Social Policy and Research Centre

Power pain

An investigation of energy stress in Australia

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2022

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Summary

Many people in Australia struggle to afford the energy they need for their wellbeing. This report investigates energy stress in Australia to better understand the scale of the problem, and identifies policy implications for the way forward. We find that over the period 2006 to 2020 around one in five Australian households were in energy stress. Moreover, energy stress is much higher in specific groups such as people with a chronic health issue or disability, renters, low-income workers and people on JobSeeker Payment.

These findings are important in the context of rapidly rising energy prices and acute inflationary pressure. At the same time, Australia is shifting to a decarbonised economy, which provides opportunities to reduce household energy stress, if the right support is provided. During this time of upheaval, acting on the policy implications identified below is critical to ensure positive impacts for all households, particularly those experiencing disadvantage.

Drivers and impacts of energy stress

Our analysis of the policy and research literature suggests important drivers of energy stress include low household income, high energy consumption (linked to needs and/or inefficient homes), and high energy prices.

Energy stress is experienced in various ways and particularly affects households experiencing disadvantage. Impacts include the following: bill payment difficulty, energy rationing with health and social function impacts, and reduced spending on non-energy needs.

Four measures of energy stress

In Australia and internationally, energy stress has been measured in different ways; however, at present there is no widely agreed definition or measure(s), making it difficult to compare energy stress over time and across jurisdictions. Informed by earlier studies, we consider a household to be in energy stress if it meets any of the following:

- **Measure 1 –** Energy expenditure greater than 6% of before-housing disposable income
- **Measure 2 –** Energy expenditure greater than 7% of after-housing income
- **Measure 3 –** Inability to pay bills on time
- **Measure 4 –** Inability to heat the home

This study uses the most recent time series data for these measures, which is drawn from the Household, Income and Labour Dynamics in Australia (HILDA) survey for the period 2006 to 2020.

Because of limited available data the analysis could not directly examine the role of energy consumption (efficiency or need) and price.

Over the period 2006 to 2020 around one in five Australian households were in energy stress

Results: who experiences energy stress?

Key findings from the analysis include:

- **Over the period 2006 to 2020, 18–23% of households in Australia experienced at least one form of energy stress**, as rates on all four measures used remained relatively constant.
- **Low-income households are vulnerable to energy stress**. In addition, those in the lowest 20% by income are more vulnerable to greater shifts in energy stress over time, with their rate of energy stress increasing by up to 8 percentage points over the period, from a low of 40% in 2008 to 48% in 2017.
- The amount of income matters. **Inadequate income support leaves recipients at greater risk of energy stress**. From 2019 to 2020 energy stress for households relying on JobSeeker payments fell by 15 percentage points (to a still significant 43%). This improvement coincided with the temporary, $550 per fortnight Coronavirus Supplement, which almost doubled JobSeeker payments from April to September 2020.

Similarly, income from work matters. Those with limited access to paid work have substantially higher rates of energy stress. Energy stress is lower in households with employment, but having a job is no guarantee against energy stress. Energy stress is lowest for households with at least one full-time worker (14%), and higher for households with part-time work (25%) and unemployed households (36%).

- Renters are particularly vulnerable. **Non-private renters (public and community housing tenants) have the highest rate of energy stress**, with 35% of this group experiencing at least one form of energy stress in 2020, down from a high of 44% in 2015. Private renters also experience relatively high rates of energy stress, with 24% showing at least one measure of energy stress in 2020, down from 30% in 2017. However, energy stress is also experienced by 18% of those who own their homes outright (18%) and 15% of those with mortgages.
- **Energy stress impacts people with chronic health conditions or disability**. In 2020, 27% of households where at least one member has a long-term health condition or disability were in energy stress, compared to 15% for households with no condition.

Households in energy stress in 2020 included

41%

in the lowest 20% of incomes

35%

renting public or community housing

24%

in private rental

27%

where at least one member has a long-term health condition or disability

43%

relying on JobSeeker payments

Policy responses

In Australia, a variety of national and state policies impact energy stress. The study presents a typology of energy-related policies that directly or indirectly address energy stress, particularly for individuals and households experiencing disadvantage. The typology sets out broad intervention categories including:

- consumer-side initiatives that directly engage with consumers (demanders) of energy, including initiatives to reduce energy prices/costs, increase or supplement incomes, reduce energy debt, improve energy efficiency and improve energy information
- energy system initiatives that apply intervention to the wider energy system (supply). These may in turn have impacts on consumers; however, the intervention or obligation is applied to the system. They include initiatives to improve the efficiency of the energy market, increase the supply of renewable energy, reserve gas for domestic use and regulatory interventions.
- The study does not evaluate this range of interventions, and notes that there is limited publicly available information about how effectively these policies work together.

Policy implications

The study suggests policy implications that emerge from the analysis and will be important for equitable energy policy as Australia faces steeply rising energy prices and other cost of living pressures and the imperative to achieve faster decarbonisation. They include:

1. **Measures:** Further work is needed to develop agreed measures of energy stress and undertake ongoing monitoring
2. **Policy review:** Systematic review of existing policies is required to determine their relative effectiveness and efficiency as single or combined responses, and to better understand how to reduce energy stress
3. **Institutions:** There is scope to strengthen Australian institutional arrangements to address energy stress, including by drawing on experience in Europe with the Energy Poverty Observatory and Energy Poverty Advisory Hub.
4. **Policy directions:** There is merit in policy initiatives that target the drivers of energy stress including:
    - **measures to make energy consumption more efficient** – for example enabling all possible households, particularly those on low incomes, to improve their home energy efficiency and install rooftop solar, and introducing minimum energy standards for rental homes. This will reduce upward pressure on energy bills and make homes healthier to live in
    - **measures to reduce energy prices** – for example, support for renewable energy and further reform of retail energy markets
    - **measures to increase incomes** – including improvements to the social safety net and policies to promote improved employment and wage outcomes.

To maximise the potential success of these measures, we should begin by strengthening collaborations between federal and state governments, aiming to benefit households most at risk of poverty and disadvantage.

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Introduction

In Australia, many households struggle to afford the energy they need for their health, wellbeing, and social and economic participation. As well as the direct financial burden, energy affordability challenges can impact quality of life as people live in homes that are too cold in winter or too hot in summer, ration other essentials to pay electricity and gas bills, limit their usage of devices for work and education at home, and/or accrue debts and bad credit histories.

This phenomenon is referred to as energy stress[1] or hardship or, commonly in Europe, energy or fuel poverty. Energy stress has received increased attention in Australia in recent years (ACCC 2018; Thwaites, Faulkner & Mulder 2017; VCOSS 2018; ACOSS & Brotherhood of St Laurence 2018; Awaworyi Churchill & Smyth 2021, 2020; Fry, Farrell & Temple 2022; Simshauser 2021). To date, however, there is no coordinated national approach to understand, measure or address it.

The energy price shocks Australia has experienced in 2022, stemming primarily from coal power plant outages and Russia's invasion of Ukraine, have brought energy affordability into the spotlight; and high, volatile prices may continue (Victorian Government 2022). However, as this study shows, energy stress has been a serious problem for Australian households for many years.

As well as the direct financial burden, energy affordability challenges can impact quality of life.

Energy stress must also be understood in the context of decarbonisation and climate change. As Australia transitions from coal and gas-fired electricity to renewables, households and businesses will need to reduce use of fossil fuels, which creates both opportunities and risks for energy stress. On one hand, households can reduce energy stress by installing decarbonisation technologies such as rooftop solar and energy efficiency upgrades, which can reduce energy costs (AEMC 2021; Graham et al. 2018). More renewable energy in the grid has also been shown to lower energy prices (AEMC 2021) and consequently is likely to reduce energy stress. On the other hand, households facing disadvantage may continue to experience energy stress if decarbonisation is mismanaged—for example if they cannot afford to install efficient appliances or to switch from gas to other sources.

About this paper

This paper seeks to improve our understanding of energy stress and how to address it. After a brief discussion of the drivers and impacts of energy stress in Australia, we examine options for the measurement of energy stress. Using the longitudinal Household, Income, and Labour Dynamics in Australia (HILDA) dataset, we provide quantitative insights into energy stress in Australia over time. Finally, we present a typology of existing national and state policy interventions, and consider some policy implications that emerge from the quantitative results and current policy settings.

1 This report generally uses the term 'energy stress', while acknowledging there is significant crossover between this term and others.

Energy stress – drivers and impacts

Understanding the factors driving energy stress and its impacts on individuals, households and communities can inform improvements in programs and policies to address it. Drivers of energy stress include low incomes, high energy consumption and high energy prices.

Household income

Having lower income contributes to energy stress because households have less money to spend on energy costs or efficiency measures (SACOSS 2020; ACOSS & Brotherhood of St Laurence 2018). Income is in turn affected by factors including employment and unemployment status, income supplements and taxes, and shocks (for example, pandemics and health crises). Real incomes are influenced by inflation: recent increases in inflation rates in Australia (and elsewhere) suggest that real incomes may face pressure for the period ahead.

