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Perspective

Disconnected during disruption: Energy insecurity of Indigenous Australian prepay customers during the COVID-19 pandemic

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ABSTRACT

Energy policy measures aimed at mitigating the impacts of energy insecurity during the first years of the COVID-19 pandemic, such as moratoriums on disconnection from electricity, were widespread. In Australia, early pandemic safeguards against electricity disconnection were successful in temporarily protecting most people. However, their application was uneven. For remote-living Indigenous community residents, who are required by policy or elect to use prepay metering and are known to experience frequent 'self-disconnection', energy insecurity continued as the impacts of the pandemic accrued. The risks associated with the regular de-energization of prepay households have long been overlooked by government reporting and this contributed to a lack of visibility of energy insecurity and available protections for this group during the pandemic response. In contrast to the rest of Australia, energy insecurity in the form of disconnections remained unrelentingly high or worsened for prepay households during this time. COVID-19 magnifies pre-existing health and socio-economic inequities. There is a need to pay closer attention to the rationales and impacts of energy policy exceptionalism if we are to mitigate the potential for compounding impacts of energy insecurity among specific groups, such as Indigenous Australian prepay customers, including during times of crisis.

COVID-19 response in Australia

In response to the COVID-19 pandemic, far-reaching social measures including income support payments and policies designed to alleviate energy insecurity were applied across Australia [1,2]. Even though this required unprecedented levels of political cooperation across jurisdictions and levels of government, it happened in a matter of weeks. In an extreme experiment in poverty alleviation, a coronavirus income supplement was paid nationally to all unemployed Australians, effectively temporarily doubling the income of welfare recipients [2,3]. Energy policy responses complemented a suite of broader protections that were enacted to make it easier, safer, and more comfortable for people to stay at home, during lengthy periods of lockdown and quarantine [4]. For most Australians, this included a guarantee that their power would not be disconnected even if they could not pay the bill, providing a welcome reprieve from energy insecurity for tens of thousands of households [5]. The effect of these measures was widespread, but it was uneven, and not all households were impacted nor supported to the same extent within and across subnational jurisdictions.

In Australia, the importance of access to energy is recognised and codified within consumer protections - via laws, regulations and frameworks evolved iteratively and arranged spatially across a federation of six states and two self-governing territories. Remedial policy-making resides with state and territory governments and available protections generally find greatest effect within the consensus oriented cooperative arrangements of the National Energy Market (NEM), which

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spans Australia's eastern seaboard, and where a relatively harmonised customer protection framework operates. Beyond the NEM, regulatory frameworks differ between jurisdictions, resulting in a complex mosaic of consumer protections across the country. On 25 March 2020, the Australian Energy Regulator (AER) outlined "reasonable expectations of energy companies to protect householders and small business customers during the COVID-19 pandemic" and called for utilities operating within the regulatory framework of the NEM to provide relief to any households experiencing energy stress, and to make best efforts to avoid disconnection [5]. Many measures came into effect immediately and lasted until July 2020, after which they were revised or reapplied. For example, in the state of Queensland, households automatically received a rebate credited to their energy bills. In Victoria, New South Wales and South Australia, households benefitted from deferred or rebated network charges and disconnection deferrals, while a variety of state and territory-based schemes provided energy vouchers to customers experiencing hardship of between AUD$50 – AUD$200.

Reflecting the relative rarity of prepay metering in Australia, where an absence of local regulatory conditions prohibits its use in the most populous states, remedial policymaking during the pandemic focused on the predominance of customers who post pay. Nonetheless, prepay is ubiquitous in many Aboriginal and Torres Strait Islander communities in remote Australia including in north-west Western Australia, off-grid parts of Queensland and the remote Northern Territory - where it has been in use since the early 1990s. Prepayment can appeal to utilities and residents for different reasons, several of which overlap. Some households report being able to avoid running up unsustainable debts thus avoiding costly disconnection and reconnection fees, while the utility avoids the accrual of bad debts resulting from non-payment. However, this policy divergence requires a distinction be made between 'disconnection', which is typically the last resort of responsible policymakers, and 'self-disconnection' which is a known risk navigated daily by prepay customers. Prepay has the practical effect of privatising experiences of 'self-disconnection' within the lives of income poor households, whose energy insecurity is then omitted by utilities in public facing reporting[1] [6–8]. In this way, prepay customers' energy insecurity - defined as an inability to adequately meet household energy needs - is rarely tracked or disclosed in an organized or transparent way [9].

