Energy efficiency in the Australian Social Housing Sector: Barriers along avenues of assistance

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Abstract: Energy affordability is an increasing challenge for social housing tenants. In recognition of this, many social housing providers (SHPs) across Australia are placing stronger strategic emphasis on improving the energy performance of their stock (Milligan et al., 2015). There are a number of avenues through which SHPs can access assistance from local, state and federal government agencies to support this improvement. Support ranges from provision of information, funding to support implementation of upgrades to existing stock, and grant and low-cost loans to encourage improved energy performance in new constructions. Despite the presence of both organisational desire and government support, energy efficiency improvements in the social housing sector have to date largely been limited. Activity has been restricted to new constructions, and small proportions of existing stock managed by SHPs with the capacity to deliver complex upgrade programs. This paper explores the numerous financial, structural and institutional barriers that hinder energy efficiency improvements through 21 interviews with senior management at SHPs across metropolitan and regional NSW. These multilayered barriers are mapped out, and their prevalence among SHPs of different sizes and tiers of registration is explored. Successful strategies that some SHPs have employed to overcome these barriers are discussed. Through the interviews, the sector’s general framing of energy efficiency primarily as an asset management issue is highlighted, contrasting its motivations of improving tenant wellbeing and the liveability of the dwellings.

Key words: Social housing; Australia; energy efficiency; housing policy; institutional barriers

Introduction
Recognising the increasing challenge of energy affordability for their tenants, many social housing providers (SHPs) across Australia have placed strong strategic emphasis on improving the energy efficiency of their stock (Milligan et al., 2015). A number of government assistance programs exist to assist SHPs on this front, however the complexities in accessing these programs and a perceived lack of value (particularly when co-funding is required), mean that these opportunities are not always taken up. In the current paper, we present the findings from recent interviews with senior management of SHPs and other sector stakeholders regarding the numerous financial, structural and institutional barriers that hinder energy efficiency improvements across the NSW social housing sector. We also provide insight into the strategies that some SHPs have employed to overcome these barriers.

Background and literature review
Overcoming barriers to better quality social housing, whether related solely to energy efficiency or not, is particularly important given governments’ desire and plans to expand the sector, especially through public and private investments in their provision (Milligan et al., 2016). A number of programs and initiatives have been introduced by the Australian Federal and State/Territory Governments in recent years to facilitate this expansion, including through direct investments for new construction (e.g. the National Rental Affordability Scheme (DSS, n.d.) and the Social Housing Initiative of the National Building Economic Stimulus package (Plibersek, 2009)), management transfer programs (Pawson et al., 2016), and estate renewal and mixed tenure redevelopment programs (Eastgate, 2016). Some of these include mandates for small-scale energy efficiency upgrades (e.g. Blunden et al., 2017); new constructions are also expected to adhere to state and national building standards, including those concerning energy and water efficiencies such as the Nationwide House Energy Rating Scheme (NatHERS) and Building Sustainability Index (BASIX) (NSW only). Building energy regulations were introduced in 2004 in NSW; as such there is a substantial proportion of the social housing stock that will have been constructed prior to these requirements, and are therefore likely to be performing poorly in terms of energy efficiency. These buildings will need upgrading to ensure appropriate energy performance over the building lifetime.
A review of the existing literature regarding social housing and energy efficiency improvements to existing dwellings identified several common barriers that the sector faces. These studies, both Australian and international (Fusion21, 2011; McCabe et al., 2018; Urmee et al., 2012) typically grouped these barriers into themes, such as financial, structural, social and organisational constraints, with many being pertinent in the Australian context. Split incentives, where a disconnect between those who finance the upgrades and those who primarily or solely reap the benefits, were identified through our review as remaining a significant barrier for SHPs to improve the energy efficiency of their stock (Halldorsson et al., forthcoming). In Australia, it is more common for community housing providers (CHPs) to manage properties and tenancies on other owners’ behalf (including state housing authorities, or private owners such as through the National Rental Affordability Scheme; Milligan et al., 2016). This is in contrast to the social housing sectors in Europe and the United Kingdom (UK) where most SHPs and housing associations own the properties they manage (e.g. Smyth, 2013). This ownership structure introduces an additional split in the incentives for energy efficiency, whereby some of the multiple benefits of energy efficiency, most notably increased asset value, will not accrue to the party responsible for funding the upgrade. This is reported to have discouraged Australian SHPs from funding upgrades through debt-financing, in addition to the traditional split between landlord and tenant, where the tenant reaps the direct benefits of reduced bills or increased thermal comfort.