Household energy consumption

Higher energy consumption increases the risk of energy stress and depends on a range of individual and structural factors.

Housing efficiency

Residents of inefficient dwellings (for example, those with poor insulation, building fabric or appliances) face higher expenditure for heating, cooling, lighting and appliance use. While data is limited, the homes of low-income households (particularly but not exclusively in the rental market) are likely to be less efficient than average (ABS 2012, 2009; Better Renting 2019). This may be due to factors including capital or knowledge barriers, lack of trust in suppliers and transaction costs (or the 'hassle factor' of trying a new type of appliance). Many of these barriers also exist in other households; however, they can be magnified for those on low incomes, who have fewer housing options.

Renters may also face specific barriers as they have less control over upgrades in their dwellings. This may be due to a 'split incentives' problem where landlords have the right but not the incentives to invest in energy efficiency, while renters have the incentives but not the right to make these investments.

Energy needs

Energy needs are determined by factors including household size and age, physical characteristics of the home (location, size, design and quality), economic and employment factors (e.g. working from home), and the age, health and behaviours of household members (Simshauser & Nelson 2014; Azpitarte, Johnson & Sullivan 2015). Energy usage can be higher for people with chronic health issues and disabilities: for example those with certain neurological conditions have an increased need for heating or cooling (Awaworyi Churchill & Smyth 2021).

Energy sources

The range and type of energy sources available to, and in, a home can influence energy stress. For example, a home solar power system can lower a household's usage of grid power and therefore costs, or even make them negative. However, solar systems are less common in rented homes (Mountain & Burns 2021). Electric-only homes (especially if they have solar) are generally cheaper to run than ones with gas appliances (Alternative Technology Association [ATA] 2018).

Household energy prices

Higher energy prices are likely to increase energy stress.

Australian residential energy offers include a fixed daily charge plus charges per unit of energy used. As a result, households' costs are only partly dependent on usage. The total cost is driven by system-wide costs and the household's retail offer:

- System-wide energy costs include the wholesale energy price, the cost of transmission and distribution, environmental charges and retailer margins. In the analysis period, drivers of high energy prices included uncertainty in climate change and energy policy, unplanned closures of coal plants, and high network charges in some jurisdictions (ACCC 2018). Energy costs increased greatly in the decade from 2007, then fell slightly for several years, and have begun increasing again in 2022 (ACCC 2018, 2022).
- Most Australian states/territories have competitive retail markets that enable households to select a retailer and offer, which determines the price they pay.[2] The annual bill difference between the cheapest and dearest offers can be nearly $1000 (AER 2022). However, household capacity to navigate this market to lower costs varies: it is influenced by factors including available time; trust in information provided; language, literacy and numeracy; internet access; and awareness of energy price variability. Low-income households, those with limited internet access and those with limited English proficiency are found to pay above-average prices per unit of energy (Colmar Brunton 2018).

Impacts and experience of energy stress

Energy stress is experienced by households in a range of ways, including payment and debt difficulty, adverse health and social impacts, and reduced spending on non-energy needs.

Bill payment difficulty, debt and disconnection

Difficulty paying energy bills is a common experience of energy stress among households. It can lead to having to negotiate a payment or hardship plan with a retailer, and in some cases to disconnection and debt collection.

Rationing and health and social functioning impacts

Some households experiencing energy stress limit their expenditure by rationing their energy use. This manifests in reduced usage of heating, cooling, cooking, lighting and hot water and can threaten people's health, social functioning and ability to live a dignified life (VCOSS 2017). For example, inadequately heating or cooling a home is associated with respiratory illness, asthma and cardiovascular disease (Braubach, Jacobs & Ormandy 2011; Maidment et al. 2014), while rationing use of computers and phones can have negative consequences for work, study and social lives, particularly since the COVID-19 pandemic.[3] In addition to direct impacts on health, this can lead to increased health care costs for families and taxpayers.

Reduced spending on non-energy needs

High energy spending reduces money available for other goods and services. Households experiencing energy stress may reduce spending on non-energy needs, including basic needs such as food or medicine (Chester 2013; VCOSS 2018). This may in turn contribute to more complex needs in affected households over time as energy stress is combined with other forms of stress (e.g. poor nutrition or health).

2 Jurisdictions with fully competitive retail markets are Vic., NSW, SA and south-east Queensland. ACT and Tasmania have limited competition (a few retailers competing with a government retailer). WA, NT and regional Queensland have no competition for households.

3 Modern computers and smartphones do not use a large amount of energy—it costs only around $2 per year to charge a smartphone daily—but some people ration usage. https://www.redenergy.com.au/living-energy/energy-saving/the-cost-of-charging-your-mobile.

Developing measures of energy stress

In Australia and internationally, energy-related hardship has been labelled and measured in different ways—including energy poverty, energy stress, energy hardship and energy insecurity. At present, there is no widely agreed definition or measure for energy stress.

In Europe, measurement of energy poverty is more advanced than in Australia, yet there is still no agreed measure. Bouzarovski (2020, p. 41) identifies common features of measurement, which include:

1. Expenditure measures – focused on household energy costs against absolute or relative thresholds
2. Consensual assessment – based on self-reported assessments of indoor housing conditions, and the ability to meet certain basic needs relative to the society in which a household resides
3. Direct measurement – where the level of energy services (such as heating) achieved in the home is compared to a set standard.

Previous BSL research

An earlier study of energy stress (presented as fuel poverty) in Australia by BSL (Azpitarte, Johnson & Sullivan 2015) examined five measures including two consensual approaches and three income-expenditure definitions, applied over the period 2005 to 2011.

This study found that the incidence of energy stress remained largely unchanged over the period, and this result was robust to the energy stress definition used. However, the study noted this finding should be treated with caution due to limitations in measures. In particular, different definitions of energy stress identify very different groups of energy-stressed households. For example, defining energy stress as inability to pay bills on time would exclude many households on low incomes with high energy expenditure, and many households who are unable to heat their homes. If used in isolation, none of the definitions tested in the study would adequately cover the diverse households who experience energy stress in Australia.

Measures of energy stress

This study draws on Azpitarte, Johnson and Sullivan (2015) and extends the analysis to 2020 (the most recent data available, with no other updated data sources available from which to develop new estimates). We use four measures: two income and expenditure-based measures, a bill payment measure and a home heating measure.

Data for these measures is drawn from the Household, Income and Labour Dynamics in Australia (HILDA) survey, using household level data from waves 6 to 20, covering the period 2006 to 2020.[4] The years 2010, 2014 and 2018 are excluded from our analysis as not all measures of energy stress were available in these years.

After data cleaning this provided a yearly sample of nearly 7,000 households to 2010 and, after the survey was expanded, nearly 9,000 households from 2011 to 2020.

4 For more information on the HILDA dataset, see Wooden & Watson (2012).

Measure 1

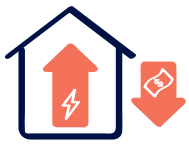
Energy expenditure greater than 6% of (before-housing) disposable income

Income-expenditure measures and thresholds have been widely used for the assessment of energy stress. Across the literature, various before-housing spending thresholds have been adopted: for example, Azpitarte, Johnson and Sullivan (2015) used a threshold of 10% following Boardman in the United Kingdom (1991); in Australia where median energy spending as a proportion of income is lower, the UNSW City Futures Research Centre and Astrolabe Group (2019) used a threshold of 6%; and SACOSS (2020) used 6%.

Drawing on these established approaches, we assume a household is in income-expenditure energy stress if they spend more than 6% of before-housing disposable income on energy (including gas, electricity and other heating fuels). This threshold represents twice the median energy expenditure of the lowest 40% of households by income (bottom two quintiles).[5] This is in line with Hills (2012) who highlighted the need to focus on low-income households in estimating energy stress, and with SACOSS (2020).

Income-expenditure measures and thresholds have been widely used for the assessment of energy stress.

Measure 2



Energy expenditure greater than 7% of after-housing income

Over the past 20 years, rising housing prices have widened the gap between before and after-housing disposable income, with households on the lowest incomes most affected (Wiesel, Ralston & Stone 2020). Focusing on before-housing disposable income is therefore likely to overstate the income available for energy needs in many households.

Accordingly, we also estimated energy stress using after-housing disposable income. Similarly to the before-housing measure we set the threshold at twice the median energy expenditure as a proportion of after-housing disposable income, limiting the sample used to calculate the median to those in the lowest 40% of households, again in line with SACOSS (2020).[6] A household is considered to be in energy stress if their energy expenditure accounts for more than 7% of after-housing disposable income[7]. This measure better captures those in energy stress with high housing costs, particularly younger households and private renters.

Measure 3

Unable to pay bills on time

This indicator denotes a household as in energy stress if at least one individual in the household reported being unable to pay electricity, gas or telephone bills[8] on time due to a shortage of funds. The measure provides no information on whether inability to pay is due to low incomes, inefficient housing or appliances, high energy prices or a combination.

