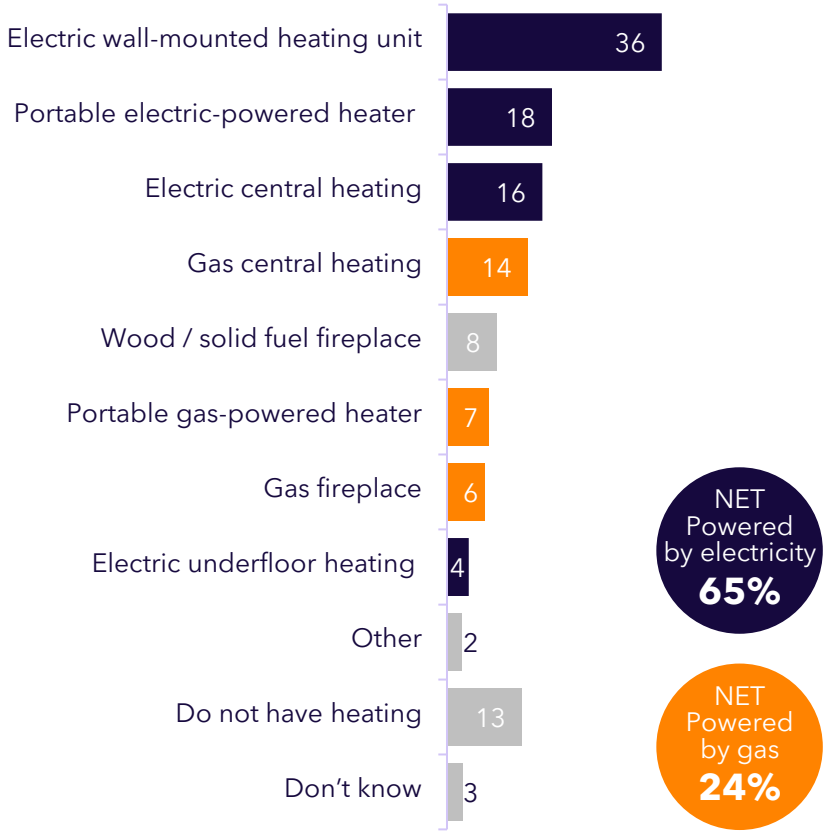
Q15. Does your home have, or are you considering, any of the following features?
Q14. And is your home connected to gas (regardless of whether you use it or not)?
Base: All participants (n=1,954; SA: n=836; NSW: n=424; VIC: n=275; QLD: n=241; WA: n=100; Men: n=966; Women: n=988; 18-34: n=566; 35-49: n=542; 50-64: n=443; 65+: n=403)

↑ Significantly higher than those not in the group @ 95%
↓ Significantly lower than those not in the group @ 95%

How Australians are currently heating and cooling their homes

Electric wall-mounted units are the most used systems for both heating and cooling. Around a quarter of home are being heated by gas with another 8% using a wood or solid fuel fireplace.

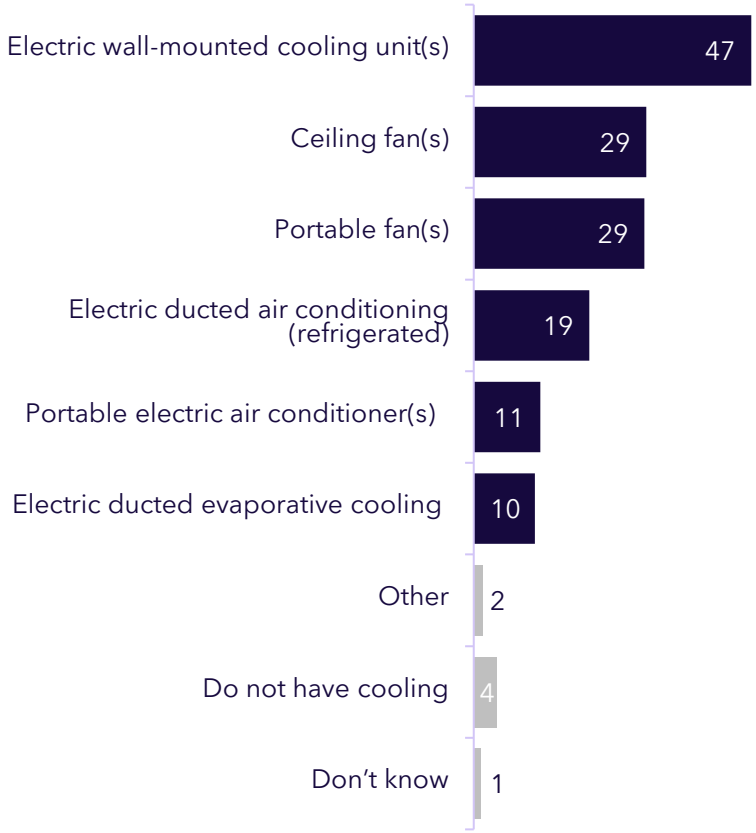
For heating home (%)



NET Powered by electricity **65%**

NET Powered by gas **24%**

For cooling home (%)



