

Report to the CIGRE Australian Technical Council

Study Committee SC C6 and Australian Panel AU C6 Activities

Presenter: Glen Summers, AGL, AU C6
Convenor CIGRE AU C6: Jenny Gannon
AU C6 Report 2025

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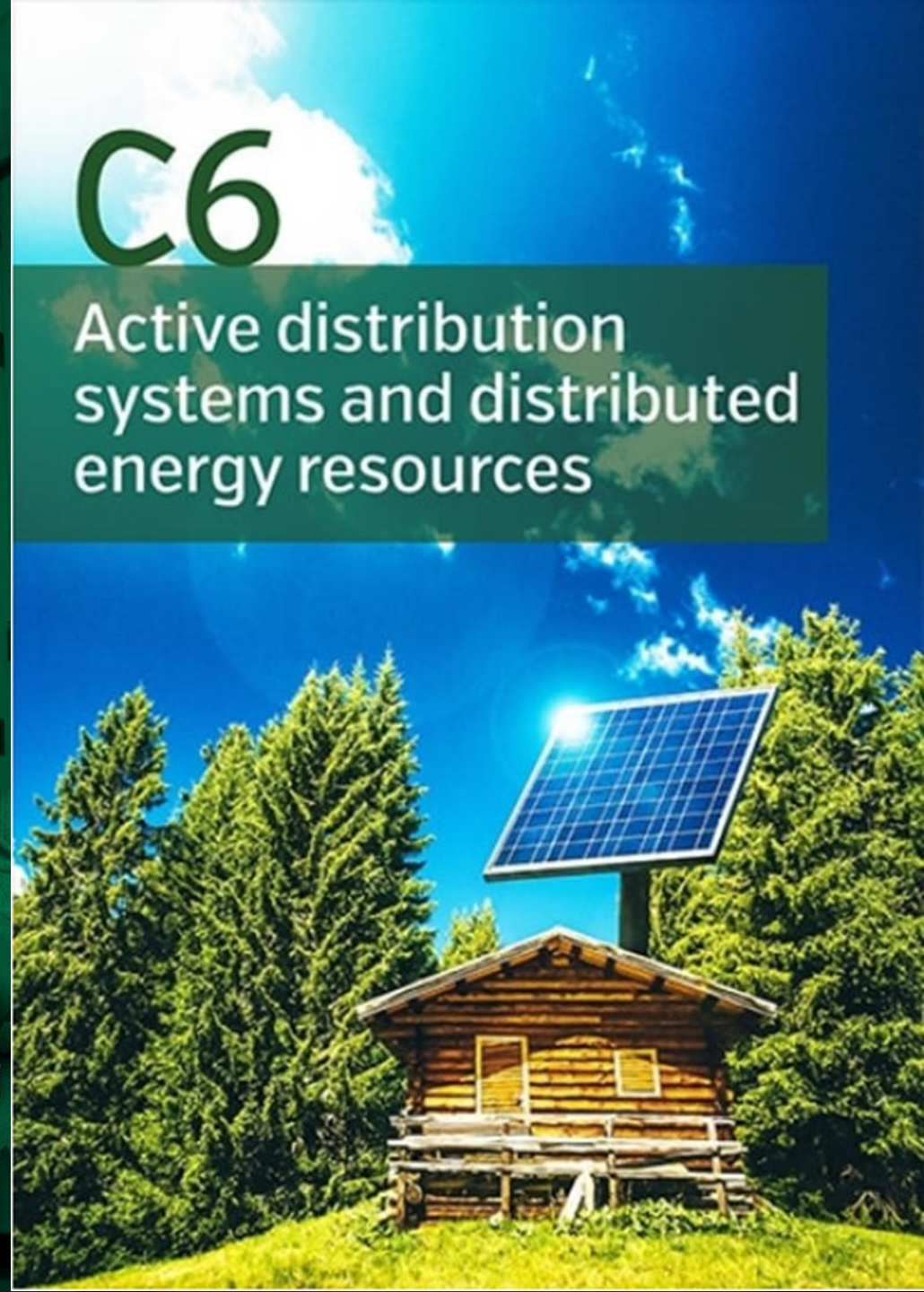


cigre

For power system expertise

C6

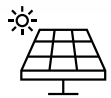
Active distribution
systems and distributed
energy resources



C6 Active distribution systems & DER

Our Mission

Assessment of the technical impacts resulting from a more widespread adoption of DER applications on planning and operation and on approaches, and of enabling technologies and innovative solutions for DER integration in active distribution systems.



