

Providing greater access to home battery technology in the private rental market

Key messages

- The Government of South Australia is committed to delivering an affordable, reliable and clean energy supply.
- Around 22% of homes in South Australia are private rental properties. Many tenants have been unable to access energy efficiency technology such as solar photovoltaic (PV) generation and home battery systems and therefore are excluded from the benefits of lower bills and energy independence.
- The Department for Energy and Mining (DEM) is seeking stakeholder views on whether a structured program or scheme, that decreases risks to landlords and removes barriers, would incentivise landlords and tenants to install more solar and battery systems.
- Such a scheme may be able to better align costs and benefits of longer life technology for private rental properties.

The purpose of this Issues Paper is to seek the views of stakeholders in relation to tenant access to home battery energy storage technology in the private rental market.

The Government of South Australia is committed to delivering affordable, reliable and secure energy supplies in a transitioning national energy market, and to responsibly unlock the value and opportunities offered by South Australia's energy resources.

As part of this transition, it is important to explore ways in which the benefits of lower prices can be delivered to all customers in South Australia. This includes extending the bill savings realised through solar and battery systems, to customers in the private rental

market who generally do not have the opportunity to benefit from this technology.

This Issues Paper examines barriers to uptake and outlines options to make it easier for landlords and tenants to participate in the Home Battery Scheme. DEM is seeking stakeholder views on whether a structured program or scheme, that increases benefits to landlords, would incentivise landlords and tenants to install more solar and battery systems.

Home Battery Scheme

The South Australian Government launched the Home Battery Scheme in October 2018, supporting the installation of 40,000 home battery systems on South Australian households through \$100 million in State Government subsidies and a \$100 million Clean Energy Finance Corporation investment to provide low interest loans.

The subsidy is available to all South Australians connected to the grid, however Energy Concession Holders can access a higher subsidy ensuring low-income households are supported to access the scheme. The size of the subsidy varies depending on the size of the battery, and is currently capped at a maximum of \$6,000 per battery installed.

While the subsidy is applied to the battery only, households can apply for low-interest finance made available through the Clean Energy Finance Corporation to purchase new and/or additional solar panels as well as the battery system.

Of the over 5,000 batteries installed or pending installation, it appears that as few as 17 have been for batteries for properties occupied by renters (as at 13 December 2019). It would appear that landlords and

renters are not benefiting from the energy savings delivered by solar and battery technology and that more can be done to help tenant and landlord take-up of this technology.

Batteries' capacity to store electricity generated by solar panels during the day and power a home throughout the night has seen some scheme participants eliminate their summer electricity bills entirely. The growing number of virtual power plant offerings are providing additional savings to those with batteries.

Concurrently, the South Australian Government with Tesla is rolling out the trial phases of the Virtual Power Plant project. Households participating in the Phase 2 trial are charged electricity rates around 20% better than the Default Market Offer introduced on 1 July 2019. This program has so far provided valuable insights into the challenges facing this model in the Australian regulatory context.

Benefits of extending the Home Battery Scheme

The South Australian Government is looking to extend access to the scheme subsidy and low interest loans to rental properties, property developers and aged care facilities to spread the benefits of cheaper electricity to more South Australians.

Priorities include opening up the program to:

- Enable landlords and tenants to benefit from long-term arrangements that balance the interests of both parties and ensure consumer protections.
- Allow common areas of apartment blocks to access the scheme, so that those in apartments can start benefiting from bill savings and supporting the grid.
- People who don't have an individual electricity meter but use power, such as in

some retirement villages or supported accommodation.

In addition, the extension of the Home Battery Scheme also has the potential to deliver a number of grid-related benefits as the market evolves. As the number of home batteries in South Australia grows, so does the opportunities for retailers and other market participants to harness the benefits of co-ordinating the operation of these systems.

This includes enrolling the batteries in a virtual power plant, which can assist retailers to manage their market positions with greater efficiency and to offer innovative products to customers and improve customer satisfaction. A larger cohort of controllable batteries also opens up greater options for SA Power Networks, the distribution network operator, to manage constraints on the network.