Powered by electricity
Powered by gas
Other / Don't have it / Don't know

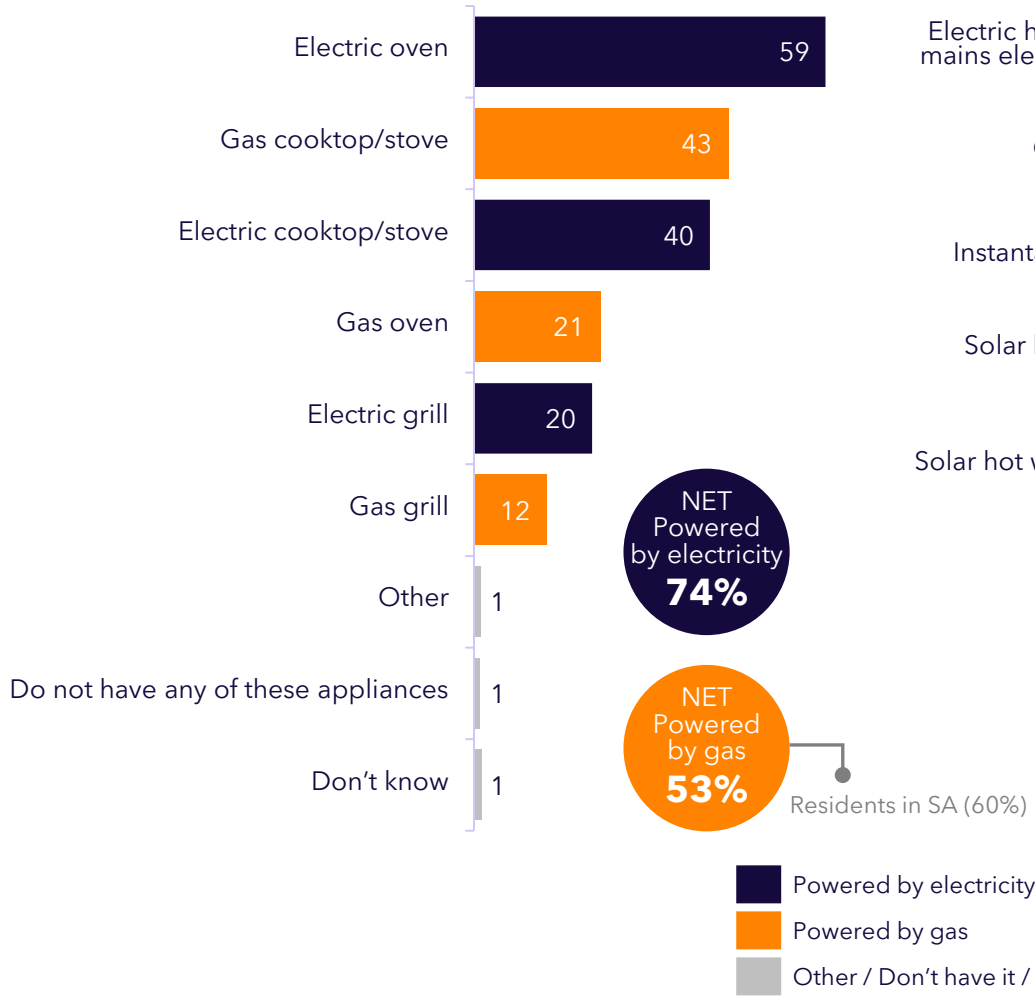
See Appendix 2 for additional demographic breakdowns.

Q16. How do you currently heat your home?
Q17. How do you currently cool your home?
Base: All participants (n=1,954)

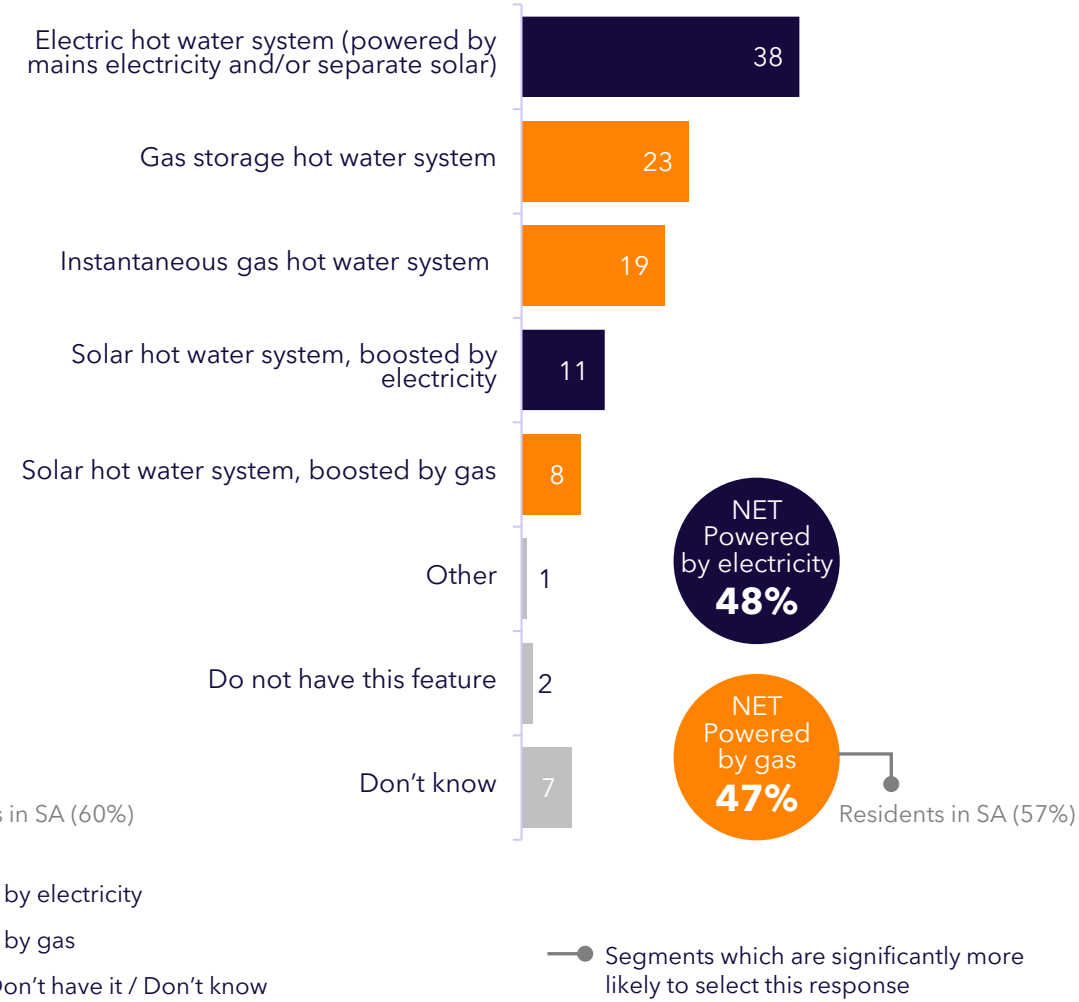
How Australians are currently cooking, and heating their water