Here we argue this lack of visibility prior to COVID-19 combined with an absence of protections during the pandemic response meant that remedial measures largely excluded or bypassed the more than 10,000 Indigenous households using prepay living in non-interconnected regions, shown at Fig. 1. Consequently, experiences of household energy insecurity remained unrelentingly high or deteriorated for this cohort during the pandemic. The connection between pandemic-related deterioration of energy insecurity among vulnerable groups and energy justice has been considered from a range of international and social perspectives [10–12]. Energy justice is an extension of environmental justice theory and refers to energy systems through the lens of distributional, procedural and recognition justice [13,14]. The concept integrates social justice dimensions into the energy discourse, enabling a more nuanced evaluation of policy impacts upon vulnerable and marginalised groups [15]. Prior studies have highlighted the ways in which energy policy failed to support priority groups during the pandemic, exposing and amplifying pre-existing energy injustices [10–12]. Our perspective contributes to this emerging focus by scrutinising pandemic policy responses in Australia, while drawing attention to opportunities for policy solutions.

Disconnected during disruption

During the pandemic the number of disconnections for non-payment in Australia was significantly reduced for the 6,662,723 households living within NEM regulated jurisdictions - with 29,700 fewer customers disconnected in 2020/21 than in the year prior [16]. Yet prepay customers were seldom protected from the known harms of 'self-disconnection' during COVID-19, except in the state of Western Australia where a truncated moratorium period applied [17]. Despite limited and heterogeneous discretionary safeguards at local levels, national level protections failed to address the specific needs of prepay households in remote areas. Protections that were offered, such as a one-off payment of $200 directly credited to prepay meters in Western Australia during the first month of the pandemic and brief periods in which disconnection functionality was disabled for some communities but not others, were less comprehensive than the disconnection moratoriums experienced by NEM customers. The routine de-energisation of prepay households for non-payment persisted even as COVID case numbers increased during the hot summer months, when extreme heat amplifies self-disconnection rates [18–20].

Fig. 2 shows that in Western Australia approximately 1300 remote-living Indigenous prepay households experienced 30,307 self-disconnection events in 2020/21, down only marginally from 31,969 incidences in 2019/20. The overall number of multiple extended self-disconnections however increased, from 1295 in 2019/20 to 2454 in 2020/21. Recent reporting indicates that 66,841 involuntary self-disconnection events were reported for 2021/2022, or approximately 46 disconnections per household, with the number of multiple extended self-disconnections increasing to 3349 [21]. The utility explains the increase in multiple extended self-disconnections during COVID as being associated with:

"… narrowing of [the] disconnection window and extension of emergency credit [which] has led to less urgency of customers to purchase credit, along with more people returning to community during the COVID crisis, resulting in higher energy usage (higher cost) and more disconnections per household [17]."

These experiences of prepay customers are conspicuously at odds with outcomes for regional post pay customers within the same jurisdiction, for whom the likelihood of being unable to meet essential household energy needs during the pandemic reduced precipitously, from 2741 disconnections reported in 2019/20 to 251 during 2020/21 [17,22]. Despite energy policy measures introduced by the Western Australian government in response to the pandemic being perhaps the most proactive and extensive in the country, Indigenous prepay households in the north of the state, where prepay is common, continued to experience frequent involuntary self-disconnection during this time. Moreover, this accords closely with experiences of prepay customers across the border, in Australia's remote Northern Territory. In 2019/20, and inclusive of the first four months of COVID-19, 2049 households using prepay in the four major centres of Darwin, Katherine, Tennant Creek, and Alice Springs recorded 69,888 self-disconnections, or 34 disconnections per household for an average duration of 380 min. During the first year of the pandemic (2020/21) this increased to 84,439 self-disconnection events (shared by 2173 households) – approximately 39 times per household per annum for an average duration of 504 min [23–25].

Little is known about the extent to which COVID-19 related lockdowns precipitated or compounded self-disconnection events. However, one likely factor is that access to community stores, where residents purchase (or 'top-up') prepaid power cards, was restricted during lockdowns. Without the kinds of support available to customers within the NEM, power to remote homes was routinely compromised as COVID-19 spread in remote communities. The Utilities Commission of the Northern Territory notes that in isolation, and with limited comparison

[1] Utilities use the terminology 'self-disconnection' to describe the immediate discontinuation of supply of electricity to the household because the meter has no credit, including emergency credit. Critics use the term 'involuntary self-disconnection' to highlight that few (if any) households actively choose to be disconnected from energy services due to their incapacity to pay, and further, that having an electricity connection is a prerequisite to accessing electricity for basic household energy needs.