Other common barriers highlighted in the literature include:

- a lack of policy and government interventions, i.e. there are no clear directives on what areas of improvements SHPs should focus on (Fusion21, 2011; Karvonen, 2013; Kempton, 2014);
- a perception of retrofits being high risk, particularly in relation to what Kowlaska-Pyzalska (2017) identifies as the ‘intention-behaviour gap’, brought along largely by fast-changing technologies, so that upgrades may become outdated before its lifespan (Fusion21, 2011; McCabe et al., 2018; Urmee et al., 2012);
- a perception that residents may not have the ability and/or knowledge to operate the new upgrades to their optimum capacity (ACOSS, 2013; McCabe et al., 2018; Urmee et al., 2012);
- a lack of information on the existing housing portfolio, resulting in uncertainty regarding the best methods to upgrade properties (Kempton, 2014; Urmee et al., 2012);
- significant time and financial investment to implement upgrades that are not seen as core business, in a sector with limited financial capacity and which is heavily debt-financed (Fusion21, 2011; McCabe et al., 2018; Milligan et al., 2016); and
- limited (direct and co-funding) financial support, which can lead to difficulties for SHPs to establish business cases to support the upgrades (Chegut et al., 2016; Eames et al., 2013; Fusion21, 2011).

These barriers, along with several others more unique to the Australian and NSW context, were all reported by our interviewees to varying extents and are discussed further in the current paper.

Internationally, governments and non-profit organisations have employed a range of approaches to support SHPs to overcome these barriers and to improve the energy efficiency of their stock. The most common of these was direct and indirect financial assistance. In NSW, the Department of Planning, Industry and Environment’s (DPIE, formerly the NSW Office of Environment and Heritage) Home Energy Action Program (HEAP) is one such co-funding example, where SHPs can apply for up to 50% co-funding for approved energy efficiency upgrades (ranging from low-energy lighting to insulation and on-site photovoltaic generation) to existing dwellings. Eligible households can also purchase energy efficient whitegoods at discounted prices. Similar financial assistance programs also exist in other Australian jurisdictions, both in the form of on-going programs and as one-off initiatives (Liu et al., 2016). Nationally, the Clean Energy Finance Corporation (CEFC) has a community housing program, where low-cost loans for the construction of highly efficient new social housing can be arranged on the SHPs’ behalf (CEFC, n.d.). In the United States (US), the Department of Energy has been offering the Weatherization Assistance Program since the mid-1970s, where eligible households, including social housing tenants,

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1 Further information on tangible actions that can be taken by SHPs to improve their housing stock can be found in Daly et al. (2019)
can access home-based upgrades to improve energy efficiency and to reduce energy expenditure (US DoE, n.d.).

Other common assistance approaches include the funding of pilot programs, philanthropic endowments, regulatory reforms, and the provision of information and guidance. Pilot programs are often funded to test innovative approaches to improving energy efficiency. Examples of these include the European Commission’s Intelligent Energy Europe Program (Power House, n.d.), France’s collaborative housing model (Czischke, 2018), and Australia’s Low Income Energy Efficiency Program (DIIS, 2016). These pilots may at times be funded by philanthropy, such as the Solarcity Community Energy Scheme in the UK (BBC, 2017). However, often the results from pilot programs are not scaled-up to ensure wider implementation, partly an outcome of a lack of subsequent funding commitment, thereby limiting their broader potential (Liu et al., 2017).