Around half of Australian homes have a gas cooking appliance of some sort and gas cooktops are currently more common than electric ones. When it comes to heating water there is a fairly even mix of gas and electric systems being used.

For cooking (%)



For hot water service (%)



Powered by electricity
Powered by gas
Other / Don't have it / Don't know

Segments which are significantly more likely to select this response

Q18. What type of ovens, cooktops or grills do you have in your home (excluding BBQs or outdoor cookers)?
Q19. What type of hot water system do you have at your home?
Base: All participants (n=1,954)

Consumer preferences for household fuels

Fuel preferences for heating and hot water

The majority of Australians would prefer an electric system if they needed to replace their home heating or hot water appliances. The biggest opportunity lies with converting gas hot water users since 47% currently use gas for their hot water, but only 32% would prefer gas if they needed to replace their current system.

For heating

	All Australians		Among households with mains gas connection	
	Preferred source of energy*	**Current source of energy^**	**Preferred source of energy***	**Current source of energy^**
Electricity	**58%** prefer electricity	**65%** use electricity	**53%** prefer electricity	**66%** use electricity
	22% : No preference / other	**26%** : Other / none / don't know	**19%** : No preference / other	**16%** : Other / none / don't know
Gas	**20%** prefer gas	**24%** use gas	**28%** prefer gas	**40%** use gas

For hot water

	All Australians		Among households with mains gas connection	
	Preferred source of energy*	**Current source of energy^**	**Preferred source of energy***	**Current source of energy^**
Electricity	**54%** prefer electricity	**48%** use electricity	**44%** prefer electricity	**25%** use electricity
	14% : No preference / other	**9%** : Other / none / don't know	**13%** : No preference / other	**6%** : Other / none / don't know
Gas	**32%** prefer gas	**47%** use gas	**44%** prefer gas	**74%** use gas

% excluding 'Not relevant for me'

^Mutually inclusive

Q21. Imagine that the main appliances/systems you use for home heating, cooling, cooking and hot water broke within the next year and needed to be completely replaced. What would be your preferred source of energy for the replacement appliances/system you choose?
Q16. How do you currently heat your home?
Q19. What type of hot water system do you have at your home?
Base: All participants (n=1,954); Households with mains gas connection (n=1,072)

Fuel preferences for ovens and cooktops

There is a clear preference for electric ovens over gas ones. However, for cooktops, there is a more even split between those who prefer electricity (46%) or gas (43%). Converting people from gas to electric cooktops may potentially be more challenging (although installation may be relatively easy vs other appliances).

For ovens

	All Australians		Among households with mains gas connection	
	Preferred source of energy*	**Current source of energy^**	**Preferred source of energy***	**Current source of energy^**
Electricity	**63%** prefer electricity	**59%** use electricity	**58%** prefer electricity	**53%** use electricity
	11% : No preference / other	**22%** : Other / none / don't know	**10%** : No preference / other	**19%** : Other / none / don't know
Gas	**25%** prefer gas	**21%** use gas	**32%** prefer gas	**33%** use gas

For cooktops

	All Australians		Among households with mains gas connection	
	Preferred source of energy*	**Current source of energy^**	**Preferred source of energy***	**Current source of energy^**
Electricity	**46%** prefer electricity	**40%** use electricity	**33%** prefer electricity	**19%** use electricity
	11% : No preference / other	**20%** : Other / none / don't know	**10%** : No preference / other	**18%** : Other / none / don't know
Gas	**43%** prefer gas	**43%** use gas	**56%** prefer gas	**66%** use gas

*% excluding 'Not relevant for me'

^Mutually inclusive

Q21. Imagine that the main appliances/systems you use for home heating, cooling, cooking and hot water broke within the next year and needed to be completely replaced. What would be your preferred source of energy for the replacement appliances/system you choose?
Q18. What type of ovens, cooktops or grills do you have in your home (excluding BBQs or outdoor cookers)?
Base: All participants (n=1,954); Households with mains gas connection (n=1,072)

Reasons for preferring electric power for household appliances

Across the four appliance categories, the main reasons for preferring electricity were typically: not having a gas connection, being more energy efficient, being better for the environment, that it's what they currently use, being safer and that it can be powered by solar. Comfort was also a key reason for preferring electricity for home heating.

