

International Conference on Improving Residential Energy Efficiency, IREE 2017

Energy disadvantage in Australia: policy obstacles and opportunities

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Abstract

This paper links energy and climate change with disadvantage in Australia and explores the dual disadvantage of steeply rising electricity prices and increasing climate change impacts. It reviews the potential of energy policy and climate policy to alleviate disadvantage, over the short and longer term, and suggests that renewable energy in particular has a role to play. However, the prospect of renewable energy policy advances in Australia is constrained, it is found, by the politicised nature of climate policy more broadly, the influence of the fossil fuel lobby, and the predisposition of current governmental policy. Drawing upon the policy streams and advocacy coalition theories of policy change, the paper assesses the political and ideological bases of this constraint, and the prospects for improved policy that could alleviate energy disadvantage. It finds that, whilst renewable energy does have an important role to play in achieving energy affordability, it needs to be supported politically, and complemented, in practical terms, by a range of policies and measures at all levels of government.

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Peer-review under responsibility of the scientific committee of the International Conference on Improving Residential Energy Efficiency.

Keywords: energy policy; climate change policy; renewable energy.

1. Introduction

Literature has not substantively linked energy pricing and policy, climate change impacts and disadvantage in Australia. It has begun to focus on energy poverty. Hardship caused by rapidly escalating energy prices in recent

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years is argued by Chester and Morris (2011) to constitute energy-based poverty about which little is currently known. There is scant research, they claim, ‘of the consequences for low-income households of meeting the rising (energy) costs’ in Australia. Neither have government policies and income support responses addressed the problem. There remains a need to seek ‘an approach to electricity pricing ... that prevents adverse impacts on the standard of living for millions of Australian households’ [1]. Energy affordability and the shock of rapidly escalating prices, since the publication of this paper, is followed by the Australian Council of Social Services’ (ACOSS) proposed national framework for energy poverty [2]. Discussion around the problem of energy poverty, where ‘low-income households spend 10% or more of disposable income on energy bills’ [1], is gaining traction in Australia.

Energy poverty or disadvantage is an urgent problem in this country that should be framed in the context of impacts of climate change. Climate change is not just problematic for its environmental impacts, but for its impacts upon the human condition in a warming environment, upon health and livelihood, particularly for the poor and disadvantaged [3]. This is not just a third world issue, with Australia’s poor, elderly, indigenous, remote and disadvantaged citizens particularly at risk, not only from the impacts of global warming, but from climate policies and measures lacking in equity considerations. Such citizens are vulnerable to the impacts of climate change, resulting from rising temperatures, increased food insecurity, and more frequent and severe disasters, despite Australia’s first world public health, agriculture and infrastructure sectors, and its relatively high adaptive capacity [4]. They are vulnerable to the distributed costs of climate change policies, where there is inadequate compensation for the implementation of carbon pricing, or a cost shift to compensate polluting industries rather than households, or, we argue, where there are barriers to the development and uptake of Renewable Energy (RE). Our principle concern, in reviewing the dual ‘energy cost/climate impact’ problem is to consider the potential of renewable energy to address cost and climate disadvantage. RE has become politicised and polarised on interest based and ideologically differing grounds in Australia since the 2013 election of the conservative Abbott Coalition government. We examine RE policy in the context of the constraints generated by opposing political values and interests, and argue that this context is critical to the uptake of RE that could relieve household disadvantage. We review arguments by RE advocates in the social and welfare sector and consider various opportunities for policy improvements and/or change. Our examination concludes with the need to identify and consider the impact of differing RE advocacy coalitions upon the prospects for policy change to address disadvantage. An application of the Advocacy Coalition Framework (ACF) [5] is being pursued by further research.

2. Energy disadvantage in Australia

2.1. The impact of rising prices

Australia has historically enjoyed amongst the lowest wholesale and household energy prices in the world [6], but, between 2003 and 2013 the cost of household electricity increased by 72% [7]. A Senate Inquiry into Reducing Energy Bills and Improving Efficiency [8] found that amongst the reasons for this rise, the regulation of the National Electricity Market (NEM) was predominantly to blame for creating a perverse incentive for a massive over-investment in network infrastructure, predominantly poles and wires. Professor Ross Garnaut observes in his testimony to the Inquiry that increases in electricity prices occurred with the introduction of regulation and the price of electricity has steeply risen in Australia compared with other developed countries. He suggests that steady price increases are results of artificial manipulation by government legislation. Figure 1 illustrates the increase in energy prices in Australia.[9]

