Queensland's power system
Summer Preparedness Plan 2017–18

Queensland's electricity network is ready for summer.

We have more megawatts (MW) of electricity supply available to meet peak demand, and a greater ability to respond to the challenges of summer.

To support our network, the Queensland Energy Security Taskforce is working across the industry to make sure we're in the best possible position as we head into the summer months.

Actions we're delivering to make sure our electricity supply is ready for summer include:

- Our power stations are ready to generate 11 445 MW of electricity to meet the peak demands of summer, which is more than the predicted peak demand of 9790 MW.
- We've directed Stanwell to put the Swanbank E gas-fired power station back online, which is on track to deliver an additional 385 MW into the Queensland power system from 1 January 2018.
- CS Energy has improved its operation of the Wivenhoe Power Station to boost the capacity of the pumped storage hydro by 70 MW.
- Powerlink and Energy Queensland are on track to complete preventative maintenance across Queensland's transmission and distribution network, including major repairs to the central Queensland towers damaged last summer by Tropical Cyclone Debbie.
- Our network of electricity generators, Powerlink and Energy Queensland, are ready to respond to heatwaves or cyclones.
- Our communications plan is being prepared to keep our communities informed.

The Taskforce's Summer Preparedness Plan has identified some key actions that have been—and more that will be—delivered to prepare our system. This plan was developed in consultation with the electricity industry, including government-owned and private sector power industry participants and the Australian Energy Market Operator (AEMO).

What won't change is the continued heatwaves and other extreme weather we experience during summer in Queensland.

In February 2017, an extreme heatwave impacted eastern Australian states and we reached a new record electricity demand of 9369 MW (with 548 MW in reserve). The lessons from this event, and other more significant events inter-state, have helped inform this plan.

The Summer Preparedness Plan:

- contains a five point action plan outlining preventative steps to maximise power system security and reliability during summer
- outlines Queensland's power system readiness for summer 2017–18
- identifies electricity network preparedness focus areas and mitigating actions
- keeps the community informed.

Queensland Government

What we're planning for summer 2017–18

100% summer days with sufficient forecast supply to meet demand

97.7% generation capacity available for whole of summer

23 power stations scheduled for Queensland generation

365 MW (summer rated) extra gas-fired generation from Swanbank E

140 MW new renewable energy in North Queensland over summer

Major overhauls of CS Energy's **420 MW** Callide C4 unit and Stanwell's **365 MW** Unit 3

850 MW demand savings available in the distribution network including **58 MW** of PeakSmart controlled air conditioners

The National **Electricity Market**

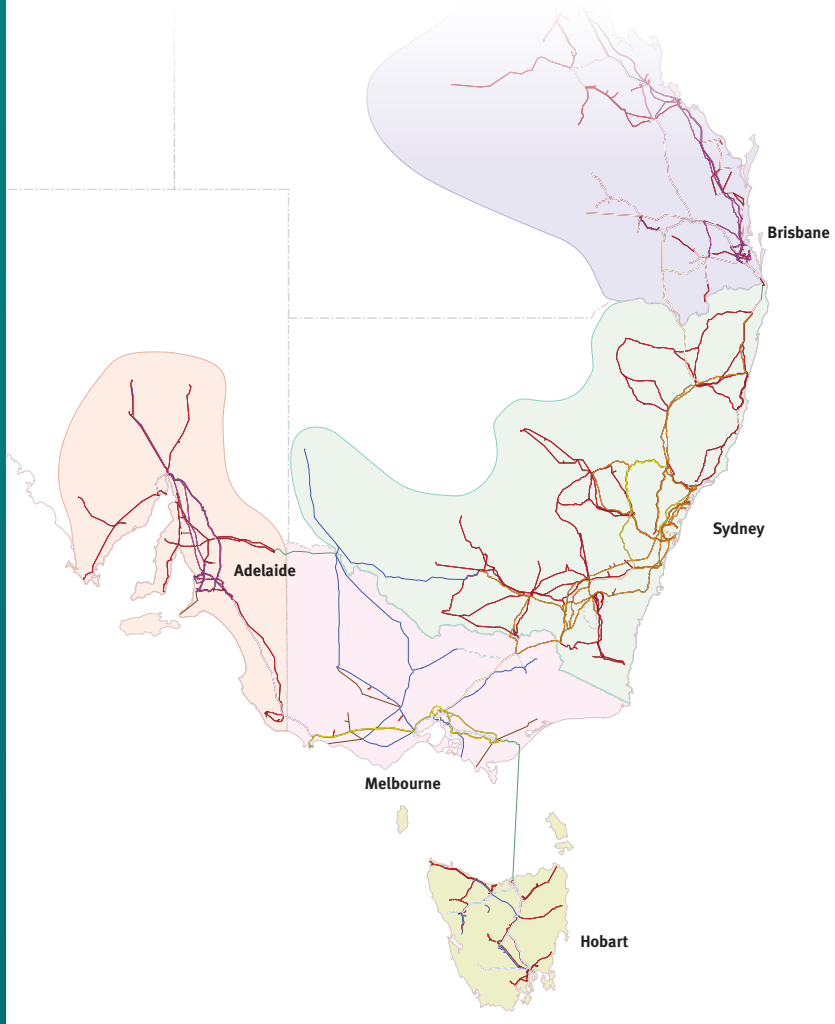
Queensland is a participant in the National Electricity Market (NEM), an interconnected power system stretching from Port Douglas in Queensland to Port Lincoln in South Australia and across the Bass Strait to Tasmania.