Reasons for preferring electricity power (% selecting each) **Figures in bold text are **top 5 reasons** for each appliance*	**For heating homes** (n=329)	**For hot water service** (n=272)	**For oven** (n=407)	**For cooktop** (n=259)
My home isn't connected to gas	**24**	**31**	**25**	**32**
It's more energy efficient	**25**	**32**	**27**	**23**
It's better for the environment	22	**28**	**19**	**27**
I currently use electricity and it would be too much effort to change	**25**	**24**	**27**	20
It will let me use the solar power from my home system	**26**	**22**	19	**23**
It's a safer option for my home	20	19	**23**	**28**
To reduce my carbon footprint	18	21	16	22
It's a healthier option for my home	19	18	16	18
Because gas prices are too high	19	19	16	16
Eventually everyone will need to change to electricity	18	17	16	18
It's a more comfortable option for my home	**23**	12	17	14
It's too expensive for me to switch to gas or something different	13	13	16	18
It has lower ongoing running costs than other alternatives	18	11	12	12
It performs better than gas and other alternatives i.e. quicker, more convenient	11	10	17	11
It's more modern	12	10	14	13
The purchase cost is cheaper than other alternatives	10	12	10	11
To keep up with the latest technology	8	12	9	7
To add market value to my home	7	10	8	9
Because gas is in short supply	6	7	7	7
I'd rather not use electricity but it's too inconvenient for me to switch to gas or something different	5	9	3	5
Another reason	3	4	5	3

Q22. Why would you prefer electric power for (insert appliance category) if you had to install a new appliance/system for this?
Base: Homeowners who prefer electricity for source of energy for any of four appliance categories (n=259-407)

Reasons for preferring gas power for household appliances

The top reasons for choosing gas power were typically that: they currently use gas, and it would be too much effort to change or a belief it's more energy efficient or performs better than other alternatives. Price and comfort is important for heating while the inconvenience of switching is another important factor for hot water.

Reasons for preferring gas power (% selecting each) **Figures in bold text are **top 5 reasons** for each appliance*	**For heating homes** (n=101)	**For hot water service** (n=201)	**For oven** (n=108)	**For cooktop** (n=287)
I currently use gas and it would be too much effort to change	**39**	**38**	**24**	**29**
It's more energy efficient	**39**	**32**	**36**	**21**
It performs better than electricity and other alternatives	**19**	**24**	**40**	**35**
Because electricity prices are too high	**26**	**21**	14	**15**
It's a more comfortable option for my home	**28**	13	11	**16**
It has lower ongoing running costs than other alternatives	14	16	**19**	12
The purchase cost is cheaper than other alternatives	12	16	**19**	12
To reduce my carbon footprint	13	10	16	10
I'd rather not use gas but it's too inconvenient for me to switch to electricity	15	**19**	5	7
To add market value to my home	9	9	13	8
I'd rather not use gas but it's too expensive for me to switch to electricity	9	12	10	6
It's more modern	10	6	10	11
It's a healthier option for my home	8	9	10	10
It's a safer option for my home	4	9	8	9
It's better for the environment	3	8	8	8
To keep up with the latest technology	4	6	8	7
Another reason	0	7	7	6

Q23. Why would you prefer gas power for (insert appliance category) if you had to install a new appliance/system for this?
Base: Homeowners who prefer gas for source of energy for any of four appliance categories (n=101-287)

Attitudes to Home Energy Management Systems and retailer appliance control

Information provided to participants about Home Energy Management Systems

We would like to know how interested you would be in installing the following technology that can help people manage their home energy use and save money without impacting the functionality or availability of their appliances?

"Basic timers" installed on individual equipment such as electric hot-water systems, pool pumps and other appliances to shift more electricity use to low-cost off-peak times (the upfront cost would be between $100-$200 and the estimated savings per year for the household would be $150-$250)

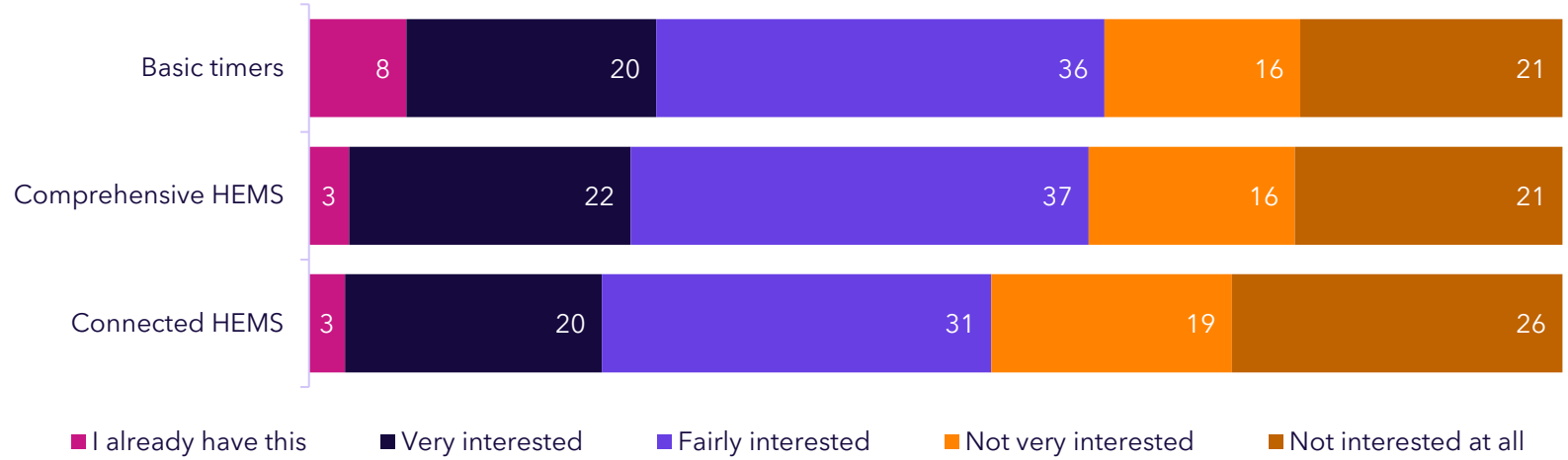
"Comprehensive home energy management systems" that monitors energy use across the home and adjusts appliances in real time to run at the time of day when energy is cheapest (off-peak) (the upfront cost would be around $500 and the estimated savings per year for the household would be $300-$400)

"Connected home energy management systems". These provide all the benefits of "comprehensive" systems and allows your electricity retailer to control your appliances remotely. This allows households to automatically take advantage of offers from your electricity retailer to reduce your energy use during high-demand periods and save more money (the upfront cost would be around $750 and the estimated savings per year for the household would be $500-$600)

Current uptake and interest in three levels of HEMS

Uptake of HEMS is relatively low although interest levels are fairly high with over half "very" or "fairly interested" in all three types of HEMS.