Enabling Technologies for DER integration and application



Innovative solutions for DER and distribution technology deployment



New approaches to configure, plan and operate distribution systems



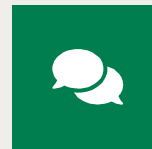
Rural electrification, islanded and off-grid systems

C6 Technical Brochure



TB954 “Electric Vehicles as Distributed Energy Resource (DER) Systems”

released January 2025



AU contributors

Pierluigi Mancarella, David Stephens, Laura Jones, Shariq Riaz, David Butler, Carmen Bas Domenech

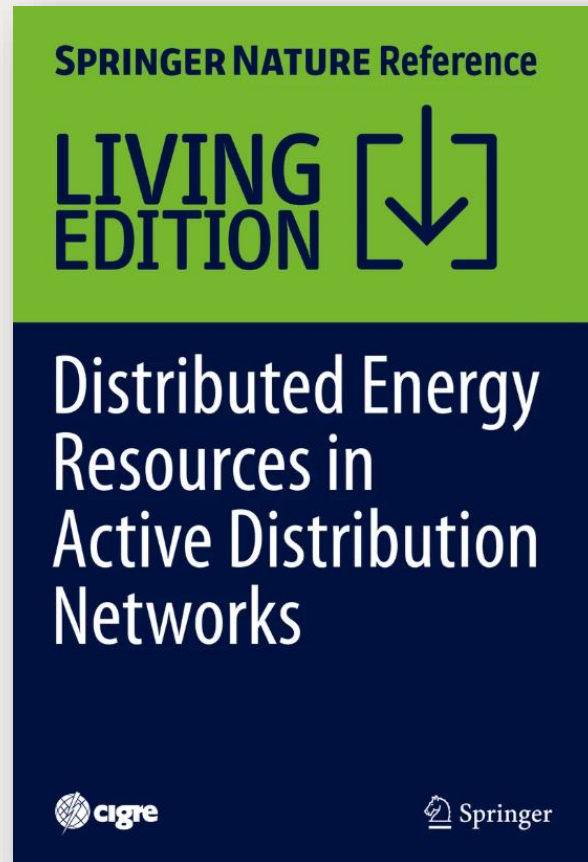


Key topics

- EV storage and charging technologies & solutions
- Approaches to control EV charging
- Provision of ancillary services
- EV business models

Access to brochure on eCigre [here](#).

Green Book



Access to Green book chapters on Springer [here](#).

Distributed Energy Resources in Active Distribution Networks

Chapters released from May 2025



Status

All 27 chapters submitted to Springer



Published content

- Aggregation of DER
- Control and automation systems
- DER in active distribution networks
- Demand side integration
- Hybrid systems for off-grid power supply
- TSO-DSO interaction and coordination
- Operation of BESS on Distribution Networks
- Rural electrification
- Smart metering
- Framework for the creation of Quasi-Static Time-Series DER Models

New C6 Working Groups

Nominate now

C6.48	DER's integration in Distribution Systems Operation and Control
C6.49	Virtual Power Plant aggregation of DER
JWG C6 / C1/ CIRED.50	Planning distribution networks under significant uncertainties



NEW FOCUS AREAS:



Modelling technologies



Resilience and flexibility



Smart grid evolution



Dynamic Operating Envelopes

Montreal Symposium

29 Sep – 3 Oct 2025



Highlights

- **C6 Papers:** 48 papers across 7 sessions
- **Delegates:** 1800 participants

Themes

- Microgrids and battery storage for smarter distribution
- Advanced planning and active network management
- Reliability, resilience, and flexibility improvements
- Energy efficiency across buildings and grids

Trondheim Symposium

12-14 May 2025

Highlights

- **C6 Papers:** 24 papers - 4 from Australia
- **Workshop:** DSO tools & practices
- **Themes:** DER integration, microgrids, market flexibility
- **Delegates:** 800 participants

Key Messages

- Smart data management drives DER integration
- Microgrids & BESS boost energy security and resilience
- Flexible markets empower customers in active networks

Key Issues for AU C6

Compliance

- Gaps in standards and testing
- Integrated DER system performance
- Digitised compliance processes
- Modelling – access, gaps aggregation of small DER

Batteries

- Resi – rapid growth with incentives
- Distribution scale – emerging markets and value stack
- Grid-forming

Harmonisation

- Standards
- Emergency backstop
 - EV & V2G
- Fixed and dynamic exports
- Requirements for PQ and comms

Hosting Capacity

- Load and generation
- Increased requirement for maps
- Need for harmonisation
- Dynamic operation impacts





3-4 September 2025



Highlights

- **C6 Presentations:** 40 presentations across 12 sessions
- **NGN:** Interactive activity & panel session
- **Themes:** DER integration, grid operations, microgrids & storage, market flexibility
- **Delegates:** 800 participants

Key Messages

- Australia is leading in solar DER integration.
- Flexible, optimised systems are essential for success
- Whole-system planning is gaining exciting momentum.
- Customer benefits from DER need help to be clearer.



Alex Guinman awarded Best Presentation by C6 Committee Member Ken Ash



CIDER25 Keynote: Michelle Howie, SA Power Networks gave a thought-provoking presentation on "Networks networking to unlock batteries on wheels"

AU C6

Spotlight – Emergency Backstop

“Emergency backstop” requires operational measures to reduce DER generation for system security, when other options have been exhausted. This mechanism keeps customers connected in extreme operating conditions.