Social consequences of price rises are stark. ACOSS found that for the estimated 12.8% of the Australian public who are living in poverty, energy affordability is a growing, and sometimes crushing problem [10]. Low-income households are spending disproportionately high percentages of their income on energy and are vulnerable to price increases [10]. In the Senate Inquiry, the Brotherhood of St Laurence noted evidence of the increased financial hardship, deprivation, energy disconnections and spending on emergency relief that this is causing [11]. In Victoria demand for Utility Relief Grants for paying electricity bills ‘rose 136.4%, from just over 5,000 in 2007/08 to nearly 12,000 in 2009/10’ [11]. Assistance to consumers from the Energy and Water Ombudsmen in Victoria jumped 225% between 2007–08 and 2011–12, with a similar trend recorded in NSW [8]. Household electricity is indirectly

consumed as a product of lighting, heating, cooking and hot water usage, which are all largely non-discretionary goods that we associate with a decent standard of living [12]. The Inquiry heard that lower income households ‘are being forced to make challenging decisions about the allocation of household income to essentials such as rent, food and utilities’, with people ‘choosing not to heat or cool their homes because of concerns about cost’ [8]. Most impacted are pensioners, single parents, young families, low-income households and those with disabilities or who rely upon government benefits. High-energy users in the low-income bracket are particularly vulnerable - those in larger households, detached dwellings, country areas and households without access to energy rebates [13]. Evidence to the Inquiry indicated that low income earners are imposing self-depreciation techniques in order to afford their electricity bill [8]. Whilst low-income consumers place a high priority on paying their electricity bills, and paying them on time, price rises and the shift to quarterly billing has made it difficult to do so [11, 12, 14]. It is equally more difficult for them to make energy efficiency improvements in terms of their housing conditions and household appliances, given their lack of resources and housing tenure issues [1]. Neither do low-income households have the capacity to benefit from energy savings schemes nor investment in energy efficiency audits or appliances, solar hot water systems or solar photovoltaic systems [11].

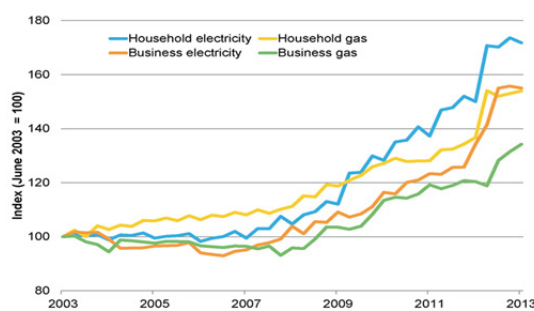


Fig.1. Real electricity and gas price increases, 2003 to 2013 [7].

2.2. Climate Change Impacts

The CSIRO (2014) has found that, since records began, and against a background of natural variability, Australia has experienced more warm weather and extreme heat, fewer cool extremes, an increase in extreme fire weather, and longer fire seasons [15]. Atmosphere and oceans around Australia are warming, and reductions are needed in greenhouse gas emissions to limit warming and increases in extreme weather [16]. The Australian Academy of Science (2015) recommends a target of 30 to 40% emission reductions below 2000 levels, with a longer term goal of approaching zero carbon emissions by 2050 [17]. In the meantime, low income and disadvantaged Australians are already suffering from rising electricity prices and will be doubly disadvantaged by the multiple impacts of climate change. Climate change will increase vulnerability across the country [18], with the disadvantaged least able to cope with impacts on food, health, water, energy, transport, and the costs of adaptation—such as investing in water tanks and energy-efficient appliances or retrofitting homes to provide protection from extreme weather [10, 16].

In 2007 when climate change was prominent on the agenda of the Rudd Labor Government, and when Australia was suffering from a decade-long drought, the Victorian Council of Social Services (VCOSS) detailed climate change impacts on the disadvantaged. These included the likely increased cost of energy and water with the introduction of carbon pricing; the health impacts of increased heat wave incidences; and increased food insecurity and rising food costs in a warmer climate [19]. More recently VCOSS (2015) argued that the disadvantaged are more vulnerable to climate impacts due to the inability to adapt to severe weather events because of financial constraints not allowing measures to be taken to enable climate change readiness and demographic aspects such as being elderly, illness, disability and language and cultural barriers [20]. The Queensland Council of Social Services (QCOSS) noted the health and morbidity risks for the sick, young and elderly in particular from increased heat and incidences of heat