Outside of funding assistance, governments may encourage or mandate SHPs to implement energy efficiency upgrades via regulatory reforms. While not tenure specific, energy-related minimum standards policies have, for example, been in place for a decade across Europe (EU, 2010), as has also been more recently introduced in New Zealand (Cabinet Social Policy Committee, n.d.). In the UK, the decade-long policy program Decent Homes (DETR, 2000) encouraged, incentivised and mandated social and private landlords to upgrade their stock to an agreed ‘decent’ standard. There are currently no energy-related minimum requirements for social housing in Australia other than for new constructions.

Governments also play important roles in providing accurate and timely information and guidance to SHPs. These may involve the promotion of assistance programs, or guidance on low- and no-cost upgrades that SHPs and tenants can perform themselves without significant external input. In the US, for example, the Environmental Protection Agency provides guidance on the development and retrofitting of energy efficiency measures via its State and Local Climate Energy Program (US EPA, 2011). Such information and guidance is typically available online via dedicated websites or webpages linked to state agencies. As we discuss, many SHPs suggested improvements are needed on the formats and means by which this information and guidance is provided.

**Methodology**
This research employed a qualitative approach involving an international literature and program review, and semi-structured interviews with 21 representatives of SHPs in NSW and four sector stakeholders. Sector stakeholders included a peak body, a community project and two consultants who assisted SHPs in accessing external funding, including funding specifically for energy efficiency upgrades.

The SHP interviews took place between November 2017 and June 2018, and focused on:
- the importance of energy efficiency in social housing stock management,
- whether and how energy efficiency upgrades are incorporated in their strategic plans,
- what assistance programs (if any) they were aware of and/or have accessed,
- the nature and extent of barriers that prevented them from implementing these plans, and
- their qualitative reflections of the outcomes of upgrades implemented

Participants were recruited via email to the contact information included in a list of registered CHPs published by NSW Family and Community Services (https://www.facs.nsw.gov.au/download?file=332270) and were selected using a stratified sampling approach to reflect tiers of registration, sizes, geographies of operation, ownership/management ratios, and specialisations. Initial invitations and follow-ups were sent to 53 SHPs, where 26 did not respond and six declined due to lack of organisational capacity and other reasons. The resulting sample of 21 SHPs, therefore, overly represent larger organisations (notably those registered as Tier 1 providers under the National Regulatory System for Community Housing Providers, NRSCH; Table 1). Seven SHPs operated solely within the Sydney metropolitan area, 11 in regional NSW only, and three in both metropolitan and regional NSW.

Interviews with sector stakeholders were conducted during July and August 2018 to gain a broader view of the barriers faced by and processes SHPs went through to access potential funding for energy
efficiency upgrades. Participants were recruited via a snowballing technique, whereby the most relevant stakeholders were recommended to the research team by the SHP interview participants.

All interviews were digitally recorded and professionally transcribed. All transcripts were entered into NVivo and analysed thematically, where the interview topic guides served as the basis of analysis. This paper focuses specifically on the financial, structural and institutional barriers that hindered different SHPs’ implementation of energy efficiency upgrades and the strategies employed to overcome them.

Table 1. Overview of interview participants

<table>
<thead>
<tr>
<th>Registration</th>
<th>No.</th>
<th>Dwellings managed</th>
<th>No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>NRSCH Tier 1</td>
<td>12</td>
<td>&lt; 50</td>
<td>4</td>
</tr>
<tr>
<td>NRSCH Tier 2</td>
<td>6</td>
<td>51-100</td>
<td>2</td>
</tr>
<tr>
<td>NRSCH Tier 3</td>
<td>4</td>
<td>101-500</td>
<td>2</td>
</tr>
<tr>
<td>PARS*</td>
<td>1</td>
<td>501-1,000</td>
<td>4</td>
</tr>
<tr>
<td>n/a</td>
<td>1</td>
<td>1,001-2,000</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td>21</td>
<td>&gt; 2,000</td>
<td>6</td>
</tr>
</tbody>
</table>

Note: * PARS is the NSW Provider Assessment and Registration System, a registration system set up by the NSW Aboriginal Housing Office for indigenous CHPs.

