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Community Batteries: Regulatory Factors and Business Models

AIE SA Sundowner Online Event
10 November 2021

What is a ‘community battery’

- Grid-side battery ranging from quite small to multiple MW
  - But can include behind-the-meter batteries in various ways
- Typically connected to the LV distribution network
- Has some element of involvement of and benefit to the community (not just a business)

Ausgrid’s definition:
A **shared battery solution located in a local neighbourhood** and allows customers and the wider community to share in the multiple benefits that batteries can provide.

- (Interestingly, no definition in Wikipedia)

Key regulatory and market factors that affect the business model for community batteries and/or their profitability

- Ability to participate in / interact with various parts of the electricity supply chain
- Availability of value streams (price signals)
- Network connection and tariff arrangements
- Much is changing (though there is still a fair amount to do in some areas)

July 2020 study of community ownership business models

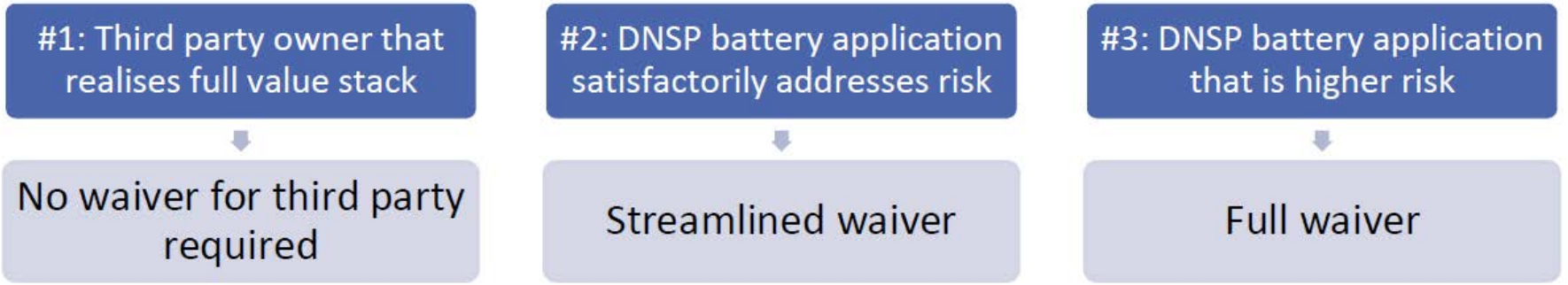
- Three ownership models compared to BtM ownership
  - Retailer
  - Network-related business
    - DNSP-owned not modelled – no natural monopoly elements to DNSP ownership, operation or maintenance of a community-scale battery or the services it can provide
  - Community organisation
- Sources of revenue considered
  - Wholesale market arbitrage
  - FCAS (regulation and contingency)
  - Voltage management
  - Avoidance of TUoS
- All three community-scale ownership models outperform an individually owned, behind-the-meter battery
  - Which is an option that is not available to all customers in any case
- Of the three community-scale ownership models tested, the retailer-owned model produced the greatest return to the asset owner
  - Only the retailer can interact directly with the wholesale market and gain the full benefit from the wholesale electricity price arbitrage and FCAS revenue streams
  - Other owners would need a retailer to access these value streams and would have to share the benefits, reducing returns to the community

What's changed, what's still left to do?

- Access to value streams
  - IRP rule change will allow battery aggregators and community-owned batteries to access the wholesale market and related value streams (i.e., FCAS, FFR)
    - Final Determination expected 2 December (https://www.aemc.gov.au/rule-changes/integrating-energy-storage-systems-nem)
  - Ring-fencing (Version 3, November 2021)
    - Comments/submissions by email to AERringfencing@aer.gov.au until 1 December 2021
- More value streams are becoming available - with others to possibly follow
  - Fast frequency response (https://www.aemc.gov.au/rule-changes/fast-frequency-response-market-ancillary-service)
    - Market mechanism to provide sub 2-second frequency response
    - Rule change 15 Jul 2021; revised MASS 19 Dec 2022; FFR to go into effect on 09 Oct 2023)
  - Network constraint management (augmentation deferral, voltage management)
    - Still within the realm of the network to provide a price signal
    - But considerable level of expectation from AER that they will do so
- Network connection and tariff arrangements
  - Access, Pricing and Incentive Arrangements for Distributed Energy Resources Rule Change (https://www.aemc.gov.au/rule-changes/access-pricing-and-incentive-arrangements-distributed-energy-resources)
  - Tariff trials and Tariff Structure Statements