waves [21, 22, 23]. Low income and disadvantaged households, which are often ‘rental properties, temporary accommodation or low cost housing options such as caravans’ will not be adequately insulated, shaded nor cooled. Nor will they be adequately insured against extreme weather events and natural disasters [23]. The concern from Councils of Social Services since 2007 has been the likely impact upon the disadvantaged of the introduction of carbon pricing with the transference of the associated costs from affected industries to the consumer. The Clean Energy Future carbon-pricing package [24] that took effect from July 2012 raised AUD\$9 billion pa, with \$5 billion pa returned to lower income households as lower income taxes and higher welfare payments. The Gillard Labor Government argued that the scheme’s stability, credibility and efficiency relied upon allocating at least half of the income derived from the sale of emission permits back to low-income households [25]. This scheme was the first in the world to use revenue raised from emission permits to reduce the costs of mitigation with half compensating households and the rest relieving the costs to industry by allocating assistance and free permits [26]. The scheme reduced emissions [27, 28] without adding to the cost of living [29, 30] before the Abbott government repealed it in 2014. With no carbon price currently in place and with climate policy generally contested in Australia, renewable energy may offer more immediate utility in alleviating disadvantage.

3. Renewable energy obstacles and opportunities

3.1. Renewable energy politics

RE is only part of the policy mix that is required to avert dangerous climate change, but, in the absence of significant national action, it offers a lever that can be readily grasped by subnational governments, businesses and householders [31]. Despite efforts of conservative national governments to roll back RE policy, the industry has enjoyed healthy growth with Australia world leading in the proportion of households with rooftop solar per capita [32]. In 2012, the REC Agents Association (RAA), an Australian industry body representing firms that create and trade in renewable energy certificates, found that rooftop solar uptake was highest in low-income Australia, giving lie to the notion that public policy designed to support the uptake of householder RE amounts to middle class welfare. The study found that in Australia:

- Just over half of the 1.48 million solar systems (both PV and solar hot water) are located in regional and rural communities;
- In Capital cities, suburbs with highest penetration were typically in the out metropolitan mortgage belt.
- Average income of the most popular regional areas was \$43,000 - \$49,000; Suburbs with the highest penetration in cities had an average income of \$69,000;
- Suburbs with the highest income levels did not correspond to those with highest penetration.

The RAA concluded that ‘a broad range of communities have accessed solar under the RET (Renewable Energy Target) scheme and the ... figures explode the myth that the RET supports metropolitan middle class welfare’ [33].

	ACT	NSW	NT	QLD	SA	TAS	VIC	WA	Total
2001	-	12	6	33	41	-	15	11	118
2002	-	23	8	71	107	1	19	22	251
2003	3	134	10	150	246	9	98	14	664
2004	2	235	22	328	300	17	152	33	1,089
2005	4	291	35	339	380	13	254	90	1,406
2006	10	216	23	195	413	4	200	54	1,115
2007	48	779	26	475	1,037	25	828	262	3,480
2008	278	2,890	88	3,087	3,456	161	2,036	2,068	14,064
2009	803	14,008	215	18,283	8,569	1,452	8,429	11,157	62,916
2010	2,323	69,988	637	48,697	16,705	1,889	35,676	22,293	198,208
2011	6,860	80,272	401	95,303	63,553	2,475	60,214	51,667	360,745
2012	1,522	53,961	513	130,252	41,851	6,364	66,204	42,653	343,320
2013	2,411	33,998	1,024	71,197	29,187	7,658	33,332	21,600	200,407
2014	1,225	37,210	1,026	57,748	15,166	4,207	40,061	23,496	180,139
2015	1,063	33,446	1,197	39,461	12,059	2,020	31,309	20,778	141,333
2016	667	19,890	1,207	23,898	8,413	1,845	18,607	17,558	92,085
Total	17,219	347,353	6,438	489,517	201,483	28,140	297,434	213,756	1,601,340

Fig. 2. Postcode data for Small Scale Renewable Energy (Solar) Uptake in Australia 2001-2016 [31].

