

# Report to the CIGRE Australian Technical Committee 2023

## Study Committee C2 and Australian Panel AU C2 Activities



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**cigre**

For power system expertise

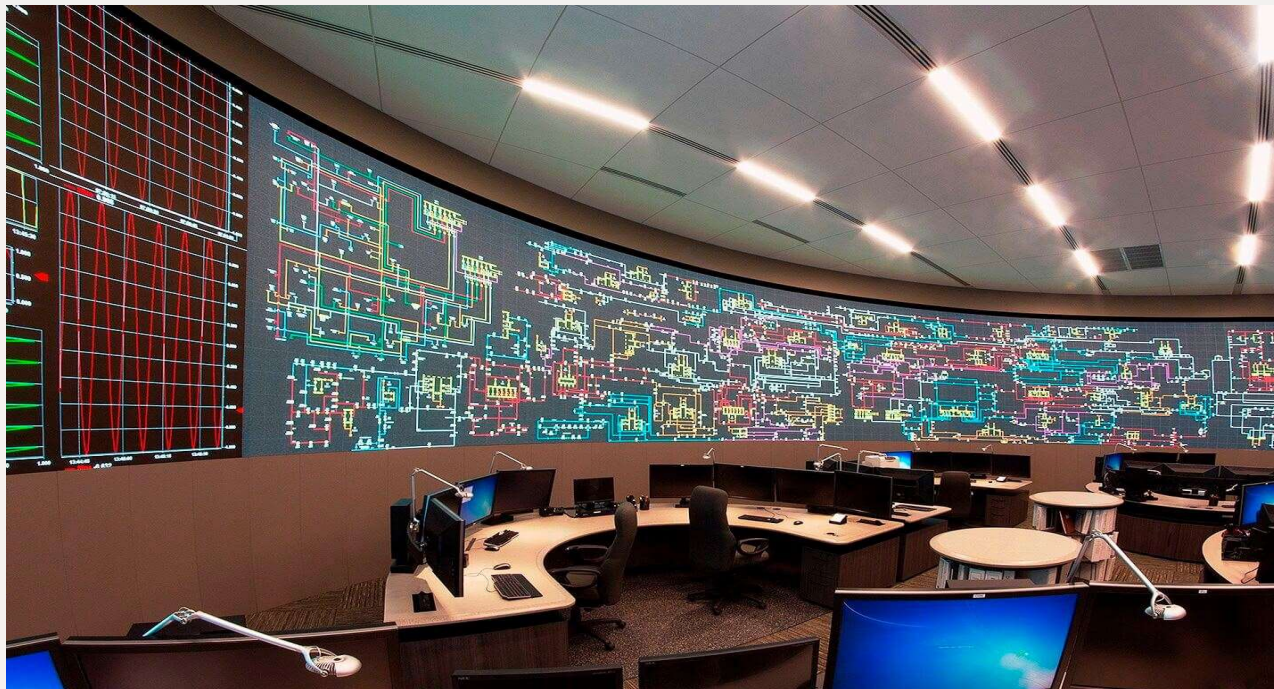
# C2

Power system operation  
and control



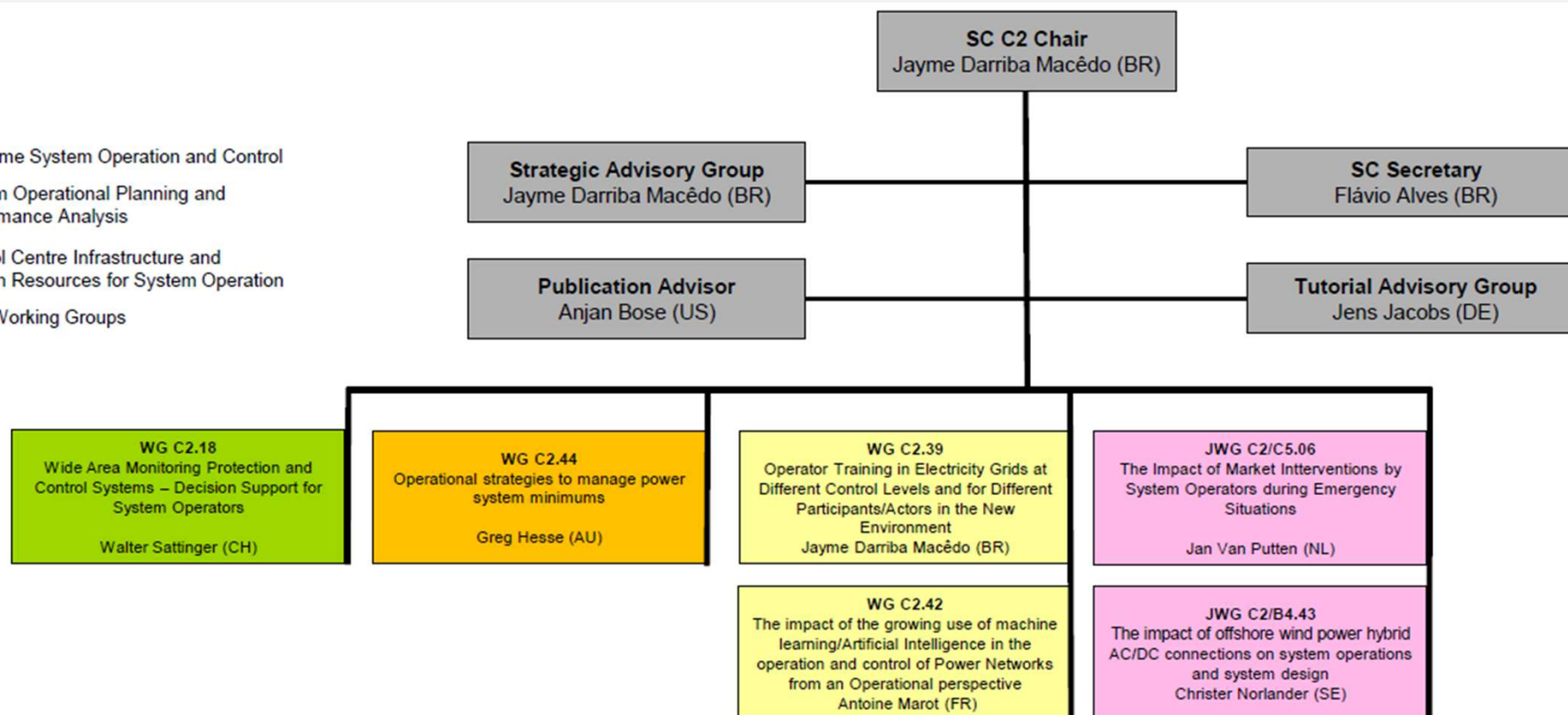
# SC C2 Scope

- Technical, human resource and institutional aspects and conditions for
- Secure and economic operation of power systems while protecting against
- System disintegration, equipment damage and human injuries



# Structure of C2

- Real time System Operation and Control
- System Operational Planning and Performance Analysis
- Control Centre Infrastructure and Human Resources for System Operation
- Joint Working Groups



# 2023 Activities

## Publications and Tutorials

### Technical Brochures

- **TB 911 *Power System Restoration Accounting for a Rapidly Changing Power System and Generation Mix* (WG C2.26)**
- **TB 917 *Wide Area Monitoring Protection and Control Systems – Decision Support for System Operators* (WG C2.18)**

### Tutorials

- ***Presentation of results from survey on the impact of the growing use of ML/AI in the operation and control of power networks* (WG C2.42) – Webinar – June 2023**
- ***Mitigating the Risk of Fire Starts and Consequences of Fires Near Overhead Lines for System Operations* (WG C2.24) – September 2023 – Cairns Symposium**
- ***Power System Restoration Accounting for a Rapidly Changing Power System and Generation Mix* (WG C2.26) – September 2023 – Cairns Symposium**

