



Prepared for: Department of Climate Change, Energy, the Environment and Water
Purpose: Feedback on a draft National Energy Equity Framework
Contact: Thomas Longden, Senior Researcher – Urban Transformations Research Centre

Assessments of energy equity, hardship and vulnerability need to account for the regularity of de-energisation events faced by prepayment customers and be consistent with existing definitions of payment difficulty and energy insecurity.

A key aim of this Framework is to establish a common language and understanding of energy equity. However, it is concerning that some experiences of electricity use are not accounted for. Prepayment for electricity has been associated with high rates of disconnection and this is reflected in the existing National Energy Retail Rule definition of payment difficulties and hardship.

Should prepayment for electricity be listed as a macro drivers of drive energy hardship?

The existing National Energy Retail Rule definition of payment difficulties and hardship defines that a prepayment meter customer is identified as experiencing payment difficulty if:

- a) a small customer with a prepayment meter market retail contract informs the retailer in writing or by telephone that the customer is experiencing payment difficulties; or*
- b) the retailer's management system identifies to the retailer that a small customer has self-disconnected 3 or more times in any 3-month period for longer than 240 minutes on each occasionⁱ.*

The AER recently undertook a review of the protections that exist for consumers experiencing payment difficulty under the National Energy Customer Framework (NECF). Prepayment for electricity was mentioned numerous times. In addition to discussing the definition above, the Review also discussed existing definitions of hardship and payment difficulty. It noted that there are concerns that customers on prepayment meters have “been precluded from being eligible for hardship assistance under the framework, as the standardised introductory statement prescribed by the Customer Hardship Policy Guideline only references customers who receive bills, which prepayment meter customers do not receive”ⁱⁱ.

The Review also noted that there are “consumers who may have less access to support and assistance when they experience payment difficulty”ⁱⁱⁱ. Two types of customers are provided as examples: customers of exempt sellers (such as consumers residing in caravan parks) and consumers on prepayment meters.

In terms of equity, it should be noted that prepayment customers are likely to face different electricity retail regulatory protections. For example, White et al. (2024) found that key protections that are ubiquitous for residential customers within urban and regional areas, i.e. life support protections, guaranteed service levels and disconnection reporting, are often absent in remote settlements. In addition, they note that “remote settlements and settlements with majority Indigenous population are respectively 18% and 15% more likely to lack comprehensive regulatory and legal protections compared with non-remote and non-Indigenous settlements”^{iv}.

It is unclear how experiences of prepayment for electricity and different regulatory protections are captured in this version of the National Energy Equity Framework.



Disconnection events should be elevated to be a direct measure of hardship. In this draft version of the Framework, they are the last outcome and listed as an indirect measure. The current formulation of 'direct measures of hardship' mentions coping strategies such as under-consumption of energy. Disconnection and de-energisation events could be more harmful than self-rationing.

Any de-energisation event is a form of acute hardship – “severe and short-term state of energy hardship, whereby a household may experience a sudden change in their situation that causes severe suffering because of their energy bills”.

The term ‘self-disconnection’, while in common use, is a misrepresentation as it incorrectly implies that households were making a voluntary choice to disconnect themselves and does not consider the drivers, i.e. causes or triggers, of hardship. The term ‘involuntary self-disconnection’ emphasizes ‘that the household has not chosen to cease their electricity supply’^v. When mentioning disconnection on page 6, which definition is applied?

Regular de-energisation events are likely to be an extreme hardship – as many prepayment households experience these events often, i.e. our research showed that almost three quarters of households (74%) were disconnected more than ten times in a year^{vi}.

**For more detail on the associations refer to: Longden, T., Quilty, S., Riley, B. et al. Energy insecurity during temperature extremes in remote Australia. Nat Energy 7, 43–54 (2022).
<https://rdcu.be/cDIYQ>**

Most people in Australia pay for electricity in the same way and rarely experience de-energisation events. In some communities, poor quality housing, low incomes, poor health and energy insecurity associated with prepayment exacerbate the risk of temperature-related harm. How does this version of the National Energy Equity Framework capture these differences?