The RET is therefore a critical regulatory intervention by national level government with the potential to influence subnational, business and domestic renewable energy policy, actions and behaviour. Australia's Renewable Energy Target (RET) was one of the first regulatory policies in the world that aimed to increase renewable energy and decrease greenhouse gas emissions and is overwhelmingly popular (six in ten Australians want 20% of electricity generation to be from renewables by 2020). It was introduced in 2001 by the conservative Howard Coalition government with the aim of achieving an additional 2% of renewable energy in Australia's electricity generation by 2010 [34]. It is underpinned by various pieces of legislation (The Renewable Energy (Electricity) Act 2000 (REE Act), the Renewable Energy (Electricity) Regulations 2001, the Renewable Energy (Electricity) (Large-scale Generation Shortfall Charge) Act 2000 and the Renewable Energy (Electricity) (Small-scale Technology Shortfall Charge) Act 2010.), and has been subject to biennial review, currently by the Climate Change Authority (CCA), to extend and amend its targets to ensure that it is meeting its original policy objectives in the most efficient and effective manner (2015 amendments have removed the requirement for biennial reviews of the scheme and replaced them with regular status updates by the Clean Energy Regulator.). Since January 2011, the RET has comprised two elements, a Small-scale Renewable Energy Scheme (SRES) that recognises the role of householder and community power, and a Large-scale Renewable Energy Target (LRET) [35]. The RET was reviewed by the conservative Abbott Coalition Government in 2014 and the LRET reduced in June 2015, following negotiation with the Labor Opposition, from the previously legislated 41,000 GWh to 33,000 GWh [36]. This downwards revision of the LRET was part of the Abbott government's broad-scale dismantling of Australia's climate policies, including the dismantling of its carbon pricing scheme, following its election with an 'axe the tax' mandate in 2013[37]. The RET review unsettled the renewable energy industry, in part because of the apparent insider influence of the fossil fuel industry [38], with the result that large-scale solar and wind farm investment dropped 88% in 2014 to 2013 levels [36]. A prominent climate sceptic headed the review, but found that 'the RET scheme had lowered wholesale electricity prices and that its impact on household bills over time would be relatively small' [39]. The SRES scheme was not directly impacted by the 2014 review in that it continues to offer: 'a financial incentive for households, small businesses and community groups to install eligible small-scale renewable energy systems such as solar water heaters, heat pumps, solar photovoltaic (PV) systems, small-scale wind systems, or small-scale hydro systems' [35]. The Labor Opposition would lift the RET target when next in government and would remove the government's inclusion, post-review, of biomass from native forest waste as an eligible source of RE [39].

3.2. Opportunities for Policy Change

Policy change is much theorised and for our purposes would entail actions to ensure the effective alleviation of energy disadvantage by placing downwards pressures on rising energy costs whilst reducing climate change impacts on those who can least afford them. The RET scheme is a macro-policy regulatory instrument of enormous significance to the domestic context that has been found by the Clean Energy Council to have stimulated 90% of Australia's renewable energy generation and 22.5 million tonnes of its CO₂ reduction [40]. The RET's SRES policy settings are particularly crucial because disadvantaged households are not subject to the usual drivers or pressure points that trigger the uptake of renewable energy, and require specific consideration and interventions by policy makers. However, whilst renewable energy in general in Australia is an idea whose time has come in Cairney's (2011) and Kingdon's (2014) sense of setting the policy agenda and presaging change, there are clearly industry based and therefore political obstacles to its uptake in a fossil fuel driven economy like Australia's [41,42]. Kingdon's (2014) 'policy streams' theory of change suggests that these obstacles are generated by the 'politics' stream, and that alignment between the 'problem', 'policy', and 'politics' stream is needed if the 'window of policy change' is to be triggered [42].

Following Kingdon, we have defined the *problem* of energy disadvantage, indeed the dual disadvantage of unaffordable energy and climate change impacts for disadvantaged, vulnerable households [42]. However he argues that problems are only ever seen as such in a societal sense when it is recognised that something should be done about them, and that agenda setting by interest groups, or focusing events or obvious crises are therefore key. Agenda setting also offers an opportunity to shape the depiction of the problem, including its solutions being deemed worthy of political action. In terms of energy disadvantage, if we turn from *problem* to *policy*, we can see