National alignment activities

- **Solution:** States aligned to CSIP-AUS solution for Emergency Backstop.
 - Deployed: VIC, Transitioning: SA & WA, Planned: NSW & ACT
- **Standards:**
 - Adoption of IEEE2030.5 and CSIP-AUS through Standards Australia.
- **Compliance:**
 - National testing capability launched – ANU
 - National product listing planned – CEC
 - National Public Key Infrastructure (PKI) organisation created - NEPKI
 - Aligned Installer Portals for commissioning (SA & NSW)



Source: AEMO, “Learnings from industry implementation of emergency backstop mechanisms for distributed resources” Q2 2025. Available [here](#).

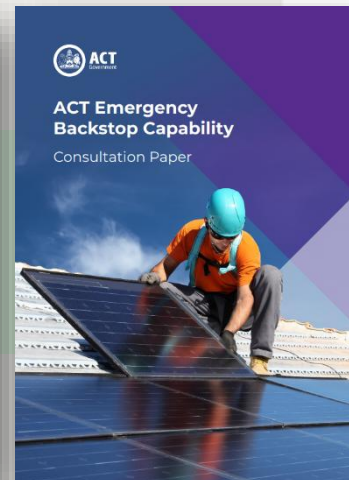
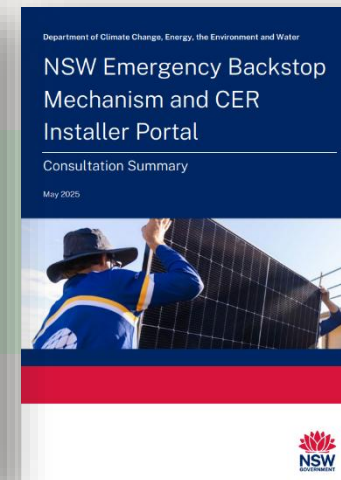
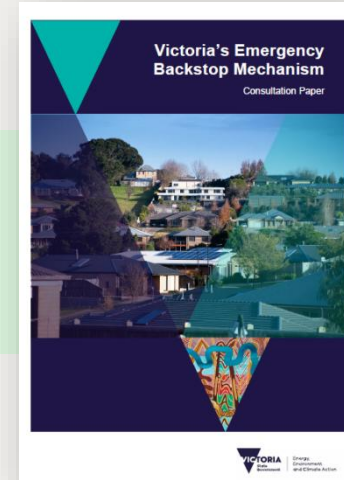
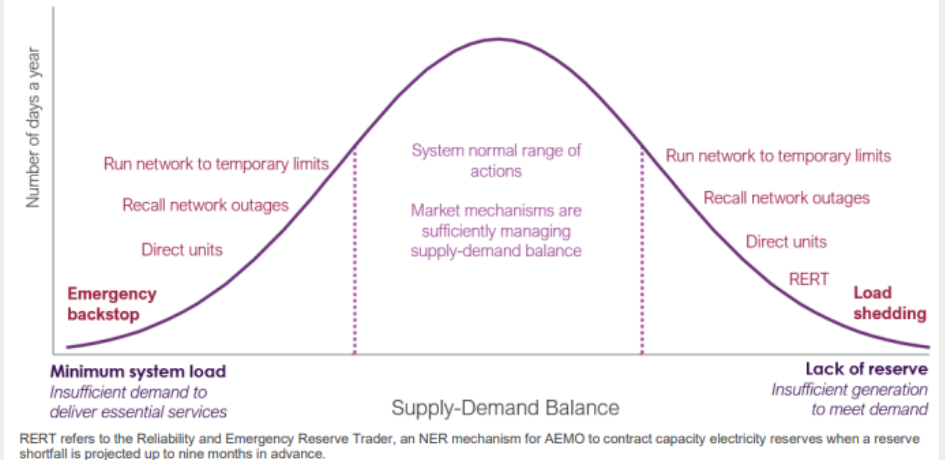


Figure 1 Emergency backstop to be used only when other options have been exhausted



Source: AEMO, “Supporting secure operation with high levels of distributed resources” Q4 2024. Available [here](#).

AU C6 Highlights



Ray Brown (left) from RBPE will be Chairing C6 Study Committee after Paris Sessions 2026. Ray will be taking over from Kurt Dedekind (right) from Eskom in ZA



NGN members are a valued part of the C6 community, contributing meaningfully to both our Australian panel and international activities.

Pictured the CIDER NGN panel:
Pat Graham (AEMO), Jerome De Vara (EQL), Parvathy Sivadas (AGL), Jony Kaushik (Transgrid), Emma Dyson (QUT), Jane Yu (AEMO), Lin Guo (AEMO)



AU C6 Panel Meeting in Adelaide

Contact Us

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THANK YOU



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For power system expertise