Advancements in the operation of the market, such as those mentioned above, will take the pressure off South Australia's grid at those times when there is a tight supply demand balance. That will put downward pressure on wholesale prices in the region, helping to reduce energy costs for consumers.

Landlord and tenant incentives

Around 22% of homes in South Australia are private rental properties¹. Overall, the majority of tenants have been unable to access energy efficiency technology such as solar photovoltaic (PV) generation and home battery systems and therefore are excluded from the benefits of lower bills and energy independence.

This problem arises as landlords and tenants have differing incentives. Tenants are responsible for paying energy bills and are therefore incentivised to pursue opportunities to lower energy costs, however do not have the tenure to justify even short term investments. Landlords, however, may not be

¹ Refer: <https://www.abs.gov.au/AUSSTATS/abs@.nsf/Lookup/4130.0Main+Features12017-18>

inclined to pay for the installation of a solar PV and battery system where the benefits of that system largely accrue to the tenant. This is known as a 'split incentive' and is a key barrier to the uptake of energy efficiency measures in private rental properties.

The split incentive means that many South Australians, particularly those on low or fixed incomes and younger people, have little opportunity to control their electricity bills through the use of energy efficiency technology.

In 2018 a pilot program was conducted in Moreland, Victoria, which provided insights into the barriers and potential pathways to solar installation on rental properties. The key findings of the program were:

- Tenants had the least agency in decision making for rental properties, while landlords and rental property agents had the most impact.
- Peripheral infrastructure (eg. roofs, fuse box) issues may complicate installation processes.
- Sudden policy shifts can delay and complicate existing programs.
- Tenant and landlord interest in solar for both economic and environmental reasons is high.
- Environmental factors were the greater motivator for landlords surveyed.
- A small number of landlords had solar on their own properties.
- Monitoring electricity generation of solar power systems was important in ensuring successful installation and production.
- The perceived power imbalance between tenants and landlords was an issue for tenants.
- Information provision to tenants and landlords was critical to achieving installation.
- Specific messaging tailored to different stakeholders would aid uptake.²

Question 1: What is the greatest barrier that is preventing tenants from accessing solar and battery systems? How can this be overcome?

Programs helping tenants

In response to the barriers faced by tenants, trials and programs have been developed by interstate governments, local government and industry to improve pathways for renters to access energy efficiency technology. A sample of recent programs are summarised below.

Solar for rental properties – Victoria

- Administered by Solar Victoria, part of the Department of Environment, Land, Water and Planning.
- A rebate of up to \$2,225 is available for rental properties, subject to program eligibility and a Solar Homes Landlord Rebate Agreement.
- On average, rental households that install solar PV can expect to save up to \$890 per year on their electricity bills.
- Stream A offers a rebate for rental properties, with the Landlord paying the remaining cost of the solar system.
- Stream B will offer both a rebate and an interest-free loan to landlords, with tenants contributing to the cost of the system.
- For further information, refer: <https://www.solar.vic.gov.au/solar-rental-properties>

Solar for rentals trial - Queensland

- Around 1,000 rebates of up to \$3,500 are available for eligible landlords to install a solar system with solar monitoring technology.
- Eligible landlords get the rebate which will cover much of the up-front cost of installing a solar and monitoring system, and higher rental income.

² Refer: <https://morelandzerocarbon.org.au/news/solar-for-renters/>

- Tenants get access to solar with no upfront cost and can use the solar system to reduce their power bills in return for a fair rent increase.
- Participating landlords must have their tenants' consent to participate and meet the eligibility criteria.
- The trial is an initiative of the Queensland Government as part of its Affordable Energy Plan.
- For further information, refer: <https://www.qld.gov.au/community/cost-of-living-support/concessions/energy-concessions/solar-for-rentals-trial>

AGL Off-Site Solar

- Customers pay a subscription fee on their AGL electricity bill of \$1 (GST incl.) a day for their first year (max. total cost \$365) and have solar credits generated by an offsite solar system located in NSW credited to their bill.
- Customers earn solar generation credits calculated at 15¢ per kWh based on the energy generated by the panel, totalling to an estimated \$50 a year (residential feed-in tariffs not subject to GST).
- The credits help offset the amount customers pay for energy from the grid.
- Customers can continue earning solar credits for up to 7 years and take the solar savings with them if they move.
- For further information, refer: <https://www.agl.com.au/newcampaigns/off-site-solar>