Level of interest in installing HEMS* (%)



	Have it + fairly or very interested	Not very + not interested at all
Basic timers	63	37
Comprehensive HEMS	62	38
Connected HEMS	54	46

	Large states					Gender		Age			
Have it + fairly or very interested (%)	SA	NSW	VIC	QLD	WA	Men	Women	18-34	35-49	50-64	65+
Basic timers	62	66	63	61	65	64	63	79 ↑	67	56 ↓	47 ↓
Comprehensive HEMS	62	64	61	58	67	61	64	79 ↑	67	54 ↓	43 ↓
Connected HEMS	53	57	57	50	55	55	54	75 ↑	59	43 ↓	34 ↓

Q26. Next we would like to know how interested you would be in installing the following technology that can help people manage their home energy use and save money without impacting the functionality or availability
Base: All participants (n=1,954; SA: n=836; NSW: n=424; VIC: n=275; QLD: n=241; WA: n=100; Men: n=966; Women: n=988; 18-34: n=566; 35-49: n=542; 50-64: n=443; 65+: n=403)

↑ Significantly higher than those not in the group @ 95%
↓ Significantly lower than those not in the group @ 95%

Information shown to participants about retailer appliance control

Some Australians with connected home energy management systems allow their electricity retailer to have some control of their appliances during high-demand times in return for additional savings on their electricity bills. This reduces the pressure on the network during peak times and avoids the need for additional spending to upgrade the network, and results in cheaper energy bills for all customers.

How interested would you be in providing some control of your energy use to an electricity retailer in return for additional savings on your electricity bill for each of the scenarios below?

Solar panels - reducing the amount you can export back to the grid when demand is low i.e. to not overload the grid

Home battery system - controlling when you can charge the battery during peak-times i.e. so that the excess energy can go back into the grid when it's needed the most

Pool / spa pump - setting it to run during off peak times

Heating and cooling - adjusting the temperature settings by 1-2 degrees during peak times

Electric Vehicle charger - adjusting the time the car is charging to off peak times

Dishwasher - setting it to run during off peak times

Washing machine - setting it to run during off peak times

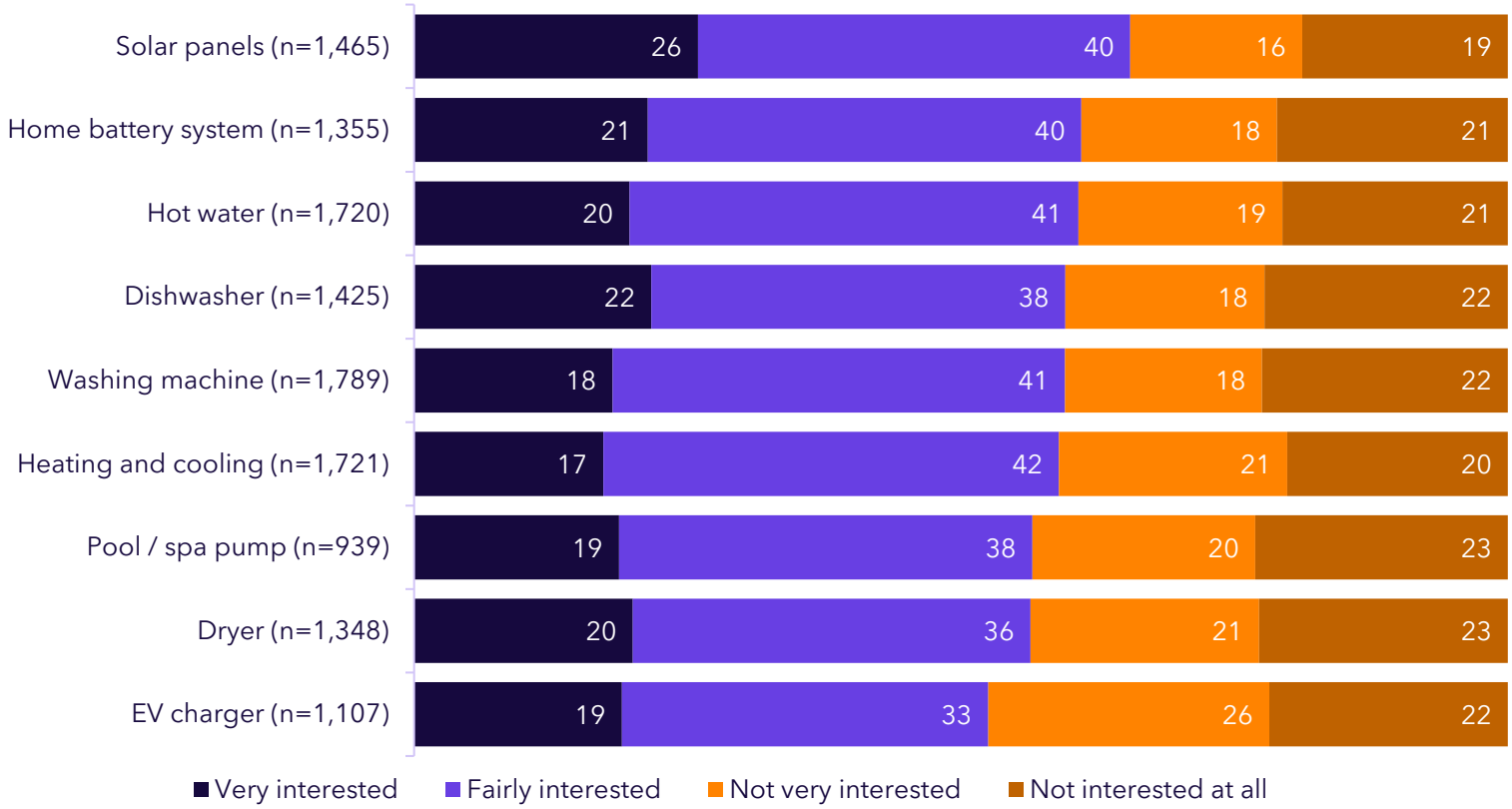
Dryer - setting it to run during off peak times