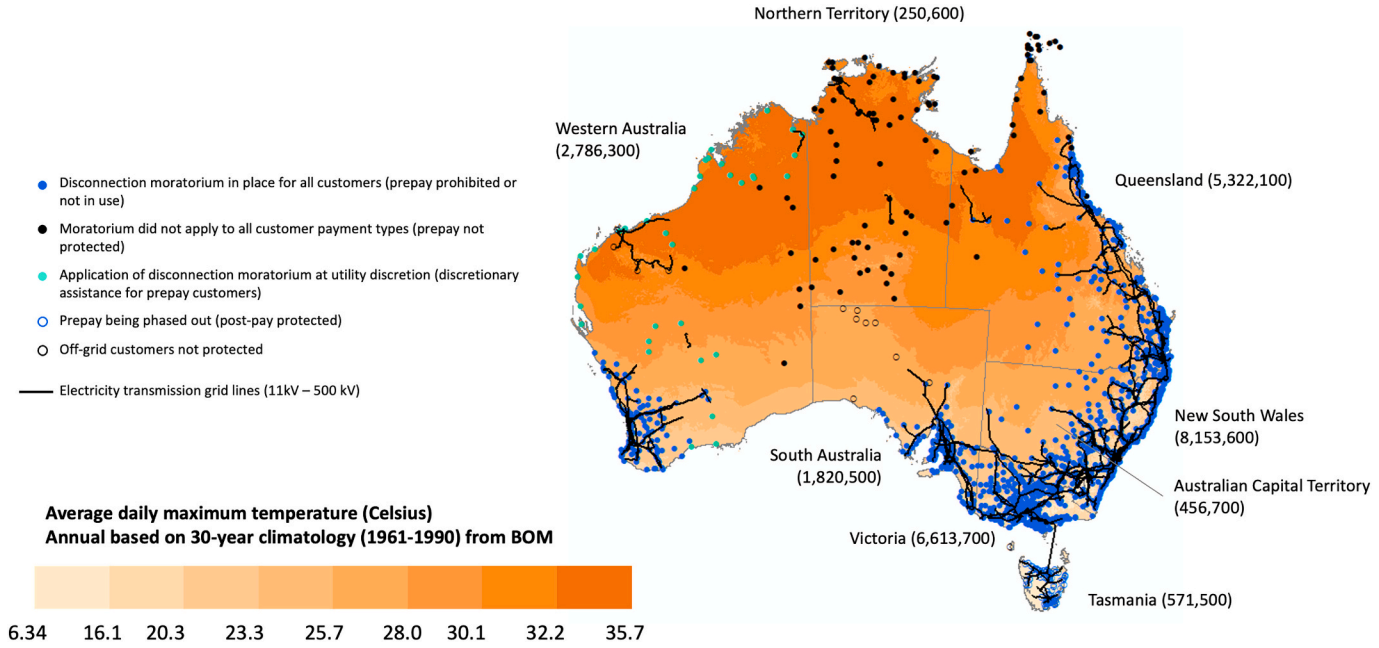

Fig. 1. Spatial variation in the application of disconnection moratoriums across Australia during the dates of lockdowns for the period March 2020 – March 2022. Bright blue dots indicate disconnection moratorium consistent with the Australian Energy Regulator's Statement of Expectations.

to historical data, the total number of self-disconnections and their duration appears very high and concedes that the deterioration in energy security for prepay households experienced during 2020/21 is concerning [26].

Disconnection is dangerous and it likely increased the spread of COVID-19

While such high rates of disconnection during the pandemic flies in the face of national and international norms, remedial energy policy-making responses globally were also uneven. As the virus spread, national, regional, and municipal governments and regulators across the world sought to enact remedial measures including many aimed at reducing the frequency and duration of disconnection from electricity [27]. Immediate safeguards against disconnection typically complemented health responses (i.e., lockdowns and other social isolation policies) that sought to limit the human and economic impacts of COVID-19. Different jurisdictions pursued diverse strategies, including moratoriums on energy disconnection, free or discounted energy reconnection, tariff reductions, subsidies, repayment freezes, personalized hardship supports and in some cases the provision of fuel for those living off-grid [28]. Internationally, the application and efficacy of measures varied, for example a recent analysis from the US shows that while some states actively prevented utility disconnections, in the first two years of the pandemic more than 3.6 million households experienced disconnection for non-payment, predominantly in the states of Florida, Georgia, Indiana, Pennsylvania, and Illinois [29]. The intersecting crises, of energy insecurity and the inequitable distribution of adverse health and environmental effects during the pandemic, have led to calls for relief to be directed with particular attention paid to those households known to be experiencing energy insecurity [10,11,30].