Queensland, New South Wales, the Australian Capital Territory, South Australia, Victoria and Tasmania participate in the NEM, which is an interconnected system and a wholesale commodity exchange (or spot market) for electricity.

NEM assets are owned and operated by state governments and private businesses, and the Australian Energy Market Operator (AEMO) is responsible under the National Electricity Rules for maintaining security and reliability across the power system in accordance with standards and guidelines.

AEMO monitors electrical properties around the system and sends instructions to generators and network businesses to keep these electrical properties within specified limits.

The NEM improves the overall security and reliability of Australia's power system. It allows us to benefit from interstate electricity sales, and allows Queensland to draw power from New South Wales if we need to do so.



Five point **action plan** OUR ACTIONS SUMMARISED

We've considered a number of risks to develop the Summer Preparedness Plan 2017–18.

The Taskforce, in partnership with key industry participants, examined a number of potential risks and challenges for our electricity system over the summer months, including:

- fuel supplies (such as coal, gas, water)
- supply–demand forecasting
- interstate incidents and dependencies within the national energy market
- natural disasters, heatwaves and other extreme weather
- market operation and responses
- intermittent generation subject to sunshine and wind
- regulation
- maintenance and capital works schedules
- generator derating (output reductions due to ambient conditions like high heat and humidity)
- people and organisational factors
- equipment and infrastructure failures
- ICT and control systems
- procedures and communication
- ancillary services that maintain system balance and resilience to system shocks
- load-shedding and procedures
- peak demand response.

These risks and challenges informed the development of our five-point action plan, which sets out what we're doing to mitigate these risks, and respond where challenges arise.

1. Maximise generation availability
2. Maximise transmission and interconnector availability and capacity
3. Maximise distribution network availability
4. Effectively manage demand during risk periods
5. Strengthen communication and procedures for power system events

Our power system

Queensland's electricity system is made up of four interconnected sectors that produce electricity and deliver it to homes and businesses—electricity generation, transmission, distribution and retail.

The Queensland generation sector has a mixture of government and private ownership, while the regulated transmission and distribution sector comprises government-owned corporations, Powerlink and Energy Queensland (Energex and Ergon Energy).