Solar Savers – Adelaide (Trial now closed)

- The Adelaide City Council Solar Savers Adelaide Program provided up front funding for the purchase and installation of solar PV energy systems on eligible low-income and rental residential properties.
- Participating properties had a ~2kW solar PV energy system installed on their property and Council is recovering the costs from property owners through a separate rate charge, paid off in quarterly instalments over a 10 year period.

- The trial was an initiative of the Adelaide City Council. The program was designed to address barriers including a lack of access to upfront capital to purchase and install solar PV systems; lack of clarity and trust in the solar market; as well as a split incentive between landlords and tenants.
- For further information, refer: <https://yoursay.cityofadelaide.com.au/solar-savers>

Virtual Power Plants

Virtual Power Plants, or VPPs, are playing an increasingly important role in South Australia's clean energy transition. This is both from a system security perspective and by helping to reduce energy costs for consumers. The current VPPs available in the market offer a range of subsidies and discounts to installation of hardware and are summarised below.

Tesla

Tesla's VPP is an example of a scheme which seeks to overcome some of the barriers to tenants receiving the benefits of solar and batteries. Phase 2 of the VPP is currently underway in partnership with the Government of South Australia. It will take the number of batteries installed on South Australian Housing Trust homes to 1,100.

Due to the landlord in this case being the South Australian Housing Association, many barriers to installation are overcome due to the stable ownership structure of the assets.

The program relies upon tenants opting in to the electricity retail tariff offered by the Program's Retail Partner, Energy Locals. By spreading the cost of the solar and battery system over a longer time and accessing additional revenue streams through dispatching the aggregated stored energy to provide network and grid services to Australian Energy Market Operator (AEMO), the program demonstrates the possibility of delivering both commercial returns and immediate value to tenants.

In the retail offer of the Tesla VPP, the tenant pays for all power consumed, whether from the solar and storage assets or from the grid, at the lower VPP tariff, and does not incur a specific battery charge.

Despite that offer being the best published market offer, there remains a risk that tenants will change providers. This increases costs to the scheme due to the need to manage stranded assets.

The Tesla VPP demonstrates the potential for distributed battery installation to be considered more like an infrastructure investment, where managing the cost over a longer horizon allows immediate benefits with no up-front cost for installation.

In addition, Tesla has launched a new private retail offer open to all households, supported by energy retailer Energy Locals, as an extension to the trial phases of the South Australian VPP. The offer includes a feed-in tariff (FiT) of 10c/kWh and \$0 daily supply charge (saving the customer approximately \$300 p/year). The battery brand on offer is a Tesla Powerwall. The cost of the battery is \$3,499 (post subsidy, inc GST).

Simply Energy

Simply Energy offers customers a competitive electricity retail offer including a 15c/kWh solar FiT and daily payment of \$7p/day in return for joining their battery with the VPP. Battery brands include Tesla, LG Chem, sonnen, Eguana Technologies and prices start from \$6,500 (post subsidy, inc GST).

AGL

AGL offers customers with an existing solar and battery system a sign-up bonus of \$100 and an ongoing credit of \$15 per month, equivalent to \$180 per year. Customers who purchase their solar and battery through AGL at the time of joining the VPP receive \$1000 towards the upfront cost of the system.

In both instances, the customer can stay on their existing AGL energy plan or choose their preferred AGL energy plan. Battery brands include Tesla and LG Chem and prices start from \$4,999 (post subsidy, inc GST).