For many Indigenous residents of remote communities and towns where prepay is prevalent, energy security has long been far from guaranteed. Our research team found that prior to the pandemic, for 3300 households living in 28 communities in the Northern Territory where prepay is mandated, involuntary self-disconnection events were experienced by almost all (91 %) households during the 2018/19 financial year, while almost three quarters (74 %) of households were disconnected more than ten times [31]. Despite the known risk of disconnecting, and the punitive and potentially life-threatening effect of disconnection upon wellbeing, prepay has been introduced on a mandatory basis for a further 1050 customers living across 15 off-grid communities and associated homelands in South Australia from 1 July 2022 [6]. Data on self-disconnection rates for more than 4500 card-operated meter customers are not publicly available for the state of Queensland during this time. Data for 141 Remote Essential and Municipal Services (REMS) Aboriginal communities in Western Australia are not available during this time, while data for 72 remote Indigenous Essential Services (IES) communities in the Northern Territory are similarly not publicly available for the period discussed. Households using prepay often have constrained choices and are at greater risk of experiencing energy insecurity than the general population. These households often face challenging trade-offs - between paying for electricity to maintain basic household functions and paying for other essentials such as food and fuel [32]. High rates of self-disconnection from energy services have real-world consequences that can be severe, particularly for the elderly, the unwell or the very young [33] [34]. Frequent interruptions to refrigeration inevitably mean that food and vital medicines spoil in the heat – they should not be consumed and require disposal before repurchasing [35]. For remote living Indigenous community residents, many of whom live in deep poverty, the initial boost to incomes associated with the coronavirus income supplement no doubt acted as a welcome temporary reprieve [3,36]. However, data shows that maintaining a reliable electricity connection remained challenging. Low-income groups typically spend a much larger fraction of their income on electricity and are disproportionately impacted by energy stress [37–42]. During the pandemic, social restrictions required people to spend more time in their homes, subsequently increasing energy demand, while the co-occurrence of COVID-19 and extant energy insecurity has synergistic and compounding health effects [43,44]. In Australia, this situation is further exacerbated by temperature extremes, which increase both prepay households' reliance upon energy services and the likelihood of those services being discontinued [45,46].

On 27 March 2022, concerned that Aboriginal and Torres Strait Islander households continued to be disconnected from energy services even as they were instructed by authorities to socially distance and isolate at home, a coalition of eight Indigenous organizations and allied