5 Median energy expenditure as a proportion of before-housing disposable income for the lowest 40% of households by equivalised income for all years 2006 to 2020 in our sample was 2.9%, which was doubled then rounded to 6%.

6 Median energy expenditure as a proportion of after-housing disposable income for the lowest 40% of households by equivalised income in our sample was 3.6%, which was doubled then rounded to 7%. This median was estimated using the whole sample from 2006 to 2020.

7 A slightly higher threshold of 8% would apply if we calculated the (after-housing) median using only those in private rental housing or with current mortgages, reflecting the varied burden of housing costs across our sample.

8 The HILDA survey does not ask separately about energy bills.

Measure 4

Unable to heat the home

Our fourth measure identifies households in which an individual reported being unable to heat the home due to a shortage of money. This gives us a limited indication of which households are restricting use, as they are likely to restrict energy use in many ways apart from forgoing heating, especially in warmer regions.

Similarly to measure 3, this measure provides no information on the causes of a household's inability to heat. Some qualitative research suggests 'rationing' is a common strategy used by low-income households to save money (Bowman & Banks 2018; VCOSS 2018). This measure of energy stress was previously used by Azpitarte, Johnson and Sullivan (2015) and Thomson and Snell (2013).

Because none of the four measures alone captures the complexity of energy stress, in this study a household is considered to be in energy stress if it shows up on at least one of our four measures.

Limitations of the measures

While using HILDA data to develop measures of energy stress allowed us to understand trends in energy stress up to 2020, these measures have several limitations, including incomplete coverage of energy stress drivers and regional variations:

1. Incomplete coverage of energy stress drivers – Using HILDA data it is not possible to directly consider important drivers of energy stress identified earlier, particularly energy consumption and price (and subcomponents of these drivers including energy efficiency, or debts and disconnections). For this reason, further data is needed to refine the suite of energy stress measures, ideally including provider data.
2. Regional variations – Measures such as inability to heat homes may be subject to regional variation. Home heating is more critical for household wellbeing in cooler climates. Conversely, home cooling is likely to be more critical in warmer climates, or in most areas during heatwaves as climate change intensifies.
3. HILDA's energy expenditure data is self-reported from memory (not from bills), which may result in errors, particularly underestimates (Watson & Wooden 2012).

In this study a household is considered to be in energy stress if it shows up on at least one of our four measures

Energy stress in Australia – results

Trends in energy stress

Results can be examined using the measures in combination, or individually. Table 3 shows that from 2006 to 2020, rates of energy stress in Australia remained relatively constant across our four measures, with the combined rate fluctuating between 18% in 2008 and 23% in 2011 (the combined rate includes all households experiencing at least one of our four indicators of energy stress). The rate of energy stress in 2020 sat in the middle of this range at 20%.

Inability to pay bills on time was the most common indicator of energy stress in 2020, at 10% of surveyed households. Income-based energy stress was also prevalent, with almost 9% in after-housing energy stress and 7% in before-housing stress. Only 3% of households reported being unable to heat their homes. Importantly, there was limited crossover between these indicators, highlighting the importance of using multiple measures to capture the extent of energy stress in Australia. For example, less than a quarter (23%) of households that reported being unable to heat the home also spent more than 7% of post-housing income on energy.

Table 1 Energy stress rates by measure, 2006 to 2020

Year	Combined stress indicators	Energy expenditure as % of disposable income		Unable to afford	
		>6% of before-housing	>7% of after-housing	Paying bills on time	Heating home
2006	20%	7.4%	8.6%	11.8%	1.8%
2007	20%	6.7%	8.5%	11.4%	2.0%
2008	18%	7.0%	8.3%	9.5%	2.1%
2009	19%	6.4%	8.4%	10.6%	2.1%
2010	–	7.7%	10.2%	–	–
2011	23%	8.3%	10.3%	11.9%	4.0%
2012	22%	8.0%	9.7%	11.9%	3.6%
2013	21%	8.3%	9.9%	11.2%	3.1%
2014	–	8.6%	10.5%	–	–
2015	22%	8.3%	10.2%	11.1%	3.1%
2016	21%	7.8%	10.2%	10.7%	3.0%
2017	22%	9.1%	11.0%	9.9%	3.0%
2018	–	8.4%	10.7%	–	–
2019	20%	7.9%	9.5%	10.1%	3.3%
2020	20%	7.0%	8.5%	10.2%	2.9%

Note: Years 2010, 2014 and 2018 are excluded as no data is available for payment and heating energy stress measures. The combined energy stress indicator combines all four measures so that households in any form of energy stress are counted only once.

Low incomes leave households in energy stress

The overall steady results obscure the shifts in energy stress observed for low-income households. Figure 1 shows that low-income households experienced greater shifts in energy stress. For households in the lowest 20% by income, the rate of energy stress (all indicators) increased by up to 8 percentage points over the period, from a low of 40% in 2008 to 48% in 2017. Similar shifts were observed for households in the bottom 40% by income. In contrast, more affluent households (in the top 60% by income) experienced a smaller, 3 percentage point shift in stress rates.

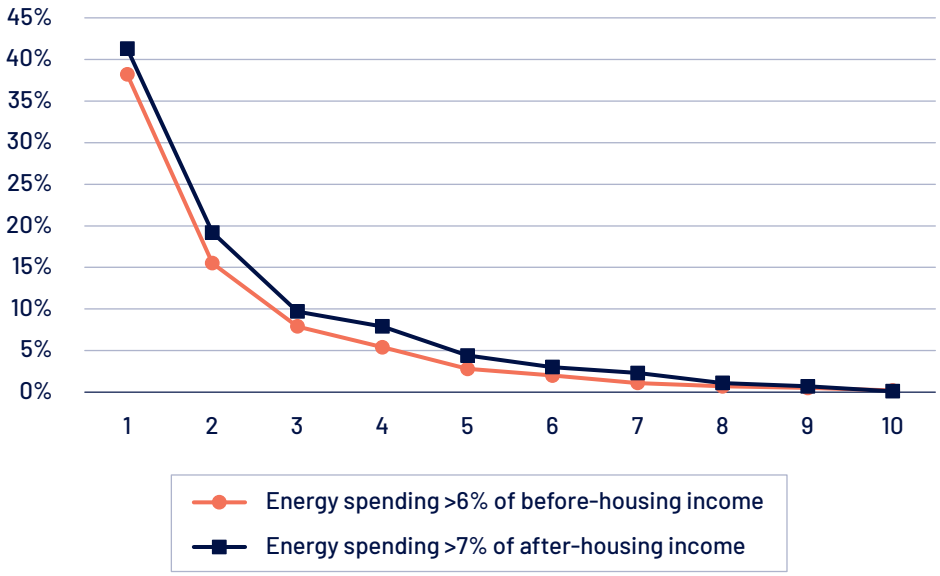
Expenditure data over the same period also suggests that low-income households experienced stronger increases in energy costs than higher-income groups. Between 2006 and 2020, average annual energy expenditure for households in the lowest income quintile rose 22%, from $855 to $1,039. This was substantially higher than the 3% to 14% increases experienced by the higher-income quintiles. This is in line with existing literature which finds that it is more expensive to be poor (Bowman & Banks 2018). The increased expenditure for those on low incomes could be due to a number of factors, including that they are more likely to have old and inefficient appliances and live in less insulated and efficient homes (ABS 2009, 2012), they are more likely to pay higher prices per unit of energy (Colmar Brunton 2018), and they may have higher energy needs associated with an overrepresentation of people with a disability (Australian Institute of Health and Welfare 2020). Overall, this suggests that low-income households are more vulnerable to energy price shifts, which is consistent with the identification of low income as an important driver of energy stress.

In addition to energy stress rates being more volatile for low-income households, we find they are correlated with household income. This is in line with studies over the past decade (SACOSS 2020; ACOSS & Brotherhood of St Laurence 2018; Azpitarte, Johnson & Sullivan 2015). Figure 2 (next page) shows that, based on both before and after-housing measures, energy stress increases strongly as income falls.

Figure 1 Percentage of Australian households with one or more indicator of energy stress by income group, 2006 to 2020

Note: Years 2010, 2014 and 2018 are excluded as no data is available for payment and heating energy stress measures.