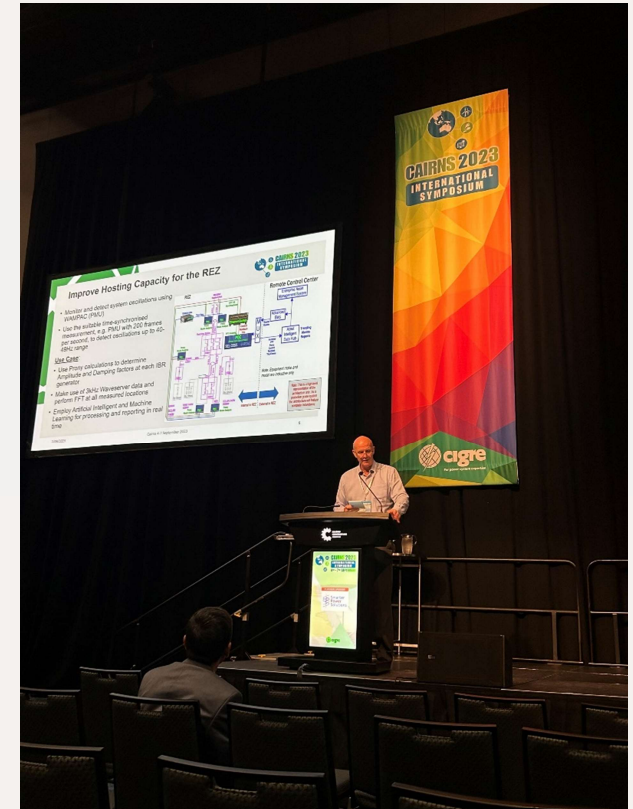


### **Power system restoration accounting for a rapidly changing power system and generation mix**

# 2023 Cairns Symposium

**SC C2 presented 29 papers over six sessions. Key themes included:**

- **How are we operating the power system now to support the energy transition; and**
- **What further tools and systems do we need to keep the power system secure and reliable into the future.**



# 2023 Cairns Symposium (Major Australian Contributions)

## Two Tutorials

- **Frank Crisci – Mitigating the Risk of Fire Starts and Consequences of Fires Near Overhead Lines for System Operations (WG C2.24)**
- **Babak Badrzadeh – Power System Restoration Accounting for a Rapidly Changing Power System and Generation Mix (WG C2.26)**



ATC Seminar 2023

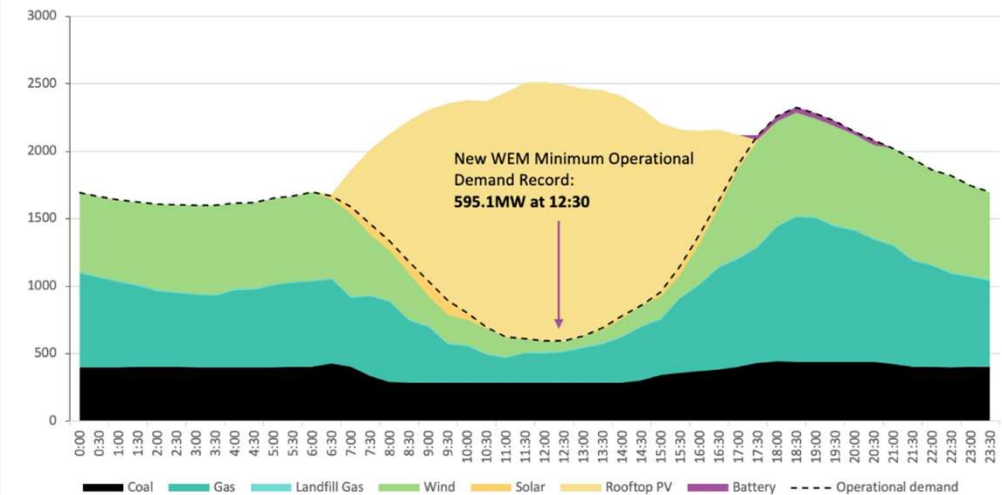
# SC C2 Working Groups

## Recently formed WGs

**WG C2.44 – Operational strategies to manage power system minimum operating conditions**

**WG C2.45 - Estimation, evaluation and provision of power system inertia in networks with a high share of renewable generation**

WEM operational demand fuel mix (25 September 2023)



## Possible new WGs

- System operational resilience indices
- System operation and cyber security (joint with D2?) – possible focus on DER
- Influence of changing climate policies on system operation (joint with C3?)
- Changes in Control Centres due to technology changes and new functionalities available in Distribution Management System

# **AU C2 Areas of interest**

## **System Strength**

**How to measure it, forecast it, and secure enough of it!**

- **Control room tools – identify and diagnose issues in real-time**
- **Barriers to investment – regulatory frameworks**

## **Operationalising IBR control systems**

- **Security of systems with ongoing OEM access to firmware, settings etc – both grid scale and distributed**

## **AI applications in the control room**

- **Moving from informing to advising (to actioining?)**