Findings

Beyond the ‘fit for habitation’ and similar general clauses in state tenancy acts, there are no effective regulations that govern the energy efficiency standards of existing housing, including social housing, in Australia (Liu et al., 2019). While SHPs that manage properties on other owners’ behalf are required to maintain the properties to standards stated in their management contracts, these are typically not energy efficiency related. In light of the rapidly increasing cost of energy across Australia in recent years (ACOSS, EEC and PCA, 2018), however, many SHPs are motivated to improve the energy efficiency of their stock as a means to supporting better tenant outcomes: “we are concerned about energy efficiency in terms of the outcomes for our tenants. We are very customer focussed” (Tier 1, metro only).

One way to systematically improve the energy efficiency of their stock is through strategic plans. Across our sample, however, only nine SHPs identified that they currently did or proposed to include energy efficiency improvements in their strategic plans. These included seven Tier 1 CHPs, a Tier 3 CHP and the state housing provider: “there certainly is in our strategic plan to provide opportunities where we can to improve the energy efficiency of our dwellings. I guess that manifests mainly through our new construction program” (Tier 1, metro only). One CHP stated that the inclusion of environmental sustainability and energy efficiency goals in their strategic plan was motivated by a desire to remain competitive in the sector, especially with other larger funding and expansion opportunities such as the Management Transfer Program in mind: “I think we’re getting there now and that’s largely driven by I think seeing what our peers are doing. We don’t like to be falling behind” (Tier 1, regional only). Being seen as a leader in the sector could potentially improve their chances of success in being awarded management transfer, thereby broadening their income base and possibly their ability to fund more efficiency upgrades.

As we explain in the sections below, however, a number of financial, structural and institutional barriers exist that prevent (1) more SHPs from being more strategic about such upgrades or (2) fuller implementation of these strategic plans. The degree to which these barriers hinder progress varied across SHPs of different sizes, ownership/management ratios, and specialisations, with smaller and more specialised SHPs more likely to encounter these than their larger, more mainstream counterparts.

Financial barriers

As Milligan et al. (2016) noted, many of Australia’s SHPs are debt-funded, especially for development purposes. Among the SHPs interviewed, most did not typically maintain a specific budget for energy efficiency upgrades to existing properties. Therefore, the availability of external, especially government funding was often identified as a driver for considering energy efficiency upgrades. Several providers identified simple non-fixed appliances (such as energy efficient lighting) that had been upgraded with full
external funding; none identified major upgrade works (e.g. insulation) which had been fully funded by external sources.

Fundamentally, most financial barriers in this sector relate back to the issue of split incentives, where SHPs do not have an effective mechanism to recoup costs incurred through energy efficiency upgrades from the tenants or dwelling owners. While SHPs were concerned about their tenants' health and wellbeing, split incentives operate as a barrier because SHPs are typically working with limited funding, which in turn has led them to frame stock-related decisions like energy efficiency upgrades through the viewpoint of return-on-investment. This aspect of return-on-investment was, for example, prominently highlighted throughout an evaluation of HEAP (Wise et al., 2018). Hence, in the absence of title ownership, there is limited incentive for SHPs to invest in energy efficiency: "when there is direct savings to us from installing, even, different hot water systems, anything like that, it's tricky to justify" (Tier 1, regional only). This is especially in view of the potential risk (though low) of tenancies being transferred onto another SHP for management while the debt accrued for the upgrades remains their responsibility.