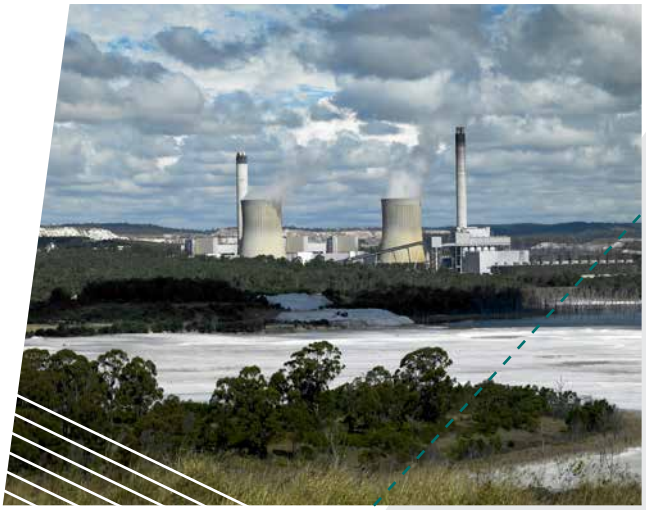
In the retail sector, there are privately owned licensed retailers. Ergon Energy also provides retail services to regional Queensland where the retail electricity market is mostly subsidised by the Queensland Government.

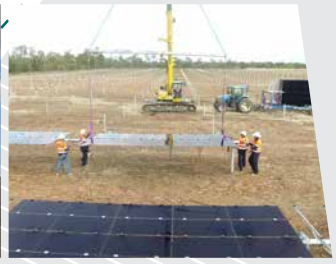
1 Maximise generation availability

- Return Swanbank E to service by 1 January 2018.
- Where safe to do so, schedule generator preventative maintenance and overhauls before summer.
- Deliver an additional 140 MW of new renewable energy in North Queensland.
- Complete generator upgrades and overhauls including Callide Unit C4 and Stanwell Unit 3.

2 Maximise transmission and interconnector availability and capacity

- Where safe to do so, schedule transmission network preventative maintenance before summer.
- Complete Powerlink operational seasonal activities including vegetation monitoring, asset condition inspections and Insulator Washing Program.
- Undertake necessary works on transmission lines, substations and interconnectors, including replacing the Nebo to Broadsound transmission towers damaged during Tropical Cyclone Debbie.





3 Maximise distribution network availability

- Implement Energy Queensland (Energex and Ergon) summer preparedness plans.
- Review and update load-shedding processes and procedures.

4 Effectively manage demand during risk periods

- Make available up to 850 MW demand response from controlled loads.
- Expand the Energy Queensland PeakSmart air conditioners program to the regional Ergon network.
- Ensure government assets have effective procedures in place to reduce demand at peak times.
- Implement Stage 1 of Energy Queensland's Virtual Power Plant.

5 Strengthen communication and procedures for power system events

- Implement an electricity summer preparedness communication plan to keep communities informed.
- Participate in state and national electricity and gas emergency and security exercises.
- Develop new Power System Risk Management Protocol.

What you can do to reduce peak demand during a heatwave

If you're feeling the heat, our electricity network is feeling the heat, too.

The electricity network always has to remain in balance between supply and demand. If the demand for electricity is greater than the available supply, there is no choice but to reduce demand or else the entire system can fail.

During a heatwave, residents may be asked to manage electricity network stress by changing air conditioners to 26 degrees or above and using cooling only in occupied rooms during peak hours. This helps us manage demand and mitigate the risk of load-shedding occurring.

Workplaces may be asked to use air conditioning at 26 degrees only in occupied spaces, avoid using advertising lights and other non-essential lighting, and turn off non-essential electrical equipment.

By working together as a community to reduce our electricity use during peak times, we can help keep reliable electricity supply on for everyone.

Queensland Energy Security Taskforce

The Queensland Energy Security Taskforce was established under the Powering Queensland Plan to guide the state's robust energy security for both the short and long terms. This includes implementing the recommendations of the Finkel Review accepted by Queensland.

The taskforce's first priority has been to develop a Queensland Summer Preparedness Plan 2017–18.

The taskforce members are:

- Mr Terry Effeney, former CEO of Energex and member of the Finkel Review Panel (chair)
- Prof Paul Simshauser, Director-General of the Department of Energy and Water Supply (deputy chair)
- Dr Christine Williams, Acting Queensland Chief Scientist
- Mr Jim Murphy, Queensland's Under Treasurer.

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Further **information**

For more information on the Powering Queensland Plan, visit https://www.dews.qld.gov.au/electricity/powering-queensland-plan

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