Hot water – setting it to run during off peak times

In-principle interest in provide control over various appliances

Among those who thought that it could be applicable to them, at least half were fairly or very interested in providing some control over their appliances in return for savings on their electricity bill. Notably, interest was highest for solar panels (65%), followed by home battery systems (61%), hot water (61%), dishwasher (60%) and washing machines (60%).

Level of interest in providing some control to an electricity retailer * (%)



	Fairly + very interested (NET %)	Not very + at all interested (NET %)
Solar panels (n=1,465)	65	35
Home battery system (n=1,355)	61	39
Hot water (n=1,720)	61	39
Dishwasher (n=1,425)	60	40
Washing machine (n=1,789)	60	40
Heating and cooling (n=1,721)	59	41
Pool / spa pump (n=939)	57	43
Dryer (n=1,348)	56	44
EV charger (n=1,107)	52	48

- Interest in providing **control over their EV charger** was significantly higher among those who already have one (80%). Similarly, those who already have **a home battery system** were significantly more interested in handing over control of it (71%).

Q27. How interested would you be in providing some control of your energy use to an electricity retailer in return for additional savings on your electricity bill for each of the scenarios below?
Base: All participants excluding those who selected 'not applicable': sample sizes shown in chart above
** Full descriptions of the various scenarios are shown in Appendix 1.*

Appendix 1:
Profiling of Key Questions

Current usage of solar, batteries and gas – By key demographics

Younger people aged under 35 are significantly more likely to be open to consider buying the rooftop solar panels and a battery system, men are more actively researching about these technologies.

		By state			By gender		By age			
Rooftop solar panels (%)	**Total** (n=1,954)	**SA** (n=836)	**NSW** (n=424)	**Other states** (n=694)	**Males** (n=966)	**Females** (n=988)	**18-34** (n=566)	**35-49** (n=542)	**50-64** (n=443)	**65+** (n=403)
I already have this	30	42↑	24↓	31	29	31	27	28	32	34
I'm currently researching options for buying this technology	11	10	12	11	14↑	8↓	20↑	12	5↓	4↓
I'm currently considering buying this technology but I'm not actively researching it	16	15	14	17	16	16	22↑	15	15	10↓
I'm not currently researching or considering buying this technology	43	33↓	50↑	41↓	41	45	32↓	45	48	52↑

A battery system (%)	**Total** (n=1,954)	**SA** (n=836)	**NSW** (n=424)	**Other states** (n=694)	**Males** (n=966)	**Females** (n=988)	**18-34** (n=566)	**35-49** (n=542)	**50-64** (n=443)	**65+** (n=403)
I already have this	7	8	6	7	8	6	11↑	5	7	3↓
I'm currently researching options for buying this technology	12	12	12	12	16↑	8↓	19↑	14	9	5↓
I'm currently considering buying this technology but I'm not actively researching it	19	22	14↓	22↑	19	19	24↑	20	18	14
I'm not currently researching or considering buying this technology	62	58	67↑	59	57↓	66	47↓	61	67	78↑

A mains gas connection (%)	**Total** (n=1,954)	**SA** (n=836)	**NSW** (n=424)	**Other states** (n=694)	**Males** (n=966)	**Females** (n=988)	**18-34** (n=566)	**35-49** (n=542)	**50-64** (n=443)	**65+** (n=403)
My home has a mains gas connection where gas is delivered by underground pipes.	50	63↑	46	50	52	47	57↑	52	47	39↓
My home is not connected to mains gas, but we have LPG gas delivered in bottles for heating and/or hot water	14	11↓	13	15	14	14	17	11	12	17
My home is not connected to mains gas, and we don't have LPG gas delivered either	30	22↓	35↑	29	29	32	16↓	30	38↑	42↑
Don't know	6	5	5	6	5	7	11↑	7	3↓	2↓

Q15. Does your home have, or are you considering, any of the following features?
Q14. And is your home connected to gas (regardless of whether you use it or not)?
Base: All participants (n=1,954)

↑ Significantly higher than those not in the group @ 95%
↓ Significantly lower than those not in the group @ 95%

Current way of heating and cooling home – By key demographics

For both heating and cooling, electric units are more commonly to be used than gas powered appliances in SA, whereas portable appliances are more popular in NSW.