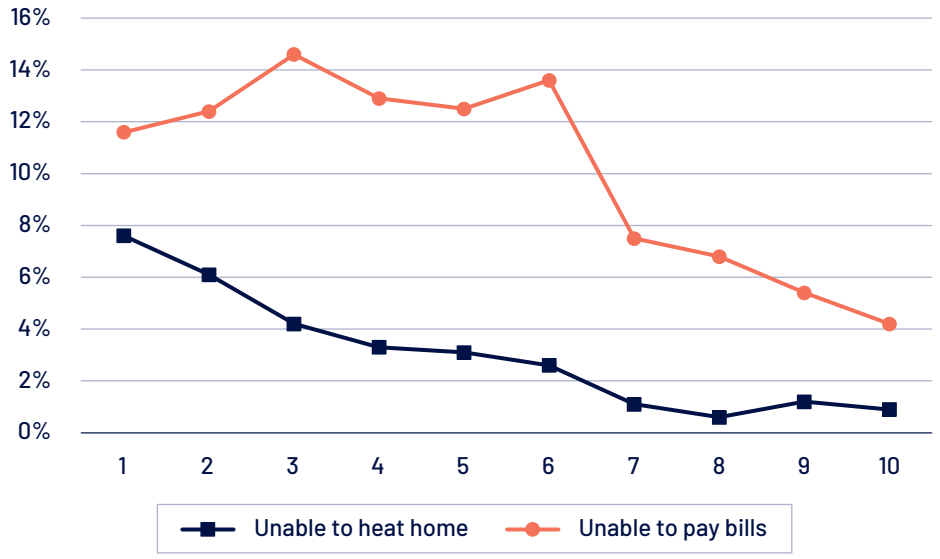
Figure 2 **Income-based energy stress rates (before and after housing) by income decile, combined 2019 and 2020 data**



Note: Equivalised household income, adjusted to December 2020 prices, is used to estimate income deciles.

Figure 3 shows that forgoing heating is also more common for those on low incomes. Almost 1 in 10 (8%) of households in the lowest income decile reported going without heating due to a lack of funds in 2019–20, compared to around 1% in the top four deciles. Inability to pay electricity, gas or telephone bills on time is also common in low-income households. In the lowest two income deciles, around 12% of households were unable to pay bills on time, compared to 4% in the top decile. Unlike the other measures of energy stress, however, inability to pay bills on time remains relatively high up to the sixth decile, with between 12% and 15% of households unable to pay. This finding aligns with previous work on energy hardship (Simshauser & Nelson 2014).

Figure 3 **Consensual energy stress rates by income decile, combined 2019 and 2020 data**



Note: Equivalised household income, adjusted to December 2020 prices, is used to estimate income deciles.

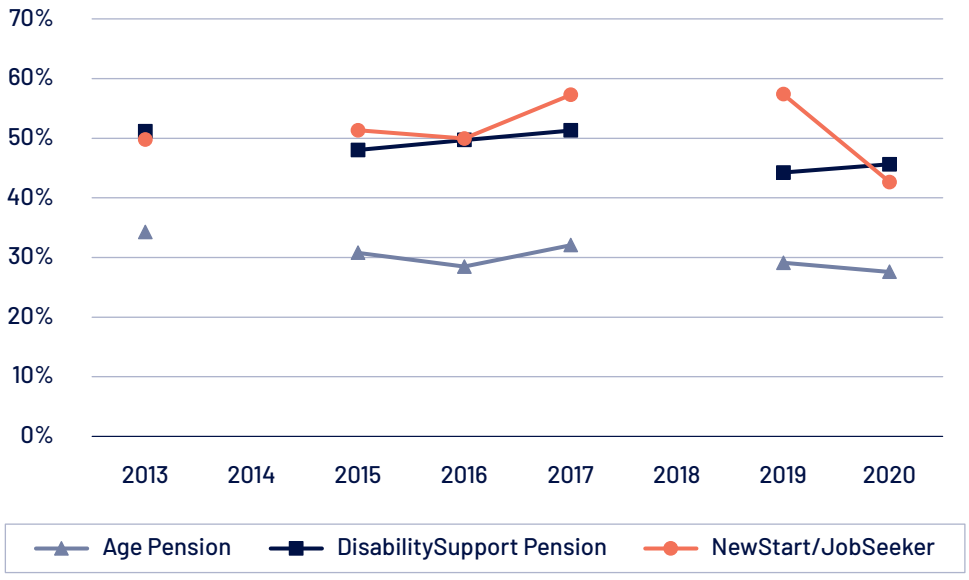
Inadequate income support leaves recipients in stress

Households relying on income support payments face higher rates of energy stress. Figure 4 shows that from 2013 to 2019 at least half of all households relying on Newstart/JobSeeker[9] as their main source of income were in energy stress, peaking at 57% in 2019. These high stress rates are unsurprising given that an estimated 88% of households reliant on JobSeeker/Newstart were living in poverty in April 2021 (Phillips & Narayanan 2021). Moreover, before 2020, the rate of this payment had not risen in real terms since 1994 (Thornton, Bowman & Mallett 2020), resulting in increasingly inadequate incomes (Senate Community Affairs References Committee 2020).

Despite these challenges, in 2020 energy stress among households relying on JobSeeker payments fell by 15 percentage points (to a still substantial 43%). This improvement coincided with the temporary, $550 per fortnight Coronavirus Supplement, which almost doubled JobSeeker payments from April to September 2020. The partner income threshold and taper rate were also raised, and the liquid assets waiting period was suspended, expanding eligibility (Department of Social Services [DSS] 2021).

This finding highlights the importance of adequate income support payments to allow everyone to live with dignity and meet basic needs. For example, the proportion of JobSeeker households who reported being unable to heat their home fell from 16% in 2019 to 11% in 2020, probably reducing risks to health and wellbeing.

Figure 4 Energy stress (all forms) by payment type, 2013 to 2020



Notes: Sample for JobSeeker/Newstart households is relatively low (between 133 and 177 households in our sample from 2013 to 2020. Years prior to 2013 were excluded due to yearly sample sizes under 100. Households were identified by their main source of income in a financial year. This is likely to exclude some households who had multiple income streams or were on payments for only part of the year. No data was available on consensual measures of stress for 2014 and 2018.

9 In March 2020, the JobSeeker Payment replaced Newstart Allowance (the main working age payment). Our sample includes households whose main source of income was Newstart or JobSeeker.

Energy stress among households whose main source of income was the Disability Support Pension (DSP) was slightly lower at 46% in 2020, down from a high of 51% in 2017. Age pensioners had lower rates of energy stress than other social security recipients, with a still substantial 28% in energy stress. The lower growth in energy stress for these two groups may be due to the more generous indexation arrangements for pensions.[10]

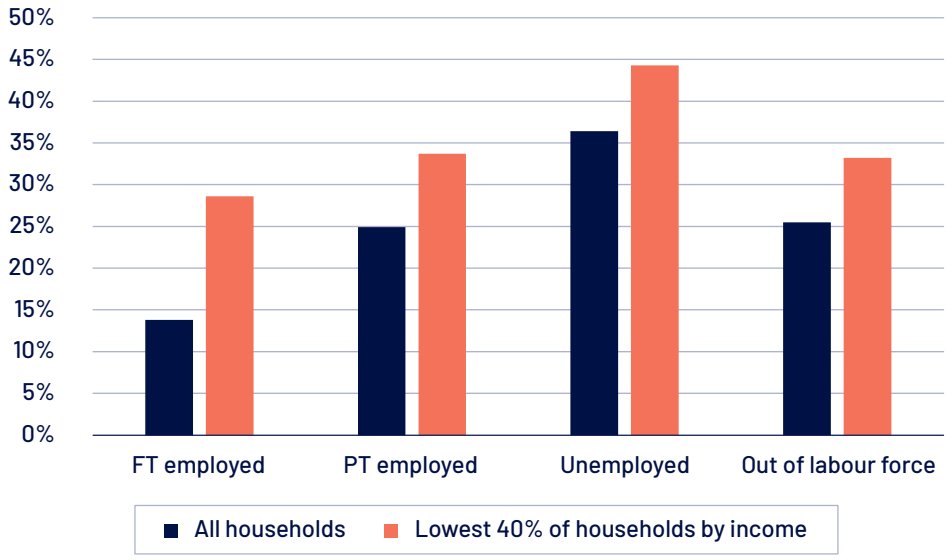
The high rates of energy stress among income support recipients, particularly inability to heat the home, highlight the impact on vulnerable groups. DSP recipients are likely to face additional risks from forgoing heating or cooling, yet 14% of recipients reported being unable to heat their home in 2020—almost 5 times the national average. Age Pension recipients may also have complex health needs which could be exacerbated by forgoing heating, which around 4% of age pensioners did in 2020.

Those with limited access to (full-time) work have substantially higher rates of energy stress

Energy stress is lower in households with employment, but having a job is no guarantee against energy stress, as shown in Figure 5. Energy stress is lowest among households with full-time work[11], at just 14%. However, this figure doubles to 29% among households with full-time work in the lowest 40% by income.

Energy stress rates are higher for households with part-time work, with 25% of households in this group estimated to have at least one indicator of energy stress, roughly the same rate as among households out of the labour force. For part-time work households in the lowest 40% by income, the rate of energy stress increases to 34%. This is slightly lower than the 36% of all unemployed households in energy stress.

Figure 5 Energy stress (all forms) by labour force status and income level, combined 2019 and 2020 data



Note: Where responding person data is missing, we substitute data on whether a household has anyone in full-time work, part-time work, unemployment or outside the labour market.