Co-funding was, therefore, identified as central to implementing energy efficiency upgrades. Most interviewed SHPs that had undertaken a co-funded energy efficiency upgrade were involved in HEAP. The availability of external funding was noted as a trigger for many of the participants to consider undertaking an energy efficiency upgrade project: "we just saw the funding available and I put it to the board, that it was a good thing to do" (PARS, regional). Further, SHPs often found it was easier to justify spending of internal funds to the finance teams for co-funding of an upgrade project on the assumption that it is better value: "when it's co-funded, it's okay. If it's sheer internal, finance will go ‘well, why are we doing that?’" (Tier 1, metro & regional). Whether co-funding was deemed to provide value for money depended partly on the project and partly on the types of upgrades. SHPs typically only found value for money if the co-funding was for more costly upgrades, such as solar panels. Most importantly, co-funding is typically only available for the purchase and installation of energy efficient products, with their ongoing maintenance the responsibility of the SHPs. As several of our interviewees highlighted, they did not necessarily have maintenance partners to perform the ongoing maintenance of the energy efficient products, nor the financial capacity to manage the additional expenditure.

Whilst co-funding was important in supporting implementation of upgrades, many SHPs involved in co-funded program still encountered barriers, namely in accessing suitable internal funding, dealing with the bureaucratic burden, and complying with rigid funding guidelines. Further, SHPs and co-funders did not necessarily share a common understanding of terms and aspirations around energy efficiency, nor a complementary budget structure to enable co-funding. SHP budget structures also did not necessarily align with the requirements of various co-funding schemes, constraining their ability to find the cash-flow to contribute to co-funding arrangements.

**Structural barriers**

As discussed above, split incentives present as a major structural barrier to SHPs from introducing energy efficiency upgrades. This was the case across all CHPs interviewed, where they largely managed stock on behalf of the state government or head-leased from the private rental market, with the latter a particular issue for smaller and specialised CHPs. This was interpreted either as constituting risk or as unproductively limiting which upgrading activities were considered permissible: "management transfer is so restrictive in terms of what we can do with the money and the stock, but the risk of doing other things is too great, or we're... or the funding’s ring-fenced by government for specific outcomes" (Tier 1, metro only). This lack of flexibility in how the awarded funding can be used was identified as a missed opportunity by some participants: "the smaller SHCIF [Social Housing Community Improvement Fund] grants are very targeted to improvements. They're not about maintenance; they're not about structural repairs; they're not about those sorts of things. They're about green gardens, sail shades for reducing heat load in common areas, improvements to community rooms, security lighting... There's no reason why some of those grants can’t be targeted specifically to sustainability measures" (Tier 1, metro only).

The terms of the management transfer agreements were noted as particularly restrictive for more extensive upgrades. As previously discussed in Pawson et al. (2016), management transfers in Australia have to date been typically for short rolling terms (e.g. renewable every three to five years). This can limit
SHPs’ ability to raise funds for co-funding schemes (such as by using the transferred ‘assets’ to arrange for further debt-funding). While there are recent changes introduced through the Future Directions social housing strategy (FACS, n.d.) where management transfers are for longer, 20+ years terms, the majority of the current management transfer contracts already in place will continue to be limited by this short-term arrangement, sometimes restricted by the different programs that these transfers first occurred under. Additionally, CHPs also highlighted inconsistencies in asset and management strategies, where different teams within the state housing authority may come up with contradictory plans for the same assets that the CHPs manage. These plans may also not be communicated to CHPs until very late in the process. One CHP exemplified this: “they have their own strategies that they keep to themselves around future plans of development, of estate management, that no one’s privy to. For example, we have 240-280 properties in [area]... we’ve been committing funds of recent, in the last year or two, substantially to bring those properties to a higher level to increase their lifespan. Then recently we found out that all those, that there’s actually a plan being drafted to do an estate strategy on it… They’ll be knocked down and rebuilt, sold off. We’re going, well hang on, we’ve sunk several millions into these properties, into this area, and we’re probably not going to get anything out of it” (Tier 1, metro only).