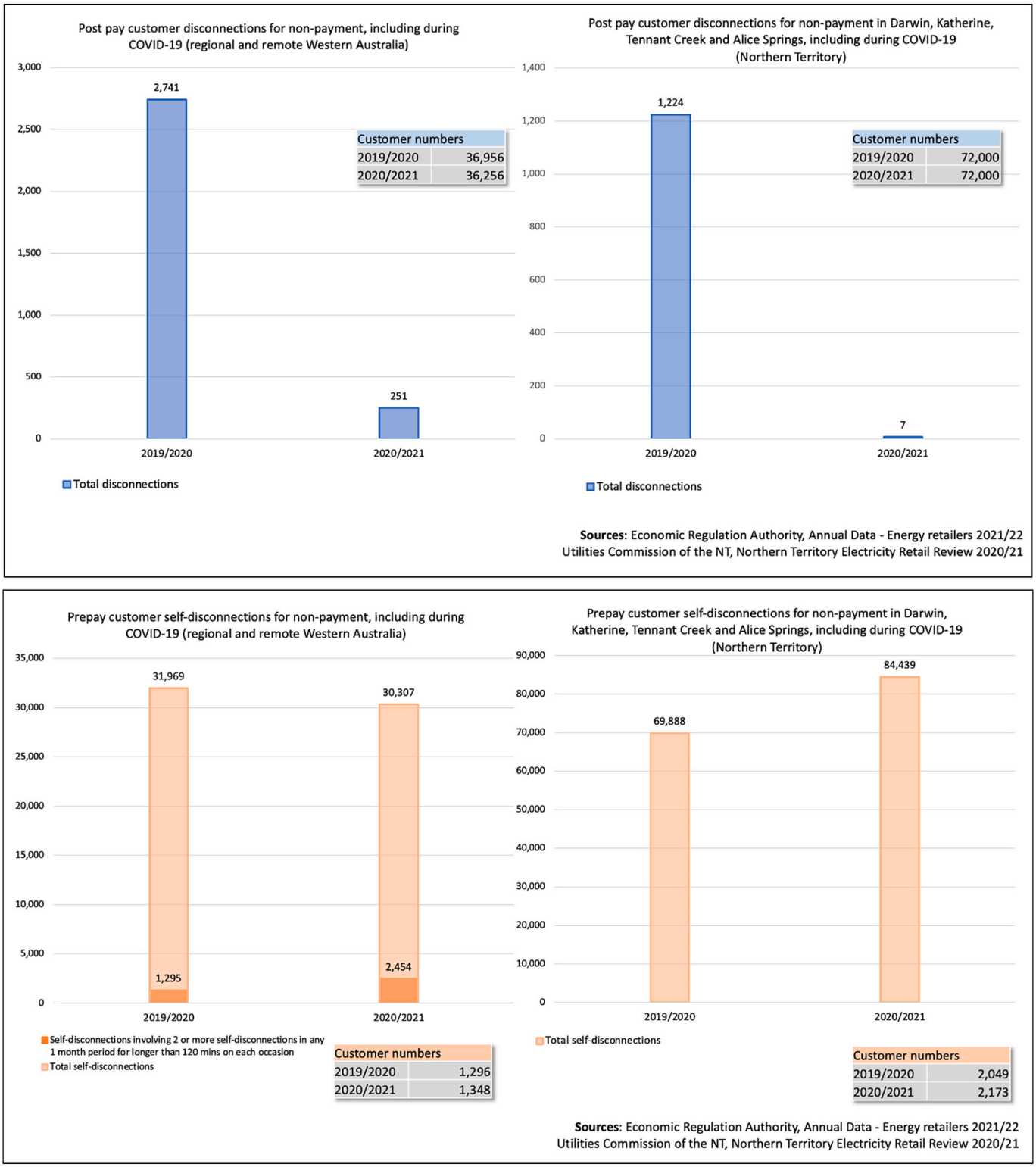

Fig. 2. Change in disconnection rates for post pay (blue) and prepay (orange) customers in Western Australia and the Northern Territory during COVID-19.

health groups in the Northern Territory called for a moratorium on disconnections [47]. The signatories requested an immediate end to electricity disconnections for the duration of isolation or lockdown orders, and for authorities to rule out any attempts at debt recovery, shown at Fig. 3**.** These groups reported that involuntary self-disconnection events due to non-payment were having the effect of encouraging people to move between households, creating the potential to drive population mobility between infectious and non-infectious households [48]. According to Aboriginal organisation Original Power, the high cost of electricity was a big problem for residents isolating at home with COVID positive family members. They reported:

"Lots of people are moving around just to use the neighbour's power for cooking or to stay cool, and it's spreading the virus more. The only way residents can make it through this crisis is by staying isolated, and

16 February 2022

Dear Chief Minister,
cc: NT COVID 19 Regional and Remote Taskforce

Re: Call for Moratorium on Electricity Disconnections in Indigenous communities during NT COVID-19 Response

We write on behalf of Aboriginal frontline health and social service providers and communities affected by Northern Territory and Commonwealth COVID-19 public health measures. We outline our concern that household energy insecurity is creating additional hardship for affected residents and undermining collective efforts to manage outbreaks, particularly in the setting of impending extreme weather across the NT in the coming weeks.

We urge your government to support these public health measures by introducing an immediate moratorium on electricity disconnection for communities or households subject to lockdown or household isolation requirements.

Such a moratorium should rule out debt accrual or recovery to protect vulnerable residents from additional financial hardship and should apply for the duration of isolation or lockdown orders.

Signed:

Purple House
Tangentyere Aboriginal Council
Julalikari Council Aboriginal Corporation
Australian Medical Association Northern Territory
AMSANT
Housing for Health Incubator
Australian Lawyers for Remote Aboriginal Rights
Yinjiya Guyula MLA
Original Power

Fig. 3. On the 22 February 2022, eight Northern Territory organizations (including energy, health and legal service providers) called for a moratorium on electricity disconnections for prepay customers during COVID-19.

they need secure power to do that" [49].