ShineHub

ShineHub has partnered with electricity retailer PowerShop to offer a competitive electricity retail offer including a 10c/kWh solar FiT and additional VPP payments estimated at combined total of \$0.37 to \$7.05/kWh (approx. \$300 p/year). The battery brand on offer is an Alpha-ESS. The cost of the battery is either \$2,999 upfront (post subsidy, inc GST and installation) or \$1/day. The \$1/day offer is a fully serviced lease to own plan where the battery is operated and maintained at \$1/day for ten years, after which the customer can pay \$1 to own it outright. If the customer wishes to buy the battery system before the 10 years period ends, the cost of the system is calculated at 10% less the original purchase price per year of ownership.

sonnen

sonnen customers with existing an solar system and sonnen battery are able to sign up to one of three 'Pay As You Go' monthly electricity plans. Depending on the generation and storage capacity of their system, the customer can select a plan based on their annual household electricity usage. Plans start from \$49 p/mth or \$1.61 p/day. The customer must produce the minimum annual solar generation quantity outlined in the plan over a 12 month period. If the household produces less than the minimum, their annual household usage allowance is adjusted. The customer receives a FiT for any electricity produced over the annual export threshold. Similarly, if the customer exceeds their annual household usage allowance they are charged for any excess electricity usage at a fixed tariff.

Other programs

Other programs in Australia and internationally have attempted to find ways to resolve barriers to uptake of energy efficiency technology, such as the Property Assessed Clean Energy (PACE) program in California, Environmental Upgrade Agreements (EUA) in South Australia and NSW, and the United Kingdom's Green Deal program.

These programs have variously attempted to create "on bill" financing so that savings and costs align, but do not necessarily address split incentives between landlords and tenants. EUA's seek to secure the building upgrade through repayment by council rates, allowing for a multi-year agreement between landlord and tenant which can then align costs and benefits for the landlord.

Solutions for South Australians

Based on the information available, the preliminary view of DEM is that the largest barrier to the uptake of energy technology for tenants is the risk, perceived or otherwise, by the landlord that they will not adequately recover their investment in solar and battery technology on their rental property.

This risk arises because there are limited options available to facilitate the sharing of the benefits that accrue from solar and batteries, between the landlord and tenant. Increasing rental income to compensate is one option that may be beneficial on a case-by-case basis. Provided any increase in rent does not outweigh the energy savings received, the tenant will be better off.

However, misalignment in the short-term nature of residential rental agreements compared to the expected time to pay off the investments in a solar and battery systems (over multiple years) means most landlords have not been willing to pursue this option.

This may also be, in part, due to the nature of the rental market and market expectations regarding the appropriate level of rent for a premises. Despite the monetary benefits that

a solar and battery system can deliver for a consumer, this value does not always appear to be fully captured in residential rental prices.

In addition, for investments with longer payback periods such as solar and batteries, the duration of the agreement may extend beyond the intended length of tenure by the tenant, or, ownership by a landlord of the property, requiring them to pay out a residual amount at change of lease or at sale.

Programs like Solar for Renters, which enabled rental property owners in Moreland, Victoria, to install solar systems on houses in exchange for slightly higher rental incomes, have only shown moderate success. In this program 10 households were selected to test out the model which resulted in four successful installs.

Question 2: In your view, would a structured program or scheme, that increases benefits to landlords, incentivise landlords and tenants to install more solar and battery systems? If not, why not?

Options within the NER

The National Electricity Rules (NER) are framed around the primacy of retail choice driving consumer benefit and protection, generally made annually. These were established at a time where distributed energy resources were less common.

The take-up of distributed energy resources has occurred primarily by those who own their own home, over a broad socio-economic range. Rental properties with distributed energy are, in nearly all circumstances, cases where homes have likely been rented subsequent to the installation of solar and battery systems.

Options for long-term arrangements around hosting technology such as solar through permitted exclusions to this framework, such as a power purchase agreement, have not been popular with consumers.

Some retailers have brought solar PPA options into the market, but none have been adopted widely and most of them withdrawn. As well as consumers preferring not to have two electricity bills, and the above issues with agreements requiring an extended period of time to repay means that this option does not overcome the barriers facing landlords and tenants.

Landlord Battery Scheme

An option could be the development of a statutory scheme that would create the desired certainty for landlords, align costs and benefits for tenants to deliver immediate savings while recouping installation costs, and facilitate greater uptake of battery storage technology in rental properties.

Such an arrangement could also be used in owner-occupied housing where there is reticence to invest, for example when they aim to sell the property within the payback period or move out of the property to rent it.