Institutional barriers
Aside from financial and structural barriers, SHPs may be additionally limited by the lack of internal institutional capacity to introduce upgrades and/or access assistance programs. Relating particularly to managing co-funding programs is the lack of backroom administrative support in finding suitable funding assistance and in administering the successful grants. The contract management associated with co-funding schemes were often reported to be overly prescriptive and inflexible, exacerbating this issue. This was articulated both to limit what could be achieved and to create additional administrative demands that the SHPs found to be both burdensome and disadvantageous. Some SHPs found the administrative detail required to be unfeasible logistically and in terms of the resources required. Moreover, contract conditions requiring them to use particular contractors or products were thought to introduce unnecessary limitations and inefficiencies. Smaller SHPs were particularly not equipped to deal with the bureaucratic process and contractual requirements associated with co-funding arrangements. For some, the bureaucratic costs were felt to outweigh the funding gain, sometimes resulting in their pulling out of co-funding processes.

Further, most SHPs highlighted that they often do not have a comprehensive overview of the conditions of the stock they manage. This is partly a legacy of having a wide variety of stock type of different ages that were also often built to different quality, of having received many but small packages of transfers, and also the poor quality or lack of information that is provided by the state housing authority. This echoes Blunden et al.’s (2017) findings, where state housing authorities themselves may not be equipped to maintain and divulge such information. As an outcome, CHPs in receipt of transfers may similarly not have a clear grasp of the conditions of the stock, with several resolving to educated guesses: “probably not as much as we should from a statistical and analytical point of view. From a knowledge base, and seeing the properties and having quite a good exposure to - we’re essentially lucky in comparison to the other CHPs, where most of our properties are basically cookie-cuts. They’re copies of another. So, I could comfortably say 25% of the portfolio is an identical product across the board. I know the age, I know the configuration, I know the condition and quality. So, from that end we - I’ve got a pretty good basis on my understanding of it” (Tier 1, metro only). This lack of knowledge can restrict CHPs’ ability to plan and fund upgrades.

During this time of rapid sector expansion, there are also several competing priorities that take SHPs’ attention. Notably, and as discussed, accessing additional stock to broaden their tenant base has been a major priority for several CHPs, particularly the larger Tier 1 providers. Extensive resources are not only needed in applying for transfer packages, but also in upgrading them to decent quality: “The main focus, at the moment, is pretty much ensuring that the properties are brought up to a decent standard before we go above and beyond... Our impression, at this point in time, is most of those properties are well below an acceptable level” (Tier 1, metro only).
Another strategic priority for CHPs has been to access specialist, often non-housing focused funds such as the National Disability Insurance Scheme (NDIS) that may additionally allow them to perform some property upgrades. These are largely on an individual bases—NDIS packages are available to eligible individuals with accessibility needs—and upgrades are predominantly accessibility-focused, though these may trigger upgrades that improve energy efficiency at the same time, as this asset manager explained: “I guess it’s the NDIS has motivated us, because of the funding out to the individual clients, and they now have, and that’s another thing we are looking at is individual metering in those group homes as well, particularly the older properties that are not... there is no way to, well to retrofit meters and cabling, as you can imagine, could be horrendously expensive in regards to your individuals, which would encourage them to be more energy efficient as well” (Tier 1, metro only).

Overcoming barriers
In order to overcome these barriers, SHPs had employed a number of strategies, particularly for improving their chances of gaining funding support. One common strategy employed, especially by larger, better resourced SHPs, was to use specialist consultants who could help source and apply for funding. This was especially important when the processes of application were noted to be increasingly onerous: “they kept coming back and asking for a bit more of this and a bit more of that. Basically, from when we thought it was going to happen, it was several months later that we could actually tick it off... Very complicated contract for a very small sum of money” (PARS, regional only). Several SHPs discussed the benefits of using such consultants, including their familiarity with the application process and, to a lesser extent, technical knowledge on the complexities of emerging technologies and products so that they did not end up over-capitalising or coming across the ‘intention-behaviour gap’ as Kowlaska-Pyzalska (2017) identified.