Ring-fencing Guideline Version 3

- Clearly recognises the many potential benefits that a community battery can provide
- Initial position was to “prohibit DNSPs from providing excess capacity to others unless we approved a waiver application”.
- A number of stakeholders raised concerns that this approach was too strict and could “slow the deployment of batteries by DNSPs, which could be an efficient model”.
- Puts forward three scenarios:



- Preference for #1 – cites 3 ways DNSPs can support development of the market for grid-side batteries:
  - Offer the market the opportunity to provide the network support services
  - Provide information on locations where there is value to the network
  - Treat all potential battery service providers equally

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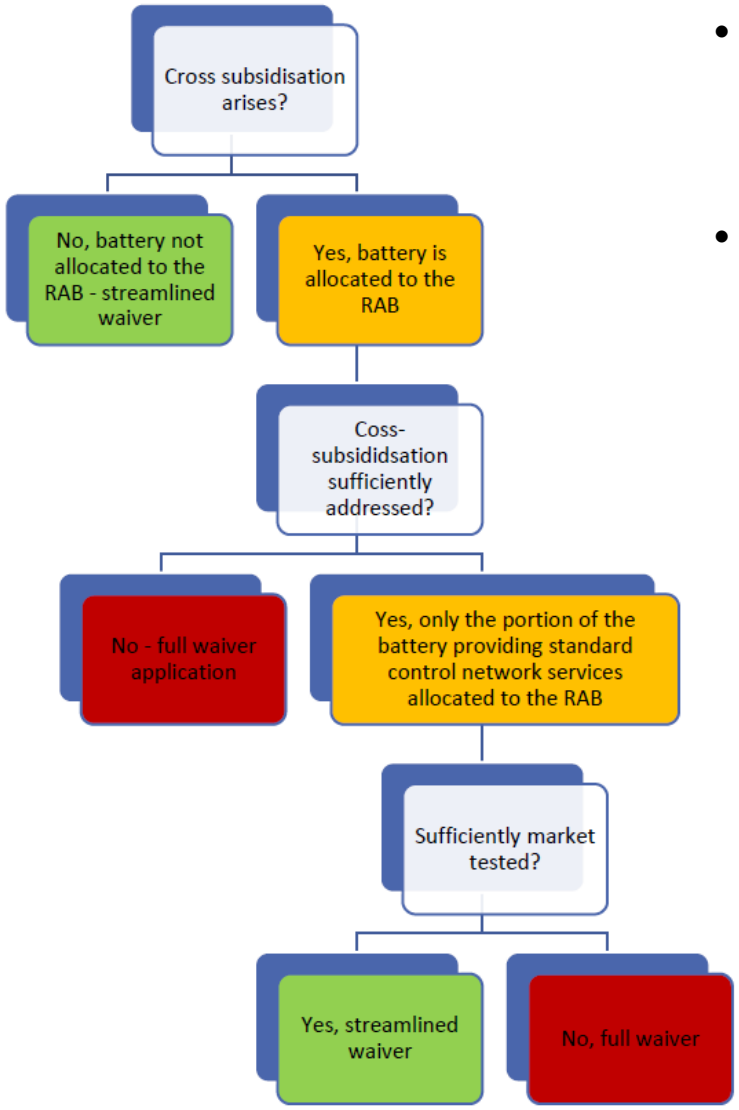
Streamlined waiver for low-risk projects



- If the DNSP decides not to put the cost of the battery in the RAB, no waiver is required (AER considers there is no risk of cross-subsidisation)
- If cost of battery is to be put into the RAB,
  - Only that portion of the cost of the battery that provides standard control network services can be claimed
    - Provide modelling of the exact capacity of the battery that is required
    - Commit to the present value percentage of time that the DNSP will use the battery for network support
    - Provide evidence that the market was not able to supply the service at the value of the service to the network
  - Conditions:
    - DNSP required to provide information that will support the battery market, particularly for community-scale batteries
    - Annual audit to verify the volume and frequency that the battery was used for distribution services and other services
    - Audited confirmation of appropriateness of cost allocation bases on the regulated and un-regulated use of the battery