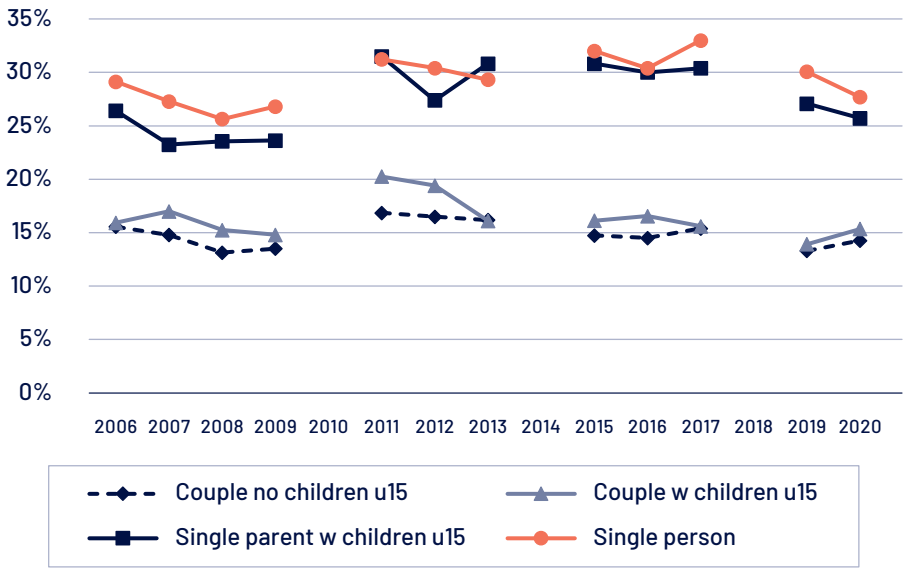
10 Pensions, including age and disability support, are indexed using the Pensioner and Beneficiary Living Cost Index (PBLCI) introduced in 2009, which takes into account different consumption patterns for those relying on pensions. Pensions are also benchmarked against wages (male total average weekly earnings) to ensure they remain in line with community living standards (Klapdor 2020) whereas JobSeeker payments are indexed by CPI.

11 Household employment status information in the HILDA survey is provided by one person in the household on behalf of the others.

As employment has become less secure over the past three decades, with more individuals working part-time and increased underemployment (ABS 2021), many people have unpredictable incomes (Bowman & Banks 2018). Combined with continued low wage growth (ABS 2022), this means more working households are likely to get into energy stress. Importantly, many low-income households with work are likely to be ineligible for existing concession schemes.

Energy stress in households with children is particularly concerning. Households with children tend to have higher energy consumption. This is harder to manage for many single parents, who often have lower incomes due to the need to balance care and work responsibilities. Around 40% of single parent households in our sample reported being out of the labour market or unemployed and a further 19% worked part-time. These factors resulted in 26% of single parent households in some form of energy stress in 2020, compared to just 15% of couple-with-children families.

Figure 6 Energy stress (all forms) by family type 2006 to 2020



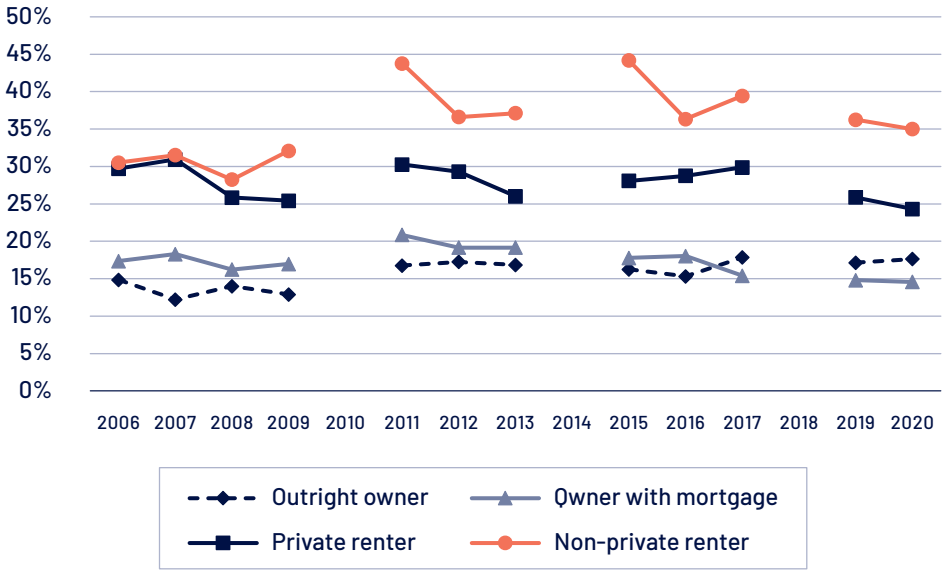
Note: No data is available on consensual measures of stress for 2010, 2014 and 2018.

Renters are more likely to be in energy stress

Renters experience higher rates of energy stress than home owners. Figure 7 shows that non-private renters (public and community housing tenants) have the highest rates of energy stress, with 35% experiencing at least one form of energy stress in 2020, down from a high of 44% in 2015. Moreover, 1 in 10 in this group report being unable to heat their homes. Private renters also experience elevated rates of energy stress (24% in 2020, down from 30% in 2017). These rates are substantially higher than for people who own their homes outright (18%) and owners with mortgages (15%), but these figures still show notable levels of energy stress.

While many factors are likely to influence differences in stress outcomes between renters and owners—including different life stages, incomes and housing costs—less efficient rental housing is likely to be a key contributor. Rental properties are typically less efficient than owner-occupied properties and less likely to have rooftop solar (ABS 2012, 2009). For example, in 2018, only 4% of rental properties had rooftop solar compared to 29% of owner-occupied properties (Browne & Schultz-Byard 2021). A recent study identified 8% higher energy costs for rental households than non-rental households, when controlling for other significant variables (Best & Burke 2022). This is in part due to the poor incentives for landlords to invest in efficiency or renewable energy, which would primarily benefit tenants (Gabriel et al. 2010; Liu & Judd 2018).

Figure 7 Energy stress (all forms) by tenure type, 2006 to 2020



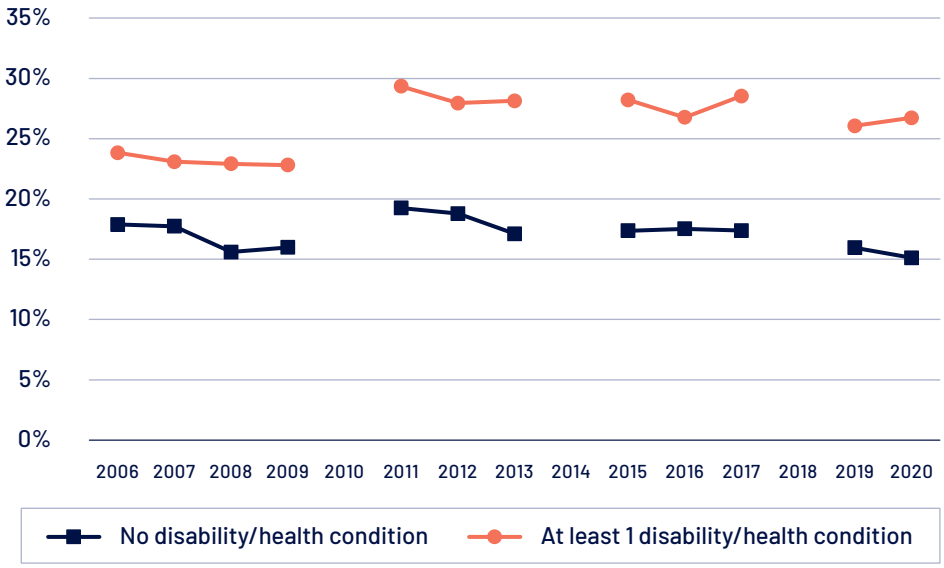
Note: Years 2010, 2014 and 2018 are excluded as no data is available for consensual energy stress measures.

Energy stress impacts people with chronic health conditions or disability

Households with at least one member who has a long-term health condition or disability are vulnerable to energy stress. Figure 8 shows that in 2020, 27% of households with a long-term health condition or disability were in energy stress compared to 15% of households with no condition.

People with health conditions or disability face increased barriers to employment, making them less likely to be in work (Australian Institute of Health and Welfare 2009, 2020). This reduces average household incomes and makes it harder to afford essentials such as energy. Moreover, managing health conditions may increase energy needs, leaving this group more vulnerable to energy price increases. For example, they may require extra home cooling or heating, while high energy costs may leave households choosing between medication or other expenditure and energy use (ACOSS 2013). Despite the risks, households including someone with a disability or chronic condition are much more likely than other households to restrict heating use due to cost (5% vs 2%).

