# SUPPORTING POWER SYSTEM SECURITY

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AEMC

# Overview

1. AEMC: Who we are and how we fit in?
2. Our focus in 2019
3. Reliability and security: different challenges, different solutions

# National governments and energy policy development


**Council of Australian Governments (COAG)**
implements policy reforms of national significance that require cooperative action by federal, state and territory governments


**COAG Energy Council**
is made up of the nation's energy ministers. They provide national leadership on energy market development which is so important for the health of the national economy

# Market body roles


**Australian Energy Market Commission**

Rule maker, market developer and expert adviser to governments

*Protects consumers and achieves the right trade-off between cost, reliability and security.*


**Australian Energy Regulator**

Economic regulation and rules compliance

*Polices the system and monitors the market.*


**Australian Energy Market Operator**

Electricity and gas systems and market operator

*Works with industry to keep the lights on.*

# Reliability Panel

The Reliability Panel, which forms part of the AEMC's institutional arrangements, reviews and reports on the safety, security and reliability of the national electricity system.

The Panel is comprised of members who represent a range of participants in the national electricity market, including:

Consumer groups

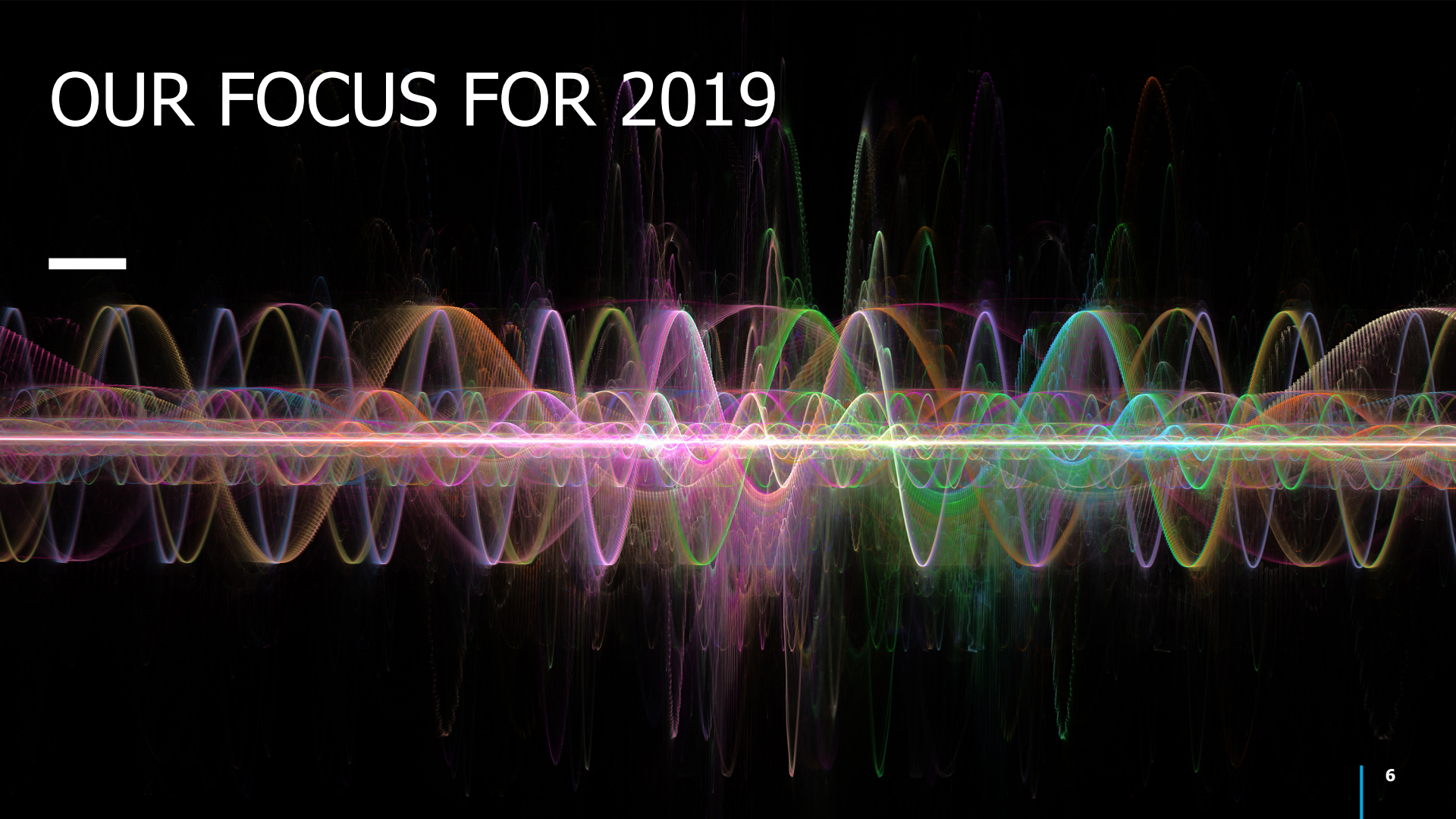
Generators

Network businesses

Retailers


Australian Energy Market Operator (AEMO)

