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Battery Storage and  
Grid Integration  
Program

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# Microgrids for Resilience An Australian Perspective

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# Challenges

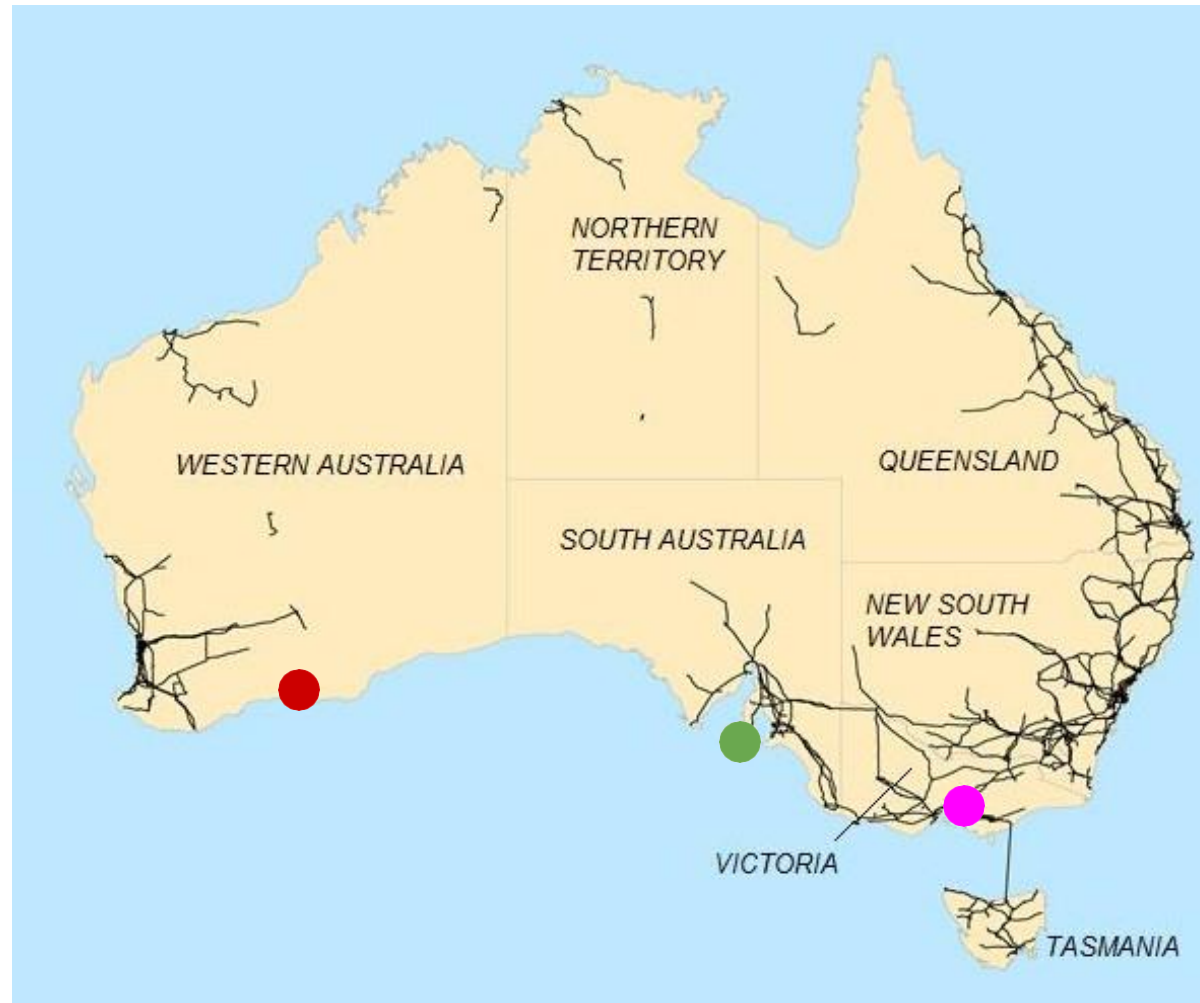
## Measuring & enabling resilience:

1. **Lack of visibility**, particularly of distribution network.
2. **Limited stress testing** of system resilience (due to inherent risk of consequential failures).
3. **New technologies**: wind ride-through settings in South Australian blackout; momentary cessation of solar in Californian fires.
4. **Bi-directional power flows**: Under Frequency Load Shedding of feeders with reverse power flows.