For heating home (%)	Total (n=1,954)	By state: SA (n=836)	NSW (n=424)	Other states (n=694)	By gender: Male (n=966)	Female (n=988)	By age: 18-34 (n=566)	35-49 (n=542)	50-64 (n=443)	65+ (n=403)	By gas connection: Mains gas (n=1,072)	No mains gas (n=882)
Electric wall mounted heating unit	36	44↑	32	37	33	39	28↓	36	38	45↑	35	37
Portable electric-powered heater	18	14	24↑	15↓	19	16	18	19	18	15	18	18
Electric central heating	16	22↑	15	16	17	16	24↑	17	10↓	10↓	20↑	12↓
Gas central heating	14	13	9↓	16↑	16	12	18↑	15	11	9	24↑	4↓
Wood / solid fuel fireplace	8	10	9	8	9	8	8	7	11	8	5↓	11↑
Portable gas-powered heater	7	3↓	11↑	5↓	7	7	11↑	4↓	5	7	10↑	4↓
Gas fireplace	6	9	5	6	6	6	8	4	5	9	10↑	2↓
Electric underfloor heating	4	2↓	3	4	6↑	1↓	8↑	2	3	0↓	4	3
Other	2	3	3	2	2	3	1	3	3	4	3	2
Do not have heating	13	5↓	14	13	14	12	9	14	16	12	7↓	19↑
Don't know	3	2	2	3	2	3	4	4	2	1	2	4
NET Powered by electricity	65	72↑	66	63	65	64	65	64	62	68	66	64
NET Powered by gas	24	23	23	25	26	23	31↑	21	20	24	40↑	9↓

For cooling home (%)	Total (n=1,954)	SA (n=836)	NSW (n=424)	Other states (n=694)	Male (n=966)	Female (n=988)	18-34 (n=566)	35-49 (n=542)	50-64 (n=443)	65+ (n=403)	Mains gas (n=1,072)	No mains gas (n=882)
Electric wall-mounted cooling unit(s)	47	46	41↓	50↑	44	49	38↓	50	48	52	46	47
Ceiling fan(s)	29	27	28	30	29	29	27	28	30	31	26	32
Portable fan(s)	29	22↓	35↑	26	27	30	31	27	33	23	28	30
Electric ducted air conditioning (refrigerated)	19	25↑	19	19	22	17	28↑	18	15	15	25↑	14↓
Portable electric air conditioner(s)	11	7↓	11	12	11	11	16↑	11	10	7	12	11
Electric ducted evaporative cooling	10	22↑	8	10	10	10	13	10	9	8	14↑	6↓
Other	2	1	1	2	2	2	1	1	1	3	2	2
Do not have cooling	4	2↓	5	3	5	3	2	5	5	4	3	5
Don't know	1	1	1	1	1	1	1	2	1	–	0	2

SECNewgate Research

Q16. How do you currently heat your home?
Q17. How do you currently cool your home?
Base: All participants (n=1,954)

↑ Significantly higher than those not in the group @ 95%
↓ Significantly lower than those not in the group @ 95%

Current appliances used for cooking and hot water – By key demographics

Gas powered cooking appliances are significantly more commonly used in SA, and the usage of solar hot water system regardless of its energy source is significantly lower compared to the other states.

		By state			By gender		By age				By gas connection	
For cooking (%)	**Total** (n=1,954)	**SA** (n=836)	**NSW** (n=424)	**Other states** (n=694)	**Male** (n=966)	**Female** (n=988)	**18-34** (n=566)	**35-49** (n=542)	**50-64** (n=443)	**65+** (n=403)	**Mains gas** (n=1,072)	**No mains gas** (n=882)
Electric oven	59	55	62	58	59	60	48↓	56	69↑	68↑	53↓	65↑
Gas cooktop/stove	43	49↑	40	43	41	44	43	43	41	44	66↑	20↓
Electric cooktop/stove	40	34	41	40	39	40	36	36	44	45	19↓	60↑
Gas oven	21	28↑	18	22	23	20	26↑	22	18	17	33↑	10↓
Electric grill	20	19	20	20	22	18	20	20	20	19	17↓	23↑
Gas grill	12	15	13	12	15	10	16↑	12	8	11	17↑	7↓
Other	1	2	1	1	1	1	1	1	1	1	1	2
Do not have any of these appliances	1	1	1	1	0	1	1	2	0↓	1	0	1
Don't know	1	1	1	2	1	1	3	2	-	1	1	2
NET Powered by electricity	74	68↓	75	74	74	74	68↓	71	82↑	77	63↓	85↑
NET Powered by gas	53	60↑	50	53	53	53	58	55	49	48	80↑	27↓

For hot water service (%)	**Total** (n=1,954)	**SA** (n=836)	**NSW** (n=424)	**Other states** (n=694)	**Male** (n=966)	**Female** (n=988)	**18-34** (n=566)	**35-49** (n=542)	**50-64** (n=443)	**65+** (n=403)	**Mains gas** (n=1,072)	**No mains gas** (n=882)
Electric hot water system (powered by mains electricity and/or separate solar)	38	32	40	37	39	37	35	35	39	43	19↓	56↑
Gas storage hot water system	23	20	21	24	25	20	29↑	24	20	16↓	38↑	8↓
Instantaneous gas hot water system	19	33↑	18	19	21	18	17	20	20	21	30↑	9↓
Solar hot water system, boosted by electricity	11	7↓	12	12	11	12	15	10	9	11	8↓	15↑
Solar hot water system, boosted by gas	8	5↓	6	10↑	8	8	13↑	7	6	4	11↑	5↓
Other	1	0	1	1	1	1	-	1	1	2	0	1
Do not have this feature	2	1	2	1	2	2	1	2	2	1	1	2
Don't know	7	6	8	6	5	9	10	8	6	3↓	4↓	9↑
NET Powered by electricity	48	39↓	50	47	47	48	47	44	48	53	25↓	70↑
NET Powered by gas	47	57↑	42	49	51	44	52	48	45	42	74↑	20↓

Q18. What type of ovens, cooktops or grills do you have in your home (excluding BBQs or outdoor cookers)?
Q19. What type of hot water system do you have at your home?
Base: All participants (n=1,954)

↑ Significantly higher than those not in the group @ 95%
↓ Significantly lower than those not in the group @ 95%