The two different consultant groups we interviewed highlighted great variations in funding support available across jurisdictions. They also highlighted the different approaches funders take in maximising the potential benefits of their schemes. The NSWDPIE, for example, took a proactive approach, employing the two consultants to reach out to CHPs directly and assisting with their applications. This was appreciated by some CHPs, especially those with limited internal capacities, though the barriers of being able to access matching internal funds and in getting value for money remain: “we’re still having to find, for a small organisation I think it’s about $26,000 that we’ve got to find. That’s quite a large sum of money for a small organisation” (Tier 3, regional only). Consultants were identified as important in sourcing information on available funding support, while other SHPs noted that peak body newsletters was their main source of such information. In particular, SHPs noted that information in these newsletters was often already collated and synthesised, meaning they did not need to spend additional (human or otherwise) resource in finding available support and their eligibility.

Another strategy several CHPs have successfully employed is to maximise the benefit of an initial application. A small number of CHPs highlighted, while an initial grant may only cover a small proportion of their stock, subsequent applications for funding became less onerous: “now that we've done it, it's also going to be a lot easier to do the next thing” (Tier 1, metro only). The ability to demonstrate positive outcomes from their previous grants was also noted as important in increasing their chances of success. Some CHPs have now embedded these relatively small grants as part of their business as usual practice, allowing them to upgrade small proportions of their stock in succession: “what we’re trying to do is embed Home Energy Action into the way we do business as usual, as opposed to these programs that run parallel and then stop, and then we go back to what we were doing before” (Tier 1, metro only).

To overcome a lack of knowledge on the conditions of the stock they manage, a small number of CHPs have also begun conducting conditions assessments as part of longer-term asset management strategies. To date, these are limited to the larger CHPs, as assessments can be resource-intensive.

Outside of externally funded retrofit projects, larger CHPs concentrate on constructing new social housing with strong energy efficiency features. Most SHPs that currently develop stock found it easier to implement such features from the get-go as well as easier to manage. These may be funded via debt, construction grants and renewal programs like the Social and Affordable Housing Fund and Communities Plus that do not necessarily come with energy efficiency mandates (aside from those set by NatHERS
and BASIX), or the CEFC Community Housing Program that demand high energy efficiency. To date, however, only one CHP has utilised the loan arrangement support offered by the CEFC. Our interviewees reflected on the resource-intensive application process (despite strong facilitation from the CEFC) that led two SHPs to eventually pull out of negotiation.

Conclusions
Improving energy efficiency is increasingly a strategic priority in the NSW social housing sector, motivated by improved tenant outcomes and dwelling liveability but also to remain competitive in a fast-expanding sector through management transfers and estate renewal programs. This is consistent with Milligan et al.’s (2015) survey findings, as well as the active pursuit of sustainability goal by several large SHPs in Australia. The ability for SHPs to implement these goals, and for some the ability to set these goals, remain limited, with numerous and substantial barriers preventing wider implementation. As we presented in this paper, many of these barriers at the financial, structural and institutional levels—including split incentives, financial inflexibility, and lack of top-down policy direction—resonate with international findings. Complexity in accessing assistance, restrictive funding and management terms, and competing priorities further complicate the landscape in NSW. The larger, better resourced SHPs were more readily able to take advantage of assistance programs designed to overcome these barriers, including the use of specialist consultants for financial and technical assistance. It remains clear that further adjustments are needed to ensure broader uptake, especially among smaller, more specialised CHPs that at present are less equipped internally to take on energy efficiency upgrades. While acknowledged as beneficial to financially constrained tenants, these upgrades continue to not be considered core business for housing providers.

When asked about adjustments to the current avenues of assistance that would be of most benefit, SHPs highlighted increased flexibility—in terms of contractual terms of large-scale programs like management transfers, and the remits of energy efficiency grants—as being of utmost importance. This would allow for broader applications of current schemes, the ability to address several rather than individual barriers concurrently, ensuring minimal disruption to the sector but at the same time maximising the impacts. Funders must remain realistic of what is achievable within the bounds of contradicting public policies and provide varied but appropriate support, such as NSW DPIE in providing consultative support in navigating the onerous application process for financial assistance. This requires adjustments at the top-down policy level, ones that may have broader impacts on the sector, including in shifting SHPs’ focus on their ability to afford the capital expenditure of upgrades to more readily align with their motivations of improving the liveability of the dwellings and tenant wellbeing.

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