Other aspects of note in Version 3

- DNSP battery projects that do not meet the criteria described in scenario 2
  - Will be considered on the basis of their benefits
  - But will be subject to the AER's full assessment process and conditions noted above
- Includes a clause that prohibits the DNSP in its procurement of a contestable service from discriminating between:
  - A party that would use an asset owned by the DNSP to provide that service
  - As compared to a party that would use an asset not owned by the DNSP
- Waivers:
  - Will be approved for the life of the battery
  - Can be revoked if there are grounds to do so, for example, based on the results on the annual audit
- Arrangements involving DNSP-owned batteries installed prior to publication of Version 3 are grandfathered
- Also addresses DNSP ownership of SAPS

Network tariffs for community batteries

- A new type of network user
  - An energy consumer whose primary business involves export of time-shifted energy
  - And that also offers significant source of demand-side value to the network and upstream portions of the supply chain
- Provides a new opportunity for the continuing evolution of cost-reflective network tariffs
- Aspects of network tariff arrangements being considered by networks
  - Network support contracts
  - Tariffs that encourage consumption in times of least cost to the network (or when that consumption can reduce costs or provide other benefits to other parts of the value chain)
  - Payments for cost-reducing use of the network
  - Local Use of System (LUoS) charges
  - Various approaches to recovery of residual costs

Yarra Energy Storage Systems - a community battery in a dense urban setting

- A community battery network
  - Working with CitiPower to install up to 200 batteries across the CitiPower network
  - First project: Fitzroy North
- Third-party ownership structure
- Services to be provided
  - Supply to local residents and businesses
  - Network support
  - Wholesale and related markets

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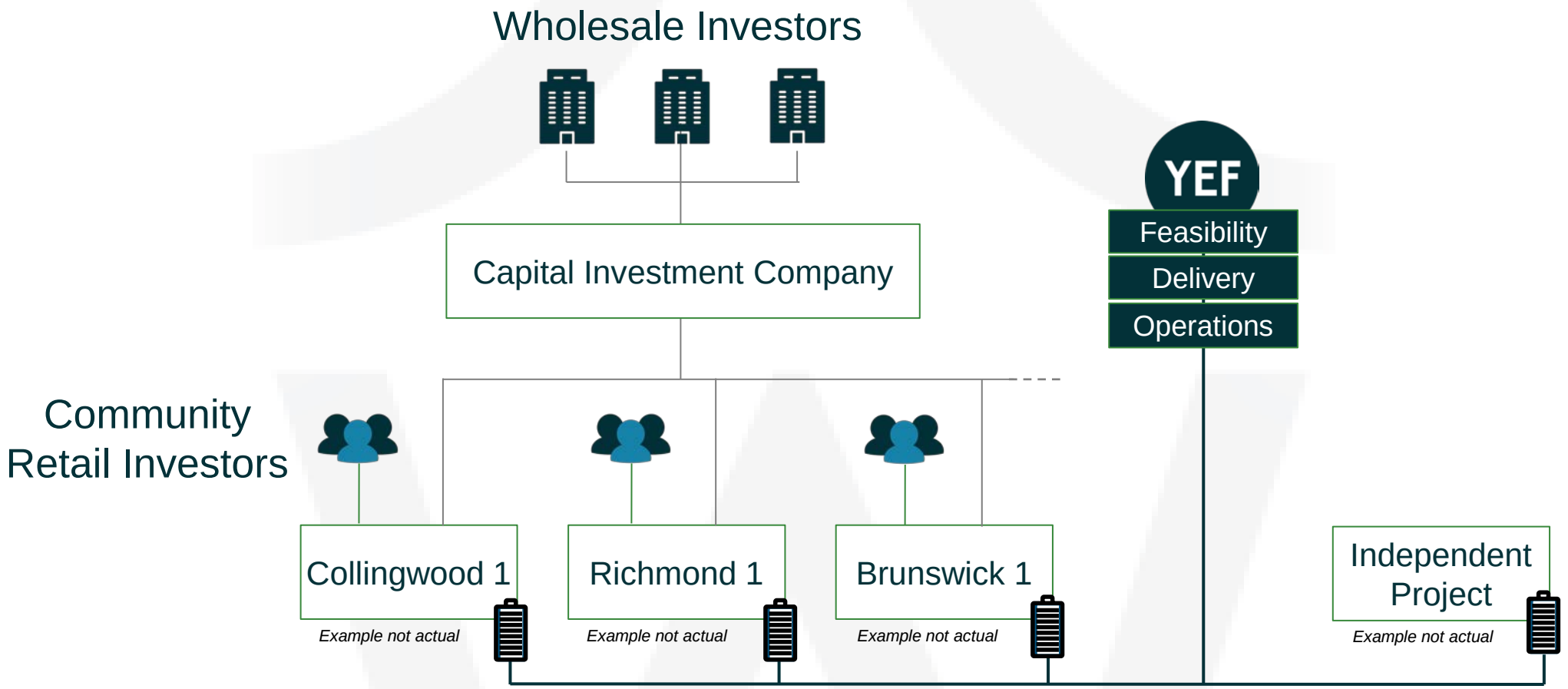
YESS Ownership Model