Our study in Nature Energy used daily smart meter data for 3,300 households and regression analysis to assess the relationship between temperature, electricity use and disconnection in 28 remote communities. We found that nearly all households (91%) experienced a disconnection from electricity during the 2018–2019 financial year. Almost three quarters of households (74%) were disconnected more than ten times. Households with high electricity use located in the central climate zones had a one in three chance of a same-day disconnection on very hot or very cold days^{vii}. How does this National Energy Equity Framework capture the frequency, duration and negative effects of disconnection from electricity for remote-living Indigenous residents?



Discussing the dimensions of energy equity is important but the underlying determinants of energy equity should be considered, including access to technological options that help people save money and reduce energy insecurity.

In the AER Towards energy equity strategy, objective 1 is to improve the identification of vulnerability beyond the traditional focus of the energy sector on consumers having difficulty paying their bills and identifying households that require life support. It mentions that the sector needs to consider the broad spectrum of circumstances and situations that people face^{viii}.

When discussing energy inequity, this broad spectrum of circumstances and situations should be extended to considerations of accessing energy technologies, housing with adequate thermal comfort and energy efficiency. There should also be consideration of the importance of self-determination in settler colonial contexts where energy access and infrastructures have long been organised differentially based on geography and race^{ix}.

There are differences in the likelihood of people being able to install rooftop solar and accessing energy from renewable sources. For example, the initial plan for Marlinja was rooftop solar but the Northern Territory government's Department of Housing wasn't prepared to work on the concept, so the community chose to develop a solar microgrid project. As noted: *A key feature of the Marlinja project is an innovative benefit sharing trial developed by Original Power with support from NT government retailer Jacana Energy to share solar cost savings direct to the meters of Marlinja households. For the first time, First Nations pre-paid meter customers will benefit directly and equitably from their own solar investment, similar to the behind-the-meter benefits received by households with rooftop solar^x.* The Marlinja Microgrid an historic achievement as the first First Nations community-owned and grid connected renewable energy project in Australia.

As noted in a paper that discusses rooftop solar, prepayment for electricity and energy insecurity in remote Australia: *Australia is a world leader in per-capita deployment of rooftop solar photovoltaics (PV) with more than three million households realising benefits including reduced energy bills and improved energy security. However, these benefits are unevenly distributed. Research shows First Nations residents of public housing in remote Australia using prepay metering experience frequent 'self-disconnection' from energy services, a known indicator of energy insecurity. Upfront capital costs and an absence of local regulations codifying the ability to connect solar PV have long locked out these households from realising benefits of energy transition in regions host to world class renewable energy generation potential^{xi}.*

Rooftop solar is extremely rare in remote Indigenous communities. There is a case study of rooftop solar for prepay that describes experiences of authors Serena Morton Nabanunga (SMN) and Norman Frank Jupurrurla (NFJ), tenants of House 4, Village Camp, Tennant Creek (Jurnkkurakurr) in Australia's remote Northern Territory (NT). Refer to: Riley, B., White, L. V., Quilty, S., Longden, T., Frank-Jupurrurla, N., Morton Nabanunga, S., & Wilson, S. (2023). Connected: rooftop solar, prepay and reducing energy insecurity in remote Australia. *Australian Geographer*, 54(3), 325–346. <https://doi.org/10.1080/00049182.2023.2214959>

As noted: *In this case study the network provider PWC had no existing precedent to easily facilitate connection of solar with prepay metering, and the initial (solar) connection application was rejected on the basis of regulatory and technical barriers related to a lack of institutional knowledge about the compatibility of solar and prepay, as well as the absence of a prepaid metering option on the relevant paperwork (Mellor 2022)^{xii}. This uncertainty about project sequencing and the lack of an applicable feed-in tariff (FiT) meant delays in connecting the system and in receiving payment for exports, precipitating a complex set of negotiations between residents and their advocates, the*



electricity distributor and (separately) the retailer, preceding installation. PWC and Jacana subsequently committed to ensuring the project progressed on the basis of cooperating on a trial led by Original Power, for the purpose of integrating rooftop solar PV and prepay.