# Case Studies

1. Fringe of grid
2. Urban
3. Utility





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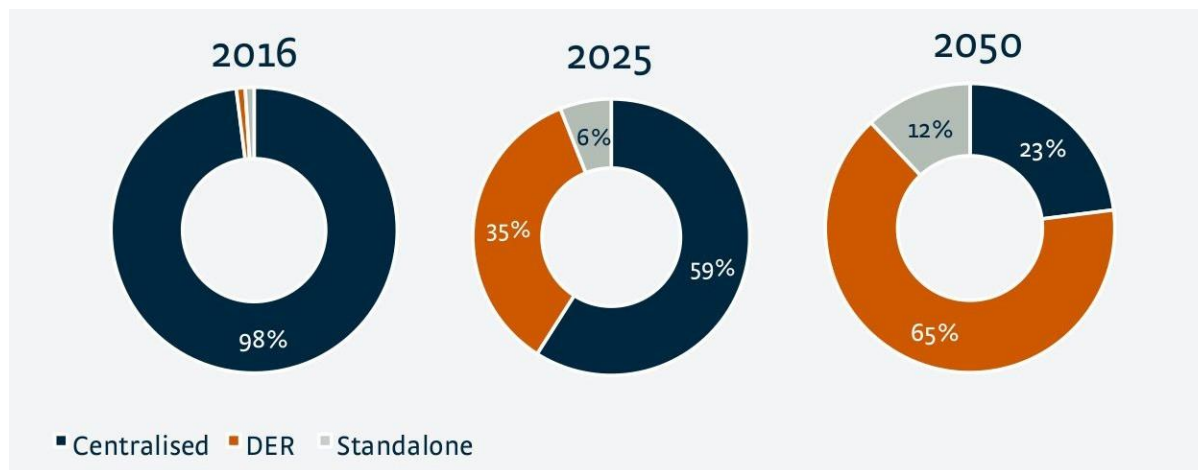
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# Australian Forecast

- 2019 rule change unlocks SAPS & Microgrids for DNSP  
“customers retain access to retail competition and existing reliability and safety standards. Cost savings arising from SAPS flow through to all users of the distribution network, through lower network prices.”
- Horizon Power’s forecast



<https://www.aemc.gov.au/news-centre/media-releases/new-cheaper-options-power-remote-communities>

Horizon Power - Microgrids and Associated Technologies in Western Australia



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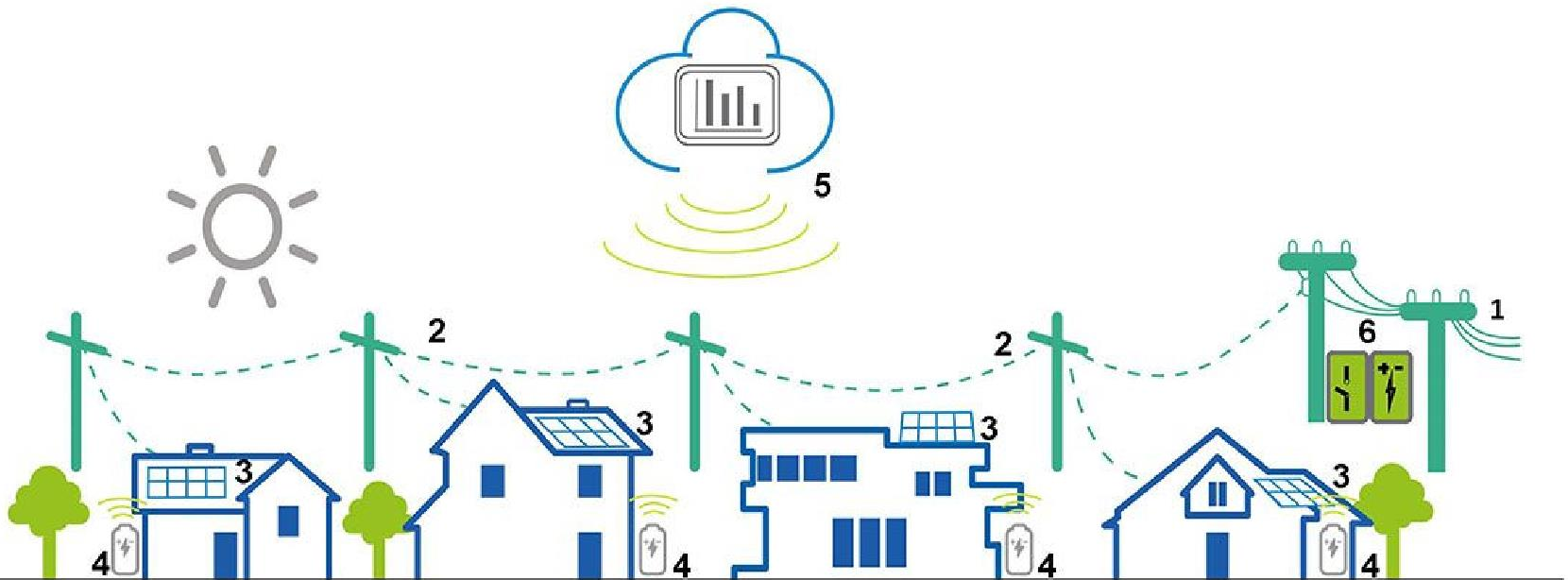
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# Mooroolbark Mini Grid

- 14/18 homes participated with solar & storage.
- Small 18 kVA / 10 kWh battery stabilises & islands system 5-10 times its size.
- Demonstrate 22 hrs islanded in summer (31°C).









# Dalrymple ESCRI

- 30 MW / 8 MWh BESS + 90 MW Wattle Point wind farm.
- Islanded operation with wind farm & local rooftop solar.
- Fast Frequency Response reduces constraints on the South Australian interconnector - supplements Hornsdale “Tesla Big Battery”.