that focusing events like the RET review generate a plethora of policy options for addressing a problem which are then on the record. This is critical because if the ‘window of policy change’ is triggered and there are no reasoned, evidence based policy options at hand, leaving only the ‘primeval policy soup’ that Kingdon describes, then there is little prospect of a resolution to the problem. We can note in Table 1 (Table 1, displays only ten of 45 recommendations), for example, some of the recommendations for alleviating energy disadvantage at the subnational level that were proposed by the Queensland Council of Social Services in a review of the state government’s climate change strategy and remain valid a decade later. Kingdon’s policy streams must intersect, however, for policy change to be achieved, which means that policy communities and entrepreneurs must steer feasible, valued and strategically robust policy solutions into the *politics* stream and gain traction at the right time [42]. In Australia, at this point in the climate change agenda setting process, policy action to alleviate energy disadvantage with strategies to promote the uptake of renewable energy in vulnerable households encounters entrenched ideological polarity in terms of action. In such circumstances it matters less how pressing the problem of climate change or energy disadvantage is, or how many rational solutions are emerging from the policy stream, than which of the interests, values and beliefs of entrenched political adversaries will prevail. Kingdon’s policy streams do not explain entrenched ideological opposition as a policy blockage, however Sabatier’s (2016) Advocacy Coalition Framework (ACF) does, and so it has enormous utility for explaining climate policy contestation in Australia [43]. The ACF offers a unique approach for identifying, mapping and interpreting the nature of renewable energy ‘advocacy coalitions’ in Australia, and changes in their values and beliefs over time. This in turn offers scope for interpreting renewable energy policy blockages.

Table 1. Queensland Council of Social Services – Review of Climate Change Strategy Recommendations [23] – [10 of 45 recommendations].

Recommendation 1	QCOSS recommends that climate change impact assessments designed to inform policy should include a focus on low-income, disadvantage and vulnerable households and communities.
Recommendation 2	QCOSS recommends that Queensland’s energy and climate change policies explicitly identify ensuring access to a basic quantum of affordable energy for all consumers as a core goal.
Recommendation 3	QCOSS recommends that the State Government develop a response to climate change that recognises the interconnections between energy, social and environmental policies and that not only conserves energy and contributes to our global responsibilities to reduce greenhouse emissions but minimises energy-related hardship.
Recommendation 4	QCOSS recommends that the Queensland Government develop policy and regulatory frameworks for the sale of energy and water that ensure fair and affordable household tariffs for a fundamental level of consumption.
Recommendation 5	QCOSS recommends that the Queensland Government commission economic modelling of the impacts of various energy tariff structures, including a ‘lifeline’ tariff structure approach, on energy affordability for consumers, including low-income and vulnerable households.
Recommendation 6	QCOSS recommends any changes to water tariffs should involve economic modelling of the impacts of various tariff structures on water affordability for consumers, including low-income and vulnerable households.
Recommendation 7	QCOSS recommends the development and implementation of a comprehensive community energy use and conservation education campaign.
Recommendation 8	QCOSS recommends a review of the state energy policy so that it reflects new knowledge and supports a comprehensive best practice approach to meeting the energy needs of Queenslanders while addressing the challenges of climate change.
Recommendation 9	QCOSS recommends that Queensland Government support regulatory changes that would encourage demand management, energy efficiency, renewable energy and distributed generation at both the State and National levels.
Recommendation 10	QCOSS recommends the introduction of a state based mandatory energy efficiency target, delivered through white certificate trading creating a market for retrofit energy efficiency actions in the residential, industrial and commercial sector, and structured such that it prioritises efficiency gains in non-discretionary energy uses such as low income households, tenants in private rental properties and rural and remote Queenslanders are allocated separate targets.

4. Conclusion

This paper presents work in progress defining energy disadvantage in Australia and the prospects of policy change to alleviate both steeply rising electricity prices and increasing climate change impacts. It is part of a broader project

that will next identify, map and interrogate the major advocacy coalitions for and against renewable energy in Australia, and question the appreciation within these coalitions of the problem of energy disadvantage. In terms of theory, such coalitions would hold core values & policy beliefs that mirror the familiar left and right scale of the political continuum. However, as we move through the project's empirical stage, we expect to find that the reality of views on renewable energy in Australia is much more complex than is suggested in theory by analytic tools such as the Advocacy Coalition Framework. The paper argues that renewable energy in particular has a role to play in alleviating energy disadvantage, but it finds that the politicised nature of climate policy has affected the predisposition of current governmental policy. It considers the prospects of policy change and the problem based, policy driven and political circumstances required to trigger that change [42] but finds that the Advocacy Coalition Framework (ACF) is well placed to identify and interpret ideological policy blockages. It argues that policy change will be triggered by identifying the problem of energy disadvantage, by maneuvering an alignment of problem recognition with, policy and political contexts, but, most importantly, by addressing ideological contestation. Whilst the paper is focused on the role that renewable energy could play in achieving energy affordability, it acknowledges that renewable energy needs to be supported politically, and complemented by a range of policies and measures at all levels of government.

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