This approach could be similar to the approach taken by Adelaide City Council in its Solar Savers Trial. In that trial, the upfront cost of the system was paid for by the Council which it is now recovering from property owners through a separate rate charge over a

10 year period. In that scheme, however, that rate charge is not necessarily paid by those who pay the electricity bill, as could occur in this case. Such a scheme would seek to maximise the uptake of solar and battery systems, by ensuring that tenants who benefit from the system contribute to the costs of the system. Landlords would also receive certainty that these payments will continue should the occupancy of the rental change.

Whilst a landlord would need to agree to participate, they could benefit from the improved attractiveness in terms of attracting and maintaining a good tenant, and increased property values in particular when the system is fully paid off. A scheme could also provide for a payment or payments to a landlord, to incentivise participation.

This would mean that the tenant or resident of the dwelling would receive both the benefits of self-consumption of power from the solar and battery system, the feed-in tariff from any surplus power, and the ability to extract additional value by choosing a virtual power plant option from a retailer. On their bill, these benefits would sit next to the charge required to pay for the system (refer Table 1).

Table 1: Estimated annual savings for Tenants*

	No Solar and Battery System	Solar and Battery System
Annual consumption (based on Default Market Offer)	4000 kWh	4000 kWh
Consumption - grid	4000 kWh	1200 kWh
Consumption – own use	0 kWh	2800 kWh
Solar and battery bill savings	\$0	\$1,091
Annual virtual Power Plant (VPP) savings	\$0	\$400
Estimated annual bill (incl. GST)	\$1,553	\$62
Annual payments for solar and battery system	\$0	\$1050
Total cost to tenant	\$1553	\$1112
Estimated annual savings to Tenant	\$0	\$441

* Assumes 3kW solar and 8.8 kWh battery at a total cost of \$9542, after application of the current Home Battery Scheme rebate of \$5,280. Annual system payments calculated over 10 years at 10% interest rate. Bills calculated based on the SA Concession Energy Discount Offer Tariffs, which is one of the lowest offers in the market. Assumes 4.2 kWh average solar hours per day per Clean Energy Council guidelines for Adelaide. Generation self-consumption assumed to be 40% with solar only and 60% with solar and battery.

Retail offers could also be structured so that repayment of the solar and battery system, as well as energy usage, is made through consolidated fixed monthly or quarterly bills over a specified time period. This would provide certainty to tenants or residents over the total cost of the system and the savings they can expect to receive.

Question 3: In your opinion, would retail offers that provide fixed price billing for solar and battery systems, as well as energy usage, drive greater uptake of energy efficiency technology? If not, please provide further information.

To ensure consumer protection, there would need to be a high degree of confidence that the residents will derive greater benefit than the costs of annual payments. The Tesla VPP has demonstrated that such programs can be formulated.

This would likely require a role of Government to prequalify acceptable offers and ensure that battery and solar systems are appropriately sized relative to the dwelling. This may also require education and access to technology such as apps which allow households to derive the greatest benefit from self-consumption and virtual power plants. It would also work within the current framework where consumers seek out the best deal from retailers, particularly those with VPP offers.

Given that energy retailers currently manage customer billing for every grid connected property, one option is for retailers to collect payments like a network charge through the retail bill and pass these on to the owner of the system. However, this would not necessarily need to be performed by a retailer and could be performed by another party provided adequate systems and processes exist to enable the transaction.

This would allow a customer to change energy retailers, whilst ensuring that payment continues to be collected (refer Figure 1). Under this model the landlord or a third party could own the solar and battery system (with consent of the landlord).

Energy retailers, or another party, would need to cross-reference a list of eligible properties or NMI's to ensure payments are correctly processed. A similar process currently occurs with the payment of energy concessions, which ensures that only eligible concession holders receive energy concessions on their bills. It may include a positive obligation on retailers, or another party, to inform such customers of their VPP offers.