Figure 8 Energy stress (all forms) by disability/health condition status, 2006 to 2020

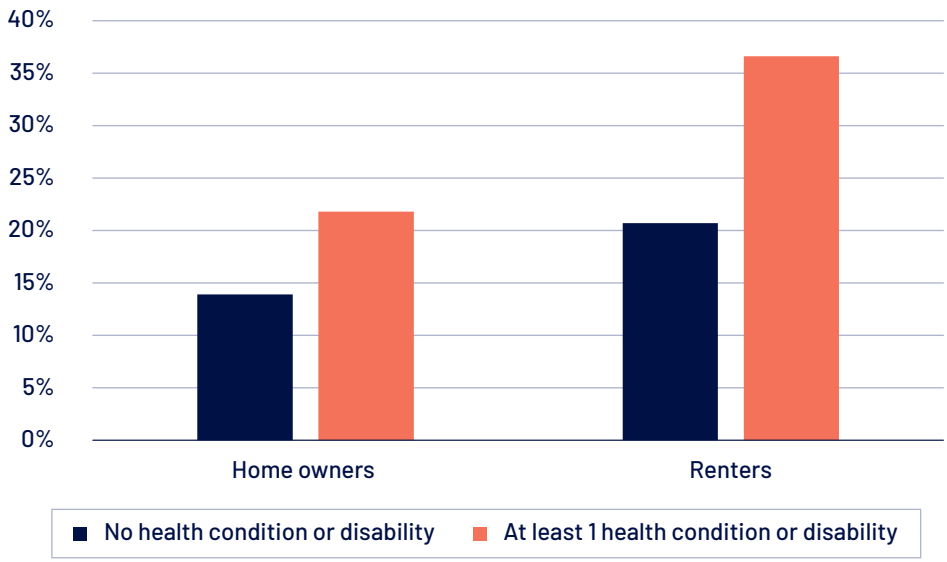


Note: Years 2010, 2014 and 2018 are excluded as no data is available for consensual energy stress measures.

Energy stress rates increase further among renter households where at least one member has a long-term health condition or disability. Figure 9 shows that 37% of renter households with a disability were in energy stress across 2019 and 2020, compared with 21% of those without. This includes around 8% of renter households with a disability going without heating due to cost.

Inefficient rental properties increase energy needs (Liu & Judd 2018). For households including someone with a disability or chronic condition and associated higher energy needs, this compounds the risk of energy stress. Moreover, negative health outcomes resulting from extreme weather events are more likely where multiple risk factors co-exist. These risk factors include low incomes, existing heath conditions and inefficient housing.

Figure 9 Energy stress (all forms) by tenure type and disability/health condition status, combined 2019 and 2020 data



Note: 'Renters' include tenants in private, public and community housing. 'Home owners' include those with a mortgage and those who own outright.

Typology of initiatives to address energy stress

In Australia, a variety of policies at state and Commonwealth level impact energy stress, either directly or by affecting its key drivers. Understanding these policies is key to improving how we address energy stress.

The tables below present a typology of energy-related policies that directly or indirectly address energy stress in Australia, particularly for individuals and households experiencing disadvantage. The typology does not attempt to cover non-energy policies that affect energy stress (e.g. urban planning and transport planning).

The typology sets out two broad intervention categories:

- consumer-side initiatives that directly engage with energy consumers (demanders)
- energy system initiatives that apply intervention to the wider energy system (supply). These may in turn have impacts on consumers; however, the intervention or obligation is applied to the system.

The typology has a number of parameters and limitations, including:

- As the energy market evolves, participants may increasingly be located on both consumer and system sides of the market. For example, a household with rooftop solar panels may be both a consumer and a supplier of energy.
- The examples of programs and policies within each intervention type are not a full catalogue of interventions/policies.
- The examples are illustrative. The typology does not comment on or evaluate the effectiveness of these initiatives. All real-world interventions should be subject to periodic evaluation and review.

Table 2 Consumer-side initiatives

Intervention type	Description	Examples
Price/cost reduction initiatives	All Australian states/territories offer programs, policies or payments to reduce the price/cost of energy for groups potentially facing energy stress, most commonly concession card holders.	• Concessions (offered by all states/territories) provide ongoing discounts on energy bills, to concession card holders (~35% of the population (Department of Families Fairness and Housing 2022)). Some offer a percentage discount (e.g. 17.5% in Vic.) and others a flat dollar amount (e.g. $285 p.a. in NSW[12]). • Specialised concessions (e.g. Vic. Medical Cooling Concession[13]) provide further support to smaller groups. • One-off payments applied to energy bills (e.g. in Qld[14] and WA[15]) can reduce the cost of a bill. • The SA Government has an arrangement with one energy retailer to offer a discounted tariff for concession card holders.

12 https://www.ewon.com.au/content/Document/Resources_for_customers/EWON-Factsheet-rebates-and-concessions.pdf; https://services.dffh.vic.gov.au/annual-electricity-concession

13 https://services.dffh.vic.gov.au/medical-cooling-concession

14 https://www.qld.gov.au/community/cost-of-living-support/concessions/energy-concessions/cost-of-living-rebate

15 https://www.wa.gov.au/service/community-services/grants-and-subsidies/apply-household-electricity-credit.

Table 2 Consumer-side initiatives (continued)

Intervention type	Description	Examples
Income supplement initiatives	Government payments that supplement people's income can reduce energy stress.	• The Australian Government issued a $250 cost of living payment in 2022.[16] • The Victorian Government's separate $250 Power Saving Bonus is paid into bank accounts (and predicated on accessing information – see below).
Debt reduction initiatives	Some state/territory governments provide payments to households to reduce energy debt, as well as requiring retailers to offer payment plans.	• Grants are made to eligible households in debt, e.g. Utility Relief Grant Scheme (Vic.)[17]; Energy Accounts Payment Assistance (NSW)[18], both administered via retailers. • Retailers are required to offer payment plans, to allow customers to pay off debts in a regular, manageable way.
Energy efficiency initiatives	These initiatives promote and enable home energy efficiency upgrades through grants, subsidies, low/no-interest loans, and standards requiring rented homes to meet an efficiency threshold. Energy efficiency upgrades can reduce energy stress by lowering energy costs or improving amenity (e.g. lessening the need to ration heating).	• Subsidy programs provide discounts for home upgrades, e.g. Home Heating and Cooling Upgrades and Solar Homes (Vic.); Appliance Replacement Offer (NSW). • Standards for rented homes' efficiency exist in Victoria[19] and are under development in the ACT[20] and at National Cabinet level. • NSW offers households free solar systems in exchange for giving up their concession.[21]
Information initiatives	Some initiatives attempt to address energy stress by providing customers with information, usually to help them to lower their usage (e.g. through energy-saving behaviours) or price/cost (e.g. through switching to a cheaper energy offer).	• Offer comparison websites include Victorian Energy Compare and Energy Made Easy (federal). • Some payments (e.g. Victoria's Power Saving Bonus) incentivise the consumer to access energy price comparisons that can lead to reduced energy costs. • Customer supports such as the Energy Assistance Program (Vic.) provide households with tailored information/advice.

16 https://www.abc.net.au/news/2022-04-28/250-cost-of-living-payment-welfare-pensioner-eligiblity/100988178#:.

17 https://services.dffh.vic.gov.au/utility-relief-grant-scheme

18 https://www.service.nsw.gov.au/transaction/energy-accounts-payment-assistance-eapa-scheme

19 https://www.energy.vic.gov.au/energy-efficiency/minimum-rental-standards

20 https://yoursayconversations.act.gov.au/minimum-energy-standards

21 https://www.energysaver.nsw.gov.au/browse-energy-offers/household-offers/rebate-swap-for-solar-and-upgrades

Table 3 Energy system initiatives

Intervention type	Description	Examples
Market efficiency initiatives	Some initiatives attempt to address energy stress by increasing the efficiency of a) wholesale or retail markets or b) monopoly energy network businesses, which should theoretically lower household energy costs.	• Retail: Governments have introduced some regulations to improve the market's efficiency (e.g. promoting customer switching) or cut retail costs (e.g. default offers, see below) and limits on marketing (e.g. door-to-door sales bans).[22] • Networks: Regulators scrutinise and sometimes mediate or reject energy networks' pricing proposals to promote efficiency and limit costs.[23] • Wholesale: Some initiatives limit costs, for example permanent[24] and temporary[25] price caps; tariff reform attempts to increase efficiency.[26]
Resource reservation interventions	Government can mandate reservation of energy resources to increase domestic energy supply.	• WA's Domestic Gas Policy makes 15% of locally extracted gas available to the state's consumers[27], potentially limiting energy stress by decreasing their exposure to internationally linked prices.
Consumer support interventions	Government regulations attempt to address energy stress through intervening in markets in various ways, such as creating a regulated price, limiting gas exports, instating consumer protections, limiting disconnections and requiring retailers to offer assistance to customers experiencing payment difficulty.	• Households in every state now have access to an energy price set by government bodies, e.g. Default Market Offer (NSW, SA, SE Qld, SA), Victorian Default Offer, regulated prices in Tas., NT, ACT, WA. • Customer protections exist in all states, although they vary. They include restrictions on price rises and disconnections, and on retailer interaction with households. • SA, Vic., ACT and NSW run 'white certificate' schemes that oblige energy retailers to purchase certificates from installers of energy efficiency upgrades, who provide these upgrades to customers at a discount, potentially lowering energy costs. Some schemes, e.g, in SA, have targets for the participation of low-income households.