Appendix 2:
Sample profile

Sample profile

STATE	%	n
SA	43	836
NSW	22	424
VIC	14	275
QLD	12	241
WA	5	100
NT	1	25
ACT	1	26
TAS	1	27

GENDER	%	n
Man or male	49	960
Woman or female	51	988
Non-binary	0	5
I use a different term	0	1

AGE	%	n
18-34	29	566
35-49	28	542
50-64	23	443
65+	21	403

EMPLOYMENT STATUS	%	n
Working full time	36	707
Working part time	15	288
Working casually	6	113
Retired	20	395
Self-employed	6	114
Unemployed	10	193
Full time student	3	61
Full time home / parent duties	6	119
Other	2	43

EDUCATIONAL ATTAINMENT	%	n
Postgraduate degree	8	163
Graduate diploma / certificate	9	176
Bachelor degree	22	432
Advanced diploma / diploma	10	205
Technical certificate	15	288
High school	33	651
Primary school	1	21
Other	1	18

Sample profile

HOUSEHOLD DECISION MAKER	%	n
Me, I am the main decision maker	58	1,143
Me, but I share the responsibility with someone else	35	679
Someone else	7	132

HOME TENURE TYPE	%	n
Own (either outright or with a mortgage)	54	1,056
Rent	41	805
Other	5	93

HOUSE TYPE	%	n
Freestanding house	71	1,384
Townhouse or duplex	11	210
Flat or apartment in a low-rise building (up to 4 levels)	11	223
Flat or apartment in a high-rise building (5 levels or more)	4	72
Caravan park	1	19
Retirement village	1	16
Other	2	30

LIVING ARRANGEMENT	%	n
I live alone	19	374
I live with my partner only	29	570
I live with my partner with children/other family members in the household	28	555
I am single with children/other family members in the household	12	232
I live in a share house (i.e. with friends/housemates)	8	160
Other	3	63

NUMBER OF PEOPLE IN HOUSEHOLD	%	n
1 person	23	449
2 people	36	698
3 people	16	307
4 people	14	273
5 people or more	12	227

Sample profile

ELECTRICAL APPLIANCES OWNED AT HOME	%	n
Washing machine	93	1824
Dishwasher	58	1124
Clothes dryer	49	956
Fridge	94	1,840
Standalone freezer	33	653
Swimming pool/spa	12	231
Air purifier/de-humidifier	14	268
Portable fan	55	1,084
Portable heater	31	611
Portable cooling	15	297
Ceiling fans	47	917
None of these	1	16

PERSONAL BACKGROUND / STATUS	%	n
I identify as Aboriginal or Torres Strait Islander	5	91
I prefer to speak a language other than English at home or with close family members	16	318
I have a Centrelink Healthcare card	34	659
I have a Pensioner Concession card	31	612
I receive personal government allowance or benefits (e.g. pension, JobSeeker, Newstart, Youth allowance, Carer payments, Widow allowance)	36	698

HOUSEHOLD INCOME	%	n
Negative or zero income	1	17
$1-$9,999 ($1- $189 per week)	3	61
$10,000-$19,999 ($190-$379 per week)	3	64
$20,000-$29,999 ($380-$579 per week)	9	178
$30,000-$39,999 ($580-$769 per week)	8	149
$40,000-$49,999 ($770-$959 per week)	8	155
$50,000-$59,999 ($960-$1,149 per week)	8	155
$60,000-$79,999 ($1,150-$1,529 per week)	13	252
$80,000-$99,999 ($1,530-$1,919 per week)	10	200
$100,000-$124,999 ($1,920-$2,399 per week)	10	190
$125,000-$149,999 ($2,400-$2,879 per week)	7	141
$150,000-$199,999 ($2,880-$3,839 per week)	8	148
$200,000-$249,999 ($3,840-$4,807 per week)	2	44
$250,000 or more ($4,808 or more per week)	2	36
I'd prefer not to say	6	110
I am not sure	3	54

FINANCIAL SITUATION	%	n
Doing well and feeling comfortable	16	322
Doing OK and making ends meet	45	876
Having some difficulty but just making ends meet	26	510
Having a lot of difficulty making ends meet	13	246

Appendix 3:
Methodology disclosure statement

Australian Polling Council methodology disclosure statement

This research was conducted by SEC Newgate Research on behalf of SA Power Networks and The Australia Institute between 3-17 March 2023.

The target population for the research was a representative sample of the adult residents of SA, NSW and other states.

The research comprised a 15-minute self-complete online survey with n=1,954 participants across Australia.

Online survey participants were sourced via CanvasU – accredited fieldwork provider of professional research panels which draws from a range of opt-in panels and databases. Participation was on a voluntary, opt-in basis.

Weighting was applied to the survey dataset to more accurately reflect the target population, using rim weighting (or raking).

The dataset was weighted to match population data from the Australian Bureau of Statistics' Census 2021 by triple-interlocked age and gender by location.

Weighting efficiency was around 64% for most survey estimates. That is, the effective sample size for most estimates was around 64% of the actual sample size (i.e. n=1,251 for estimates made on the total sample). Using the effective sample size, the maximum margin of error for estimates made on the total sample is approximately +/- 2.8% (at the 95% confidence interval).

The full question wording used in the survey is included within the report. For multiple choice questions and statement grids, the order of response options and statements was randomised to avoid potential order effect.

The research was undertaken in compliance with the Australian Polling Council Code of Conduct which can be viewed at https://www.australianpollingcouncil.com/code-of-conduct.

Contact

SEC Newgate Australia Pty Ltd ABN 38 162 366 056
Level 15, 167 Macquarie Street
Sydney NSW 2000
T +61 2 9232 9500

E: sydney@secnewgate.com.au
W: secnewgate.com.au