On the need for change

The reasons for high rates of disconnection from energy services in remote communities are complex and prepayment is not the only contributing factor. Generally lower incomes, and limited access to thin labour markets in remote regions subject to temperature extremes, interact with structural factors such as lower energy efficiency of public housing and high energy use fixed appliances to drive energy insecurity [20]. However, this should not absolve state, territory, and federal governments of their obligation to protect all citizens equally, including during times of crisis [11]. Disconnection moratoriums enacted in response to the COVID-19 pandemic provided a welcome, albeit temporary, glimpse of a more equitable energy system for many Australians. Now that these measures have come to an end, there is an urgent need to think carefully about why prepay customers were – and continue to be – treated differently in relation to available energy protections than post pay customers. The use of prepayment is typically justified by decision-makers as a means of offering low-income households "a way to better manage energy debt" [21], yet it creates complex circumstances under which the avoidance of debt is traded for the "normalisation of energy insecurity under prepayment" [6]. In Australia's Northern Territory, Aboriginal led organizations have called for a comprehensive reconsideration of available protections for prepay customers noting that many aspects need to be addressed; including the relationship between retailers and prepay customers; the options available to remote living households for metering and delivery of energy services (including access to rooftop solar); those protections available to prepay customers and the extent to which they differ to post pay; and the information provided to pre-pay customers about their energy consumption and expenditure [50]. Greater protections from disconnection events, improved flexibility of payment options and greater visibility and transparency of data and reporting, these would all do much to improve the current situation facing prepay customers. Moreover, remote living Aboriginal and Torres Strait Islander residents live on lands host to the best solar resources in the world, and locally abundant solar resources have the potential to mitigate experiences of energy insecurity – if the benefits of a transition to clean energy are shared directly with households. Yet upfront capital costs combined with both the lack of existing precedent and an absence of local regulations codifying the ability to connect solar PV to prepay metering, have long locked out prepay households from realizing the benefits associated with rooftop PV. There currently exist different and additional barriers for prepay customers living in remote communities, where state and territory governments act as both landlord (for public housing residents) and the monopoly energy provider. There remain significant opportunities for utilities and relevant state and federal government agencies to work together on reforming disconnection policies and deploying renewable energy to enhance energy security for priority communities, including Aboriginal and Torres Strait Islander public housing residents who prepay for access to essential energy services.

While the national moratorium on disconnection provided to post pay customers during COVID-19 meant that experiences of energy

insecurity decreased for most Australians, remote living Aboriginal and Torres Strait Islander prepay customers did not receive commensurate protections. Those already most disadvantaged during COVID-19, were in many cases the same households that were experiencing energy insecurity prior to the crisis. This inequality brings into sharp relief the disparities underlying reliable energy services within Australia. While there are few published metrics relating to avoiding or reducing the frequency and duration of involuntary self-disconnection events experienced by prepay customers, what data there is shows that frequent de-energization of Indigenous prepay households continued and, in many cases, worsened during the COVID-19 pandemic.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Data availability

Data used in this paper were sourced from the Western Australian Economic Regulation Authority Annual Data – Energy Retailers 2021/2022, based on data reported by the regional energy utility. Data for regulated communities within the Northern Territory was sourced from the Utilities Commission of the Northern Territory's Electricity Retail Review 2020/21. Numbers of residential prepay self-disconnection events reported in the Northern Territory for 2019/20 and discussed in this paper represent a significant underestimate, due to; data for the month of July 2019 being unavailable to the Utilities Commission and published data pertaining only to those residential prepay households within regulated networks in the major centres of Darwin, Katherine, Alice Springs, and Tennant Creek. The frequency and duration of self-disconnection events are not reported for a further 72 unregulated off-grid remote communities in Australia's Northern Territory during this time [46]. Additionally, prepay was introduced on a mandatory basis for approximately 1050 customers living in 15 off-grid Aboriginal communities in the state of South Australia, from 1 July 2022. Data for the first four mandatory prepay communities are yet to be made publicly available by the Essential Services Commission of South Australia [6]. Data on self-disconnection rates for card-operated meter customers in the state of Queensland are not publicly available. Prepay for residential customers has been discontinued in the state of Tasmania since 2019. Data on disconnection moratoriums was collected by the research team from publicly available regulatory documents and government and utility press releases. Data was mapped according to whether prepayment was legislatively permitted or prohibited in the relevant jurisdiction during the period of investigation. Data on average daily maximum temperatures across Australia was sourced from the Australian Bureau of Meteorology (http://www.bom.gov.au/jsp/ncc/climate_averages/temperature/index.jsp). Data on Australian grid connectivity was sourced from NationalMap (https://nationalmap.gov.au/renewables/). Population estimates used in Fig. 1 are from the Australian Bureau of Statistics' June 2022 release of projections based on 2021 census data.

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