22 https://www.energy.vic.gov.au/about-energy/energy-fairness-plan

23 https://www.aer.gov.au/news-release/aer-decision-will-lower-prices-for-act-and-nsw-electricity-customers

24 https://www.aemo.com.au/-/media/Files/Electricity/NEM/National-Electricity-Market-Fact-Sheet.pdf

25 https://www.afr.com/companies/energy/wholesale-gas-prices-capped-in-apocalyptic-energy-market-20220530-p5apqf

26 https://www.aer.gov.au/networks-pipelines/network-tariff-reform

27 https://www.wa.gov.au/government/publications/wa-domestic-gas-policy

Policy implications

Drawing on the results of this study, our identification of the key drivers and impacts of energy stress, and the policy typology in the previous section, this section suggests some policy implications in the context of rising energy prices and other cost of living pressures, as well as the Commonwealth's policy commitment to faster decarbonisation.

These implications include development of agreed measures for energy stress, a review of existing policy interventions, consideration of complementary institutional arrangements and some specific policies to tackle energy stress drivers.

Develop agreed measures of energy stress and undertake ongoing monitoring

As noted in section 3, there is no agreed definition of measurement of energy stress (or energy poverty) in Australia. Existing measures are limited. Regulators and governments tend to focus on disconnections, debt and participation in hardship programs, while academic studies focus on multidimensional measures. Neither group takes sufficient account of all the drivers of energy stress including consumption and prices, partly due to a lack of linkable data. There is merit in developing comprehensive measures, and supporting datasets, to strengthen understanding of energy stress in Australia. An Australian review could draw on international experience. For example, the United Kingdom conducted a Fuel Poverty Review ('Hills Review') in 2012 to examine the nature and measurement of 'fuel poverty' and propose refined and improved measurement.

Review existing policies

A range of existing policies may have an impact on energy stress, as noted in the policy typology. These policies have been introduced across different jurisdictions at different times. However, there is limited publicly available information on whether they are effective, well targeted and aligned.

There is scope to establish an independent review of energy stress policies in Australia. This could be commissioned by the federal government and include participation by states and territories.

An Australian review could also draw on previous domestic work including the ACCC's retail energy market inquiry and the Finkel Review.

Strengthen institutional arrangements to address energy stress

There is also scope to consider complementary institutional arrangements to support this work, drawing on international experience. For example, the European Union established an Energy Poverty Observatory (EPOV) in 2016, which led to an Energy Poverty Advisory Hub (EPAH) in 2021. The EPAH conducts research into energy poverty, advances measurement and monitoring, provides training courses and materials, and shares case studies on energy poverty mitigation. They bring together practitioners and experts interested in energy poverty alleviation from academia, community organisations, government and business.

Strengthen Commonwealth–state collaboration

As evident from the typology above, both state and Commonwealth governments have responsibilities for energy policy including energy stress and affordability issues. Therefore, an important starting point for addressing energy stress in the context of faster and deeper decarbonisation, rapidly rising energy prices and cost of living pressures is to strengthen Commonwealth–state collaboration to develop shared policy objectives and align policy effort.

Specific policy directions

As this report has identified, energy stress drivers include consumption, price and income. Suggested policy interventions are indicated below. They will directly impact households in energy stress, or can be targeted to them, and are scalable.

Promoting efficient consumption

The following policies can make household energy consumption more efficient and therefore lower household energy expenditure, particularly for low-income and vulnerable people, including both renters and home owners. Energy efficiency policies can also help households lower their carbon emissions and increase their resilience to our changing climate.

Minimum energy efficiency standards for rented homes

Private renters show high rates of energy stress, which is likely to be related to poor energy efficiency (among other factors). Standards oblige landlords to ensure their properties meet a certain level of energy efficiency before they can be rented, lowering energy stress and improving wellbeing and health for some renters.

Victoria and the ACT could continue to strengthen and expand their standards, while other states could adopt minimum standards, such as those set out in the framework developed as part of the Trajectory for Low-Energy Buildings.

Support for home energy upgrades

As this study found, low-income households are often hit hardest by energy stress. Many low-income households could lower their energy costs through upgrades but may be restricted due to the upfront cost and other barriers. Government can address this problem by providing low-income households with full or partial subsidies for energy-efficient fixtures and appliances (e.g. efficient hot water or heating), rooftop solar panels and electrification upgrades. Some promising large-scale initiatives already exist, such as Victoria's Home Heating and Cooling Upgrades program; and these can be built on. Planning should ensure suitable measures are available for different tenures (owner-occupiers, private renters, public and social housing) and different dwelling types (including apartments and non-standard dwellings such as caravans).

Transition plans for widespread home electrification

Households can already save money in most cases by disconnecting from gas (Victorian Government 2022; Alternative Technology Association [ATA] 2018), and future gas consumption may emerge as a particular source of energy stress, especially if the current price volatility continues (Victorian Government 2022). Households who remain on gas are likely to face future energy stress as the gas network declines and becomes more expensive for remaining consumers. These are disproportionately likely to be low-income households because they face capital and other barriers to purchasing electric appliances.

To mitigate future risks of energy stress, planning, regulation and resourcing by state and federal governments are needed to equitably coordinate electrification. Apart from Victoria and the ACT, most governments have not begun serious transition planning. Government plans should set timelines for the phase-out of gas, include measures to address rising network prices, and include subsidies for electrification (see above). Collaboration between states and with the Commonwealth could assist, for example in developing shared training courses and pathways for home electrification.

Trajectory for Low-Energy Buildings

Commonwealth–state collaboration on energy efficiency policy is highly valuable, and the existing

work of the Trajectory for Low-Energy Buildings should be strengthened and accelerated. The Trajectory is a plan, agreed by state and Commonwealth energy ministers in 2019, aiming to achieve 'zero energy and carbon-buildings' (COAG Energy Council 2018, p. 4) through various workstreams, including minimum standards for rented homes and disclosure of energy efficiency ratings.

Promoting affordable prices

Support renewable energy

Renewable energy has put downward pressure on energy prices in Australia (Mountain et al. 2018), which should ease some energy stress. However, barriers remain to the expansion of renewables, such as the need for substantial new transmission and storage infrastructure.

To facilitate lower system-wide prices, while transitioning to a net zero system, it is essential to support the uptake of renewable energy through policies such as the Albanese government's Rewiring the Nation commitments, a coordinated national approach to the planning and construction of infrastructure (including community batteries), and credible, durable climate policy that provides long-term certainty to renewable energy investors.

Reform retail energy markets

Energy stress is likely to be exacerbated by households paying unnecessarily high prices in retail energy markets (Colmar Brunton 2018; Azpitarte, Johnson & Sullivan 2015). This may be reflected in our finding that people aged over 65, who often face barriers to choosing a better energy offer (such as the requirement to receive electronic bills), had high rates of energy stress.

The following reforms to retail energy markets may aid in reducing energy prices and associated stress:

- **Extending the application of default offers –** which provide a fallback for people who do not or cannot choose a market offer. Extending them to include gas, and expanding access, for example to people in embedded networks, can reduce energy costs for consumers.[28]
- **Enhancing retail consumer protections –** such as requiring retailers to place customers in payment difficulty on their best offer and requiring retailers to move customers off expensive 'legacy' offers.
- **Funding consumer representatives to participate in network pricing –** as BSL is currently doing in Victoria, can help reduce energy prices and stress by lowering household bills (particularly the large network component), and represent the interests of vulnerable households.

Enabling adequate incomes

Provide an adequate and decent social safety net

Our analysis found social security recipients have some of the highest rates of energy stress, with many going without heating or struggling to pay bills. An independent review should be established to ensure that the structure, rates and conditions of social security payments provide a real safety net that protects recipients and their families from shocks and allows them to afford the essentials.

ANU modelling commissioned by BSL and Social Ventures Australia (Phillips & Narayanan 2021) shows that a substantial boost of up to 20% of overall social security spending would deliver strong benefits, increasing most working age payments and reducing poverty rates for those recipients by up to 75%. This would allow JobSeeker Payment to increase by $233 per week, which is still less than the initial rate of the Coronavirus Supplement. A more modest 10% increase would provide JobSeeker recipients with an additional $190 per week and cut their poverty rates from 88% to just 34%, while also allowing increases to Disability Support Pensioners and those on parenting and carer payments.

28 Embedded networks are places such as certain caravan parks, retirement villages and apartment blocks where people cannot choose their energy retailer and so often pay high rates.

Promote improved employment outcomes and wage growth

Our analysis showed sharp differences in rates of energy poverty between households with full-time and those with part-time work. For many workers, employment does not provide job security, sufficient hours or wages that cover the cost of living, in a period of low wage growth, declining full-time work and more people working multiple jobs to get by (Jericho 2021). Policies and reforms that enhance employment outcomes and improve productivity should be designed to improve opportunities for those currently shut out of work, promote decent work that drives wage growth and allow workers to afford essentials such as heating and cooling. This should include consideration of wage setting and bargaining, improving working conditions in sectors currently characterised by precarity and low pay (e.g. aged care and early childhood education) and creating pathways for those in casual, contract or part-time work.