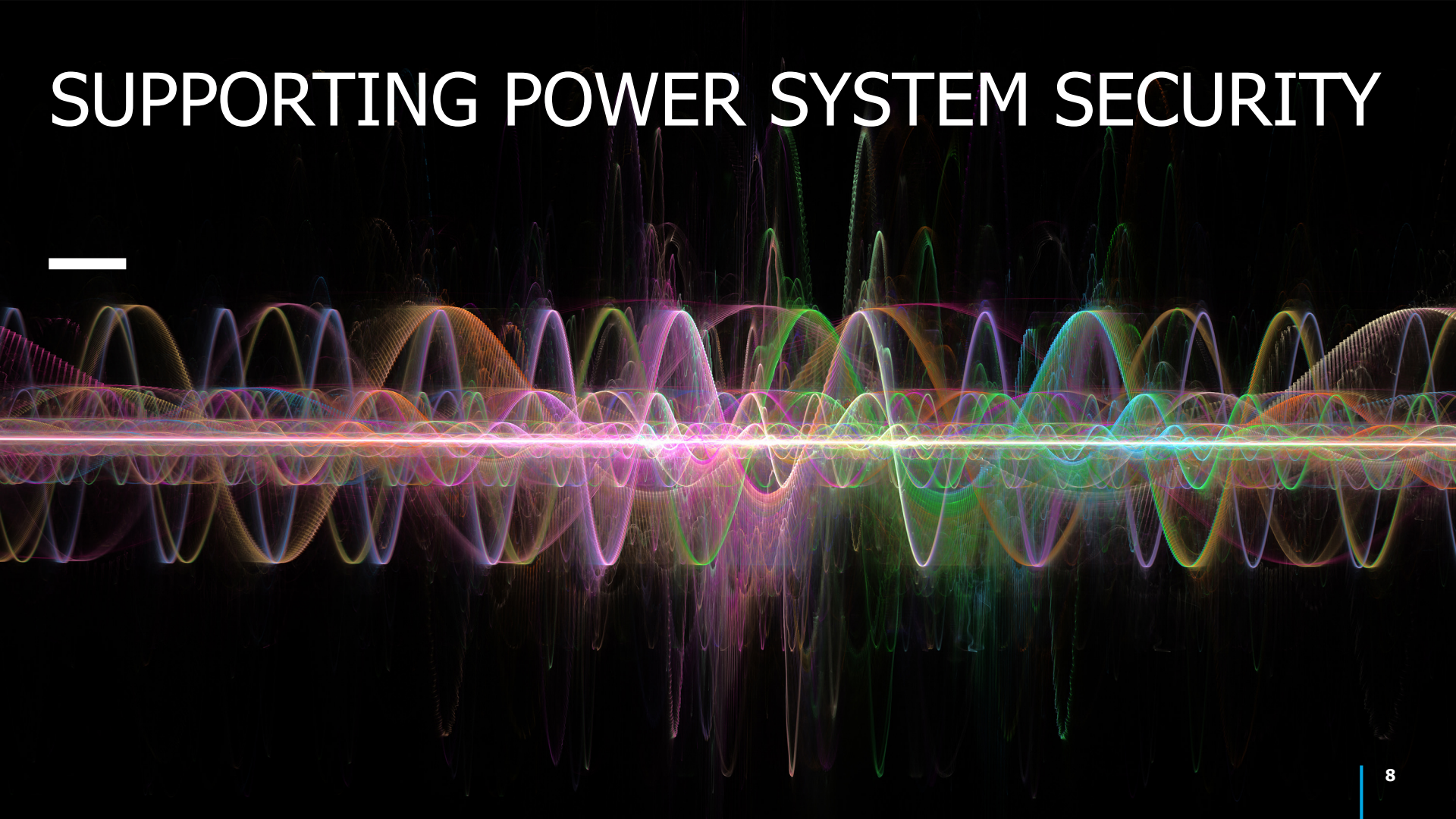
# OUR FOCUS FOR 2019



# AEMC key areas of focus

- Choice, control and protection for consumers
- A continuing focus on power system security
- Making it easier to buy and sell gas
- Encouraging the right amount of investment in the power system's capacity over the long term

