

COMMUNITY INFORMATION SHEET • RENEWABLES DEVELOPMENT

How the grid works and who runs it

The system behind every switch — and why the digital economy is changing it

The key idea: one machine, many owners

The east-coast grid is often called the largest machine in Australia: thousands of kilometres of wires keeping supply and demand in balance every second. New demand is now being added to it, including **data centres and AI infrastructure**, some of the largest single electricity users ever connected. When new generation, storage or transmission is proposed near you, this machine is why.

From power station to power point

Electricity flows through four stages: **generation** (coal, gas, hydro, wind, solar, batteries), **transmission** (high-voltage lines moving power long distances), **distribution** (the local poles and wires) and **retail** (the company that bills you). Most of the country east of the WA border trades through one market, the National Electricity Market (NEM). Western Australia and the Northern Territory run separate systems with their own rules.

Who actually runs it

No single body owns the grid; different bodies hold different jobs. **AEMO** operates the system and market minute to minute and plans ahead. The **AEMC** makes the market rules. The **AER** enforces them and regulates network prices. The federal energy department sets policy and state governments set their own energy policies and planning laws on top. Large new users, including data centres, must apply to connect and are assessed for their effect on the system.

Why it's changing now

Ageing coal plants are retiring and the replacement (wind, solar, batteries, pumped hydro, new transmission) has a different shape: more projects, more places, more neighbours. At the same time, demand is growing again after decades flat: electrification of transport and industry and the digital economy. That combination, not any single project, is why so much is being proposed at once.

What good practice looks like

- Proponents explain where their project fits in the wider system, not just what it is.
- Network and market impacts assessed independently (AEMO and network studies), with results public.
- Clear, plain-English explanation of who the decision-makers are at each stage.
- Early notice to neighbours when connection works or line upgrades are involved.

Questions to ask

Where does this project connect and what new lines or upgrades does that require? Who has assessed its effect on the local network? Which body approves each part and when can the community comment?

Want to know more? AEMO publishes plain-language guides to the NEM; the AER's State of the Energy Market reports the big picture annually. Your state energy department covers state-specific rules. This sheet is general information, not legal or planning advice; a specific proposal is confirmed by qualified assessment.