Increase secure and affordable housing

Around one-third of Australian households are renters, with the number of lifelong renters expected to grow (Daley & Coates 2018). Our analysis shows renters have higher rates of energy stress, probably due to the energy cost of less efficient housing and to high rents. Increased investment to lift the number and quality of social and affordable rental properties is therefore needed. Such reforms can assist people to live with economic dignity and afford a comfortable home in a changing climate.

Seizing the opportunity

Many people in Australia struggle to afford the energy they need for their wellbeing. With high energy prices and inflationary pressure, the importance of understanding and addressing energy stress (or poverty) is elevated. At the same time, the transition to clean energy presents opportunities for addressing energy stress in ways that deliver positive impacts for all households, particularly those experiencing disadvantage.

With high energy prices and inflationary pressure, the importance of understanding and addressing energy stress (or poverty) is elevated.

References

ACCC (Australian Competition and Consumer Commission) 2018, *Restoring electricity affordability and Australia's competitive advantage*, ACCC, Canberra. Viewed 21 July 2022.

—— 2022, *Inquiry into the National Electricity Market: Addendum to the May 2022 report*, ACCC. Viewed 21 July 2022.

ACOSS 2013, *Energy efficiency and people on low incomes*, ACOSS, Strawberry Hills, NSW. Viewed 21 July 2022.

ACOSS & Brotherhood of St Laurence 2018, *Energy stressed in Australia*, ACOSS. Viewed 21 July 2022.

Alternative Technology Association [ATA] 2018, *Household fuel choice in the National Energy Market: final report (revised) July 2018*, prepared for Energy Consumers Australia, ATA, Melbourne. Viewed 18 July 2022.

ABS (Australian Bureau of Statistics) 2009, *Household water, energy use and conservation, Victoria*, ABS, Canberra.

—— 2012, *Household energy consumption survey, Australia: summary of results*, ABS, Canberra.

—— 2022, *Wage Price Index*, Australia, ABS, Canberra.

AEMC (Australian Energy Market Commission) 2021, *Victorian electricity prices to continue falling*, AEMC, Sydney. Viewed 21 July 2022.

AER (Australian Energy Regulator) 2022, *Energy Made Easy*, AER, Melbourne. Viewed 21 July 2022.

Australian Institute of Health and Welfare 2009, *Chronic disease and participation in work*, AIHW, Canberra. Viewed 25 July 2022.

—— 2020, *People with disability in Australia 2020*, AIHW, Melbourne. Viewed 18 July 2022.

Awaworyi Churchill, S & Smyth, R 2020, 'Ethnic diversity, energy poverty and the mediating role of trust: evidence from household panel data for Australia', *Energy Economics*, vol. 86, article 104663.

—— 2021, 'Energy poverty and health: panel data evidence from Australia', *Energy Economics*, vol. 97, article 105219.

Azpitarte, F, Johnson, V & Sullivan, D 2015, *Fuel poverty, household income and energy spending*, Brotherhood of St Laurence, Fitzroy, Vic.

Best, R & Burke, PJ 2022, 'Effects of renting on household energy expenditure: evidence from Australia', *Energy Policy*, vol. 166, article 113022. DOI 10.1016/j.enpol.2022.113022

Better Renting 2019, *Baby it's cold inside: energy efficiency ratings in the ACT*, Better Renting, Canberra.

Bouzarovski, S, Thomson, H, Cornelis, M, Varo, A & Guyet, R 2020, *Towards an inclusive energy transition in the European Union: confronting energy poverty amidst a global crisis*, European Union, Luxembourg.

Bowman, D & Banks, M 2018, *Hard times: Australian households and financial insecurity*, BSL, Fitzroy, Vic.

Braubach, M, Jacobs, DE & Ormandy, D 2011, *Environmental burden of disease associated with inadequate housing*, World Health Organization, Copenhagen.

Browne, B & Schultz-Byard, N 2021, *Something new under the sun: solar PV on South Australian rentals*, Discussion paper, The Australia Institute, Manuka, ACT. Viewed 21 July 2022.

Chester, L 2013, *The impacts and consequences for low-income Australian households of rising energy prices*, University of Sydney, Sydney.

COAG Energy Council 2018, *Trajectory for low energy buildings*, Commonwealth of Australia, Canberra. Viewed 21 July 2022.

Colmar Brunton 2018, *Consumer outcomes in the national retail electricity market*, ACCC, Manuka, ACT.

Daley, J & Coates, B 2018, *Housing affordability: re-imagining the Australian dream*, Grattan Institute, Melbourne.

Department of Families Fairness and Housing 2022, *Department of Families, Fairness and Housing concessions: summary data for the financial years 2018–2021*, DFFHC, Melbourne, Viewed 25 July 2022.

Department of Social Services [DSS] 2021, *Guide: government response to Coronavirus*, DSS, Canberra.

Fry, JM, Farrell, L & Temple, JB 2022, 'Energy poverty and retirement income sources in Australia', *Energy Economics*, vol. 106, article 105793.

Gabriel, M, Watson, P, Ong, R, Wood, G & Wulff, M 2010, *The environmental sustainability of Australia's private rental housing stock*, Final report no. 159, AHURI, Melbourne.

Graham, PW, Hayward, J, Foster, J, Story, O & Havas, L 2018, *GenCost 2018: updated projections of electricity generation technology costs*, CSIRO.

Jericho, G 2021, 'Australians don't talk much about the working poor – but the pandemic recession might make us', *The Guardian*, 13 June.

Klapdor, M 2020, 'Why most pension and benefit rates will not be increased in September 2020', *FlagPost*, 24 August, Parliamentary Library, Canberra. Viewed 21 July 2022.

Liu, E & Judd, B 2018, *Tenure as barrier to low carbon living*, Paper presented to 8th State of Australian Cities National Conference, Adelaide, 28–30 November. Viewed 21 July 2022.

Maidment, CD, Jones, CR, Webb, TL, Hathway, EA & Gilbertson, JM 2014, 'The impact of household energy efficiency measures on health: a meta-analysis', *Energy Policy*, vol. 65, pp. 583–593.

Mountain, B & Burns, K 2021, *Is rooftop solar a play-thing of the well-to-do? A critique of the argument and evidence*, Victoria Energy Policy Centre, Victoria University, Melbourne.

Mountain, B, Percy, S, Kars, A, Saddler, H & Billimoria, F 2018, *Does renewable electricity generation reduce electricity prices?*, Victoria Energy Policy Centre, Victoria University, Melbourne.

Phillips, B & Narayanan, V 2021, *Financial stress and social security settings in Australia*, ANU Centre for Social Research and Methods, Canberra.

SACOSS 2020, *Utilities Stress Indicators Pilot Project: proof of concept*, Summary of presentation to SACOSS conference, December. Viewed 21 July 2022.

Senate Community Affairs References Committee 2020, *Adequacy of Newstart and related payments and alternative mechanisms to determine the level of income support payments in Australia*, SCARC, Parliament House, Canberra.

Simshauser, P 2021, 'Vulnerable households and fuel poverty: measuring the efficiency of policy targeting in Queensland', *Energy Economics*, vol. 101, article 105405.

Simshauser, P & Nelson, T 2014, 'The consequences of retail electricity price rises: rethinking customer hardship', *Australian Economic Review*, vol. 47, no. 1, pp. 13–43.

Thomson, H & Snell, C 2013, 'Quantifying the prevalence of fuel poverty across the European Union', *Energy Policy*, vol. 52, pp. 563–572.

Thornton, D, Bowman, D & Mallett, S 2020, *Safety net to poverty trap? The twentieth-century origins of Australia's uneven social security system*, BSL, Fitzroy, Vic.

Thwaites, J, Faulkner, P & Mulder, T 2017 *Independent Review into the Electricity and Gas Retail Markets in Victoria*, [Department of Environment, Land, Water and Planning] Melbourne. Viewed 21 July 2022.

UNSW City Futures Research Centre & Astrolabe Group 2019, *Australia's household infrastructure bill: analysis report*, City Futures Research Centre UNSW & Astrolabe Group, [Sydney]. Viewed 21 July 2022.

VCOSS 2017, *Power struggles - Everyday battles to stay connected*, VCOSSMelbourne.

—— 2018, *Battling on: persistent energy hardship*, VCOSS, Melbourne.

Victorian Government 2022, *Gas substitution roadmap*, Victorian Government, Melbourne.

Watson, N & Wooden, MP 2012, 'The HILDA Survey: a case study in the design and development of a successful Household Panel Survey', *Longitudinal and Life Course Studies*, vol. 3, pp. 369–381.

Wiesel, I, Ralston, L & Stone, W 2020, 'The housing boom propelled inequality, but a coronavirus housing bust will skyrocket it', *The Conversation*, 9 June.

Power pain

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2022

Acknowledgement of Country

The Brotherhood of St. Laurence acknowledges the Traditional Custodians of the land and waterways on which our organisation operates. We pay our respects to Aboriginal and Torres Strait Islander Elders past, present and emerging.

Brotherhood of St Laurence
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