

The Value of Community-Scale Storage

Energy Consumers Australia's foreword

Energy storage is key to consumers enjoying reliable, affordable, and clean energy into the future. To achieve this future, our energy system will need batteries at different scales.

Household-scale batteries are increasingly prevalent in Australia, with [roughly 8% of small solar installations in 2023](#) including household-scale storage. Meanwhile, utility-scale storage installations are increasing throughout the country. However, there is another type of energy storage – “community-scale” – which offers the potential to provide unique value to energy consumers.

In 2021, the Australian government announced \$200 million to fund 400 community batteries across the country to help 100,000 families and households store their excess solar power. Given this investment, what is the potential value of community-scale storage for consumers? And how might that value stack up against other types of storage? We commissioned The Brattle Group to undertake exploratory research that considers these issues.

The Brattle Group's research, while exploratory only, indicates that **community-scale storage has the potential to provide economic benefits to Australian energy consumers** because it can combine the cost savings of larger-sized batteries with benefits that can only be achieved from distributed resources.

However, the research also finds that **realising this potential is not a given** – the policy settings will need to be right and industry will need to innovate. The success of community-scale storage will depend on:

- The ability of the energy system to reward community-scale storage (and consumer energy resources more broadly) for the value they provide.
- Its location in particular parts of the network that need storage the most.
- A decrease in the installed costs of community-scale storage projects.

To unlock the potential value of community-scale storage, government, industries, and communities will need to work together.

Weighing up the value of community-scale batteries

This exploratory report considers a number of ways to assess how community-scale batteries might stack up in comparison to other battery applications. There is considerable discussion of these comparisons in the methodology of the report. We acknowledge that further, and perhaps contradictory insights about the relative strengths and weaknesses of various storage types will emerge as more data becomes available.

Community-scale battery projects have inherent advantages compared to utility-scale storage projects. Because they are located within the distribution network, community-scale batteries can provide services to the distribution network that transmission connected storage cannot. They can lower the overall cost of the network by deferring or avoiding the need to invest in types of distribution infrastructure, increase the reliability of the local network (if configured properly), and increase the network's ability to accommodate rooftop solar.

Meanwhile, community-scale storage can take advantage of economies of scale to reduce costs relative to household-scale storage. It can serve multiple different consumers whose energy use and solar exports vary, thereby providing more value from the same amount of storage.

However, as the report indicates, community-scale batteries also suffer inherent disadvantages relative to other battery types. They are more expensive than transmission-connected batteries, and household batteries have a more mature supply chain and a wider range of products. Like household batteries and other consumer energy resources, the current design of the energy market does not easily reward community-scale batteries for the value they provide, and that value can vary significantly by location. Reflecting a given community's interests and values in a community-scale battery requires significant time and consultation, which can also increase costs.

Key priorities to realise the value of community-scale storage

The report highlights three key priorities that will be essential to enabling the successful, sustainable implementation of community-scale storage and ensuring that all consumers can benefit from it.

- 1. The electricity market’s design needs to evolve so that small-scale resources are rewarded for the services and benefits they provide.**

ECA’s recommendation:

The Commonwealth’s Capacity Investment Scheme has so far excluded community and consumer storage, even though they can provide the same dispatchable capacity as large-scale storage, often at lower cost. The recent [Design Paper](#) on expanding the Scheme states, “the intention is to include [consumer and community] technologies in future clean dispatchable tenders,” but there is no detail about how or when this change will happen. Community-scale storage and consumer energy resources should be able to earn the same underwriting support as large-scale storage. The next tenders should clarify that smaller storage types are eligible.

Moreover, the Australian Energy Regulator should require all distribution network service providers (DNSPs) to provide opt-in, time-varying and location-specific network tariffs. Retailers should be required to pass these tariffs directly onto consumers who ask for them.

- 2. Community-scale storage (and consumer energy resources) will provide more value in certain locations of the network than in others, due to a variety of factors, including the amount of rooftop solar on a street or suburb and the age and condition of the grid.**

ECA’s recommendation:

The Australian Energy Regulator should require distribution networks to share data and maps identifying the areas of the network that would most benefit from community-scale storage. This information sharing should happen through workshops with interested communities, consumers, and the storage industry, along with a dedicated publication, perhaps as part of Distribution Annual Planning Reviews. Non-network businesses face significant barriers to innovate in the sector unless they have equal access to insights about where batteries are most needed. Indeed, there is little transparency about why networks have chosen certain locations for government-funded community-scale batteries and which communities would most support the network by building more storage.

3. The long-term success of community-scale batteries in delivering value to consumers will depend on the local industry and the broader supply chain reducing costs.

ECA's recommendation:

Government grants and other funding programs should monitor and report on the cost drivers for community-scale batteries, including cost trends and opportunities for reducing costs. Innovations that enable significant cost reductions should be explored, highlighted, and celebrated in knowledge-sharing reports.

The ultimate success of community-scale battery programs will require distribution network businesses to collaborate effectively with their local communities and consumers. This collaboration must include all three priorities: rewarding community batteries and small-scale resources for the services they provide, identifying and sharing the best locations for batteries within the network, and identifying and sharing ways to reduce costs.

Community-scale batteries are more than just a novel application of technology, they represent a novel way of communities and the energy system working together. While the success of community-scale energy storage as a technology is uncertain, we can be sure that more effective engagement between the energy industry and communities will lead to long-lasting benefits for consumers.