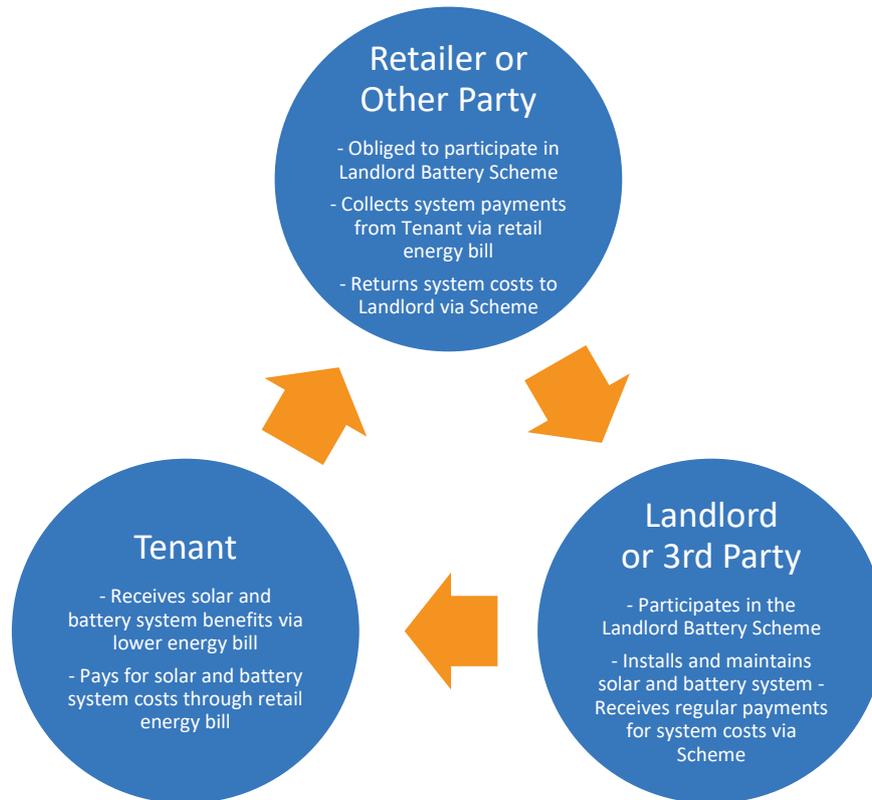
A scheme which offers greater long-term certainty of payment would allow lower costs of finance, more akin to an infrastructure investment with assured revenue. This would have the effect of increasing savings by reducing the cost of capital.

Scale in rollout on such a model could also allow for further efficiencies in delivery to be achieved. Inclusion of warranty requirements over the life of the scheme would improve consumer safeguards and create incentives for quality of equipment and installation.

It is intended that that costs associated with the delivery and administration of a scheme would be funded by industry, but that a scheme overall would deliver benefits to the community that outweigh the costs.

Question 4: Would a statutory scheme provide certainty to landlords and facilitate a greater uptake of energy efficiency technology in rental properties? What would it need to take into account? How could such a scheme best be established in the South Australian regulatory context?

Figure 1: Example of Landlord Battery Scheme



Making a submission

DEM invites written submissions to this Issues Paper by Friday, 31 January 2019. DEM welcomes submissions from all interested stakeholders, but particularly seeks the views of:

- landlords and tenants
- consumer advocacy organisations
- solar and battery providers, and
- energy retailers.

The matters raised in this Issues Paper are intended to stimulate ideas and discussion. Submitters should not feel restricted by these topics and are encouraged to raise:

- additional matters that they believe need to be addressed in any future program or scheme, and/or

- alternative ways to overcome barriers to access home battery technology in the private rental market.

It is preferred that submissions are sent electronically to CET@sa.gov.au with the subject line 'Tenant access to energy efficiency technology in the private rental market – Issues Paper'.

Next steps

Following receipt of submissions, DEM will assess the introduction of any required new or amended regulation in line with SA Government's Better Regulation Handbook³. This is to ensure that any new regulations strike an appropriate balance between protecting the community and minimising compliance costs on businesses and individuals.

³ Refer: <https://dpc.sa.gov.au/responsibilities/cabinet-and-executive-council/cabinet/writing-a-cabinet-paper/thinking-about-the-impacts/regulatory-impacts>