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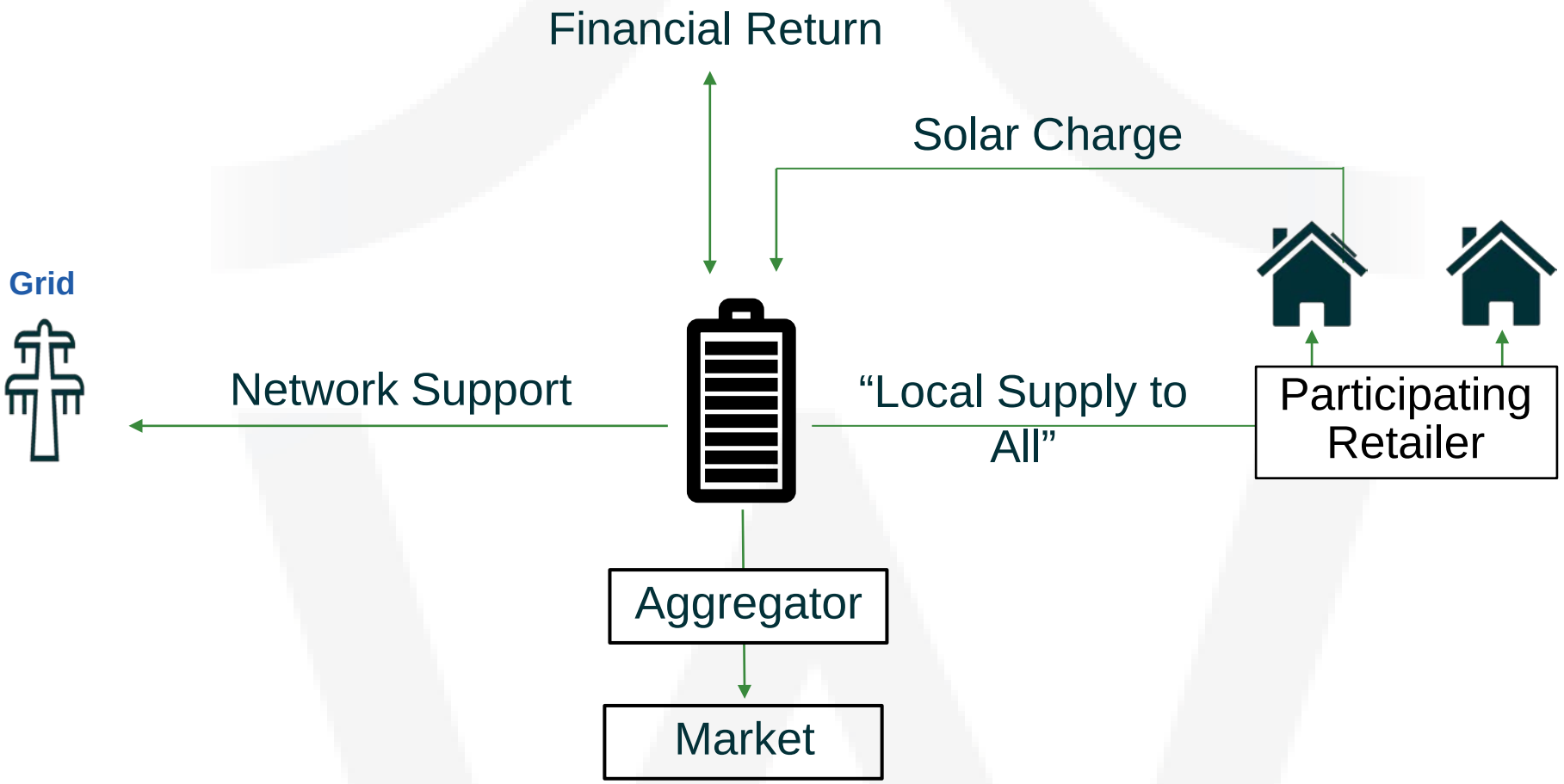
YESS Business Model



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Value Proposition to Community Members

A Community Battery in your Neighbourhood

Enables more solar to be installed and exported

- ✓ **Open to everyone in the neighbourhood**
- ✓ **Sources local energy during the day**
  - ☞ **Remotely on cloudy days** (higher daytime renewable content)
- ✓ **No cost for customers, even a discount**
- ✓ **No change in feed-in-tariff for solar customers**

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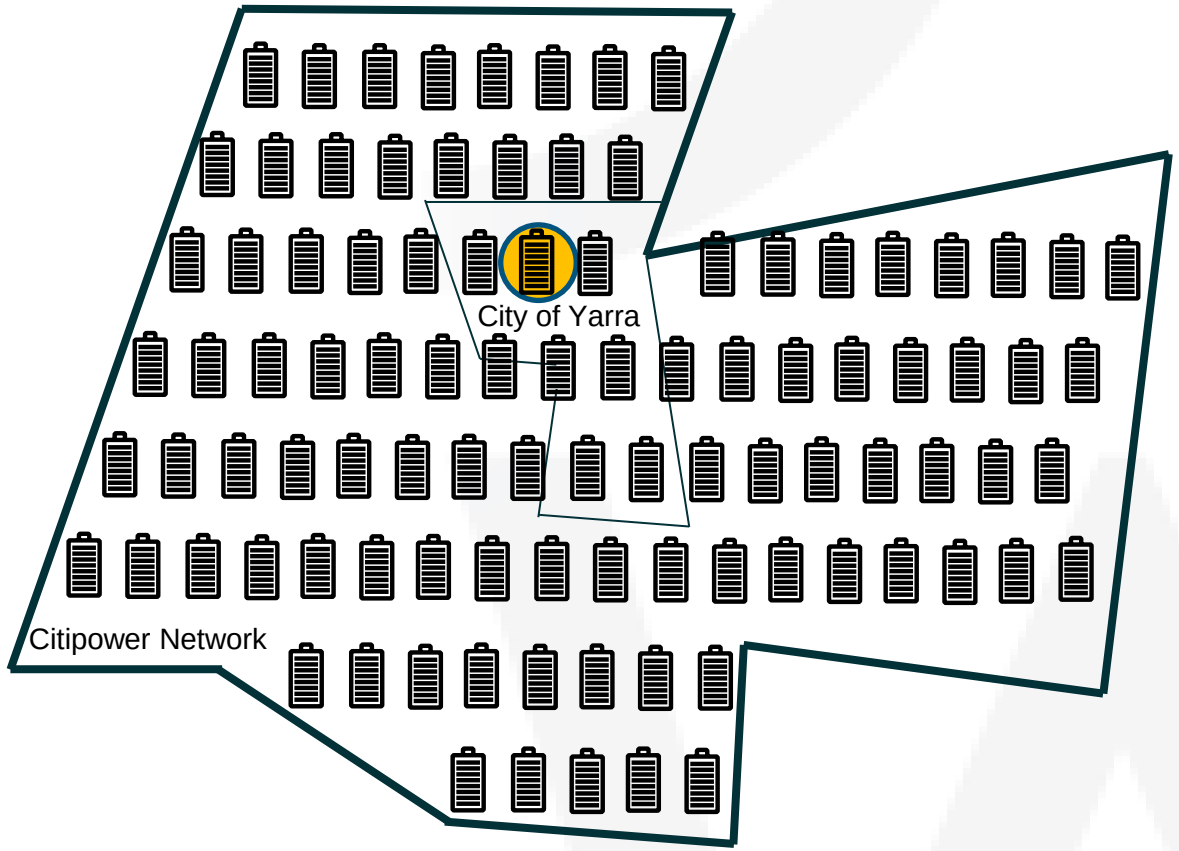
Yarra Energy Storage Systems



- A community battery network
- CitiPower network-wide
- Third party ownership
  - Storage & supply
  - Network support
  - Market trading

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