...

Connection agreements are a prerequisite for customers to sell the excess energy they generate to the utility. Without a connection agreement rooftop solar cannot be connected to the grid (or local standalone network as the case may be) for load balancing through import and export. The presence or absence of standard connection agreements is recognised as a key factor enabling or inhibiting the amount and types of renewable energy adopted, effectively governing who and where benefits in energy transition (Theo et al. 2017)^{xiii}.

...

In the NT, the government-owned network provider PWC is responsible for the installation of electricity metering, including prepay metering. Separately, the Department of Territory Families, Housing and Communities (DTFHC) is responsible for approving all works including permission to install rooftop solar on Territory owned, Council managed housing. In this case study DTFHC required an engineer's report verifying structural integrity of the roof and walls as built, to facilitate installation of rooftop PV. DTFHC required the tenants (NFJ and SMN) sign a tenancy variation committing to fund the removal of all solar panels and balance of system components, should the family discontinue tenancy. Liability for these expenses associated with verifying structural integrity, as well as necessary system maintenance and potential future removal were all assured by (registered charity) Original Power, for the purpose of the trial^{xiv}.

Norman Frank Jupurrurla summarises the process by noting that: *"The community has noticed, they talk about our house, they say 'how come you've got solar?'. I explain we had to put up a lot of arguments ... to government, to the housing mob, to Power and Water, to get solar on my roof. The journey here has been a long one, we're really pleased to see that the Northern Territory government is coming to the table. It's taken a lot of persistence and leadership by Original Power and others."*^{xv}



Broader elements of energy equity and energy insecurity are considered in the UK Priority Services Register (PSR) that helps identify customers who have extra communication, access, or safety needs.

The UK has broader discussions of the determinants of energy equity, which has led to better protections and extreme weather policies, and this may be due to the Priority Services Register (PSR) that helps identify customers who have extra communication, access, or safety needs. It also provides a way that people can nominate someone to receive communications and bills from utilities. It provides an avenue for customers to signal that they may be at risk of greater financial hardship. This can be used to trigger hardship policies in advance of payment difficulties.

The typical PSR eligibility criteria are shown below^{xvi}

People can ask to join their supplier or network operator's Priority Services Register if they:

- have reached state pension age,
- are pregnant, or have young children,
- struggle with speaking or reading English.

They can also join if you're living with a disability or a long-term medical condition, including:

- mental health conditions,
- conditions affecting your sight, hearing or sense of smell,
- conditions that mean you need to use medical equipment that requires a power supply.

It is also a possible way of registering who has had a recent change in circumstances:

- are recovering from an injury, or need support after a stay in hospital,
- have been bereaved,
- have lost your job.

The UK is also interesting as it provides targeted assistance during extreme weather events via the Winter Fuel Payment, Cold Weather Payment, the Warm Home Discount, and the Child Winter Heating Payment. Some Councils have a 'Household Support Fund'. An Australian PSR could provide a way to replicate targeted assistance payments. Note that the Treasurer has mentioned that recent energy relief: "could not have been restricted to households below a certain income, because it is not possible to share the relevant information with energy companies"^{xvii}. An Australian PSR would facilitate targeted assistance and have positive impacts for those impacted by energy inequity and energy insecurity.