# SUPPORTING POWER SYSTEM SECURITY



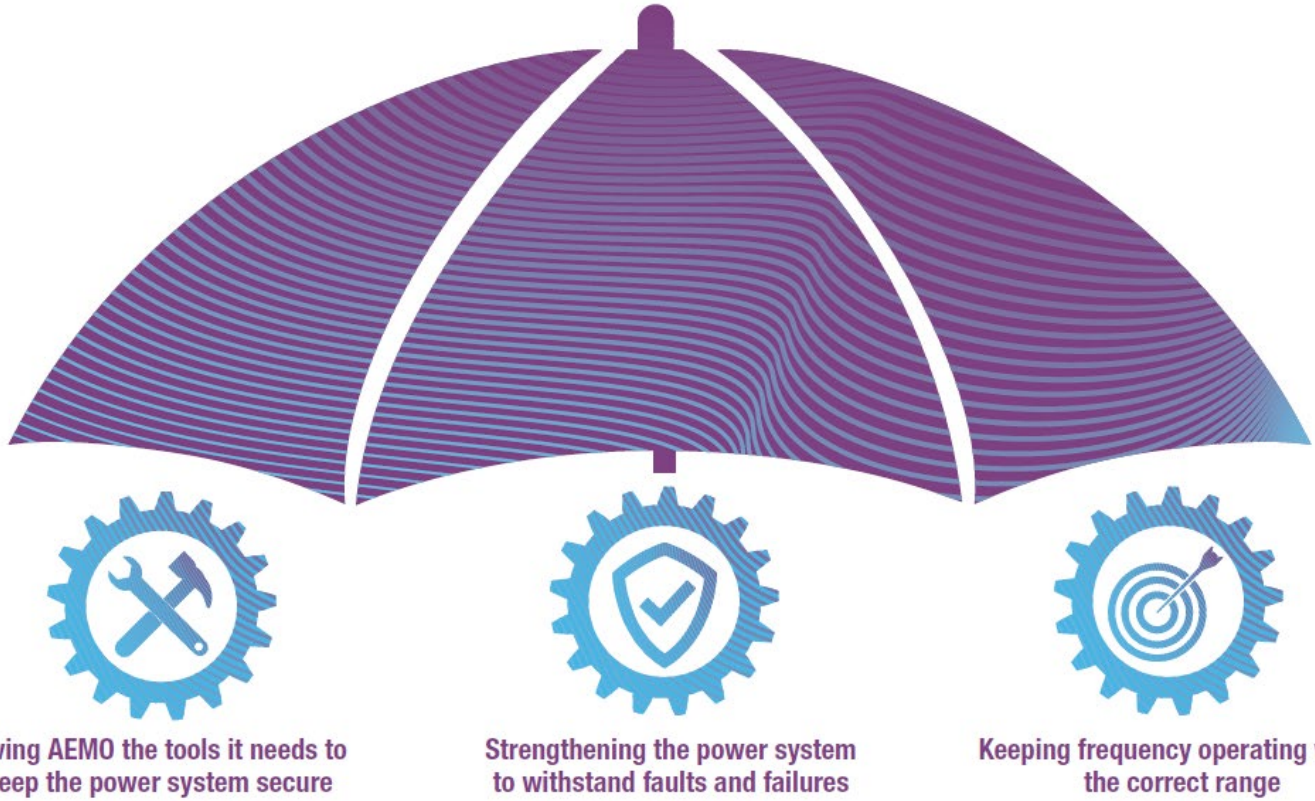
# Reliability and security: different challenges, different solutions

**Power system security:**
the power system's capacity to continue operating within defined technical limits even if a major power system element, like a large generator or a major customer, disconnects from the system.

**Power system reliability**:
having enough generation, demand response and network capacity to produce and transport enough electricity to meet consumers needs in line with the reliability standard

*A reliable power system will also be a secure power system; however, a secure power system is not necessarily always a reliable power system.*

# System security



# Keeping the power system secure

**Generator technical performance standards**
creating the foundation for a secure, least cost transition as new generators with different technical characteristics join the power system

**Generating system model guidelines**
helping AEMO manage the changing power system by requiring generators and networks to provide more detailed information about how their equipment performs

**Register of distributed energy resources**
giving AEMO and distribution network businesses more data to help keep the power system secure and safe, and to enable more accurate forecasting of consumer demand