ⁱ National Energy Retail Rules – rule 141(2) – Dealing with payment difficulties: https://energy-rules.aemc.gov.au/nerr/354/45386#rule_141.2

ⁱⁱ Page 21 of AER (2024) Review of payment difficulty protections in the National Energy Customer Framework Issues paper <https://www.aer.gov.au/system/files/2024-05/AER%20-%20Review%20of%20payment%20difficulty%20protections%20in%20the%20NECF%20-%20Issues%20paper%20-%20May%202024.pdf>

ⁱⁱⁱ Page 24 of AER (2024) Review of payment difficulty protections in the National Energy Customer Framework Issues paper <https://www.aer.gov.au/system/files/2024-05/AER%20-%20Review%20of%20payment%20difficulty%20protections%20in%20the%20NECF%20-%20Issues%20paper%20-%20May%202024.pdf>

^{iv} White, L.V., Riley, B., Wilson, S. et al. Geographies of regulatory disparity underlying Australia's energy transition. *Nat Energy* 9, 92–105 (2024). <https://doi.org/10.1038/s41560-023-01422-5>

^v NTCOSS Cost of Living Report—Issue 26 (NTCOSS, 2019) <https://ntcross.org.au/wp-content/uploads/2019/12/NTCOSS-Cost-of-Living-Report-Utilities-No.-26-Dec-2019-amended.pdf>

^{vi} Longden, T., Quilty, S., Riley, B. et al. Energy insecurity during temperature extremes in remote Australia. *Nat Energy* 7, 43–54 (2022). <https://rdcu.be/cDIYQ>

^{vii} Longden, T., Quilty, S., Riley, B. et al. Energy insecurity during temperature extremes in remote Australia. *Nat*



Energy 7, 43–54 (2022). <https://rdcu.be/cDIYQ>

^{viii} AER (2022) Towards energy equity – a strategy for an inclusive energy market <https://www.aer.gov.au/system/files/AER%20-%20Towards%20energy%20equity%20strategy%20-%20October%202022.pdf>

^{ix} Riley, B., White, L. V., Quilty, S., Longden, T., Frank-Jupurrurla, N., Morton Nabanunga, S., & Wilson, S. (2023). Connected: rooftop solar, prepay and reducing energy insecurity in remote Australia. *Australian Geographer*, 54(3), 325–346. <https://doi.org/10.1080/00049182.2023.2214959>

^x First Nations Clean Energy Network (2024) https://www.firstnationscleanenergy.org.au/future_of_marlinja_looks_bright_thanks_to_solar_power

^{xi} Riley, B., White, L. V., Quilty, S., Longden, T., Frank-Jupurrurla, N., Morton Nabanunga, S., & Wilson, S. (2023). Connected: rooftop solar, prepay and reducing energy insecurity in remote Australia. *Australian Geographer*, 54(3), 325–346. <https://doi.org/10.1080/00049182.2023.2214959>

^{xii} Mellor, L. 2022. “Personal Communication: Original Power.” August.

^{xiii} Theo, W. L., Lim, J. S., Ho, W. S., Hashim, H., & Lee, C. T. (2017). Review of distributed generation (DG) system planning and optimisation techniques: Comparison of numerical and mathematical modelling methods. *Renewable and Sustainable Energy Reviews*, 67, 531-573.

^{xiv} Riley, B., White, L. V., Quilty, S., Longden, T., Frank-Jupurrurla, N., Morton Nabanunga, S., & Wilson, S. (2023). Connected: rooftop solar, prepay and reducing energy insecurity in remote Australia. *Australian Geographer*, 54(3), 325–346. <https://doi.org/10.1080/00049182.2023.2214959>

^{xv} Riley, B., White, L. V., Quilty, S., Longden, T., Frank-Jupurrurla, N., Morton Nabanunga, S., & Wilson, S. (2023). Connected: rooftop solar, prepay and reducing energy insecurity in remote Australia. *Australian Geographer*, 54(3), 325–346. <https://doi.org/10.1080/00049182.2023.2214959>

^{xvi} Ofgem - <https://www.ofgem.gov.uk/join-your-suppliers-priority-services-register>

^{xvii} ABC News Online (2024) <https://www.abc.net.au/news/2024-05-15/energy-bill-relief-to-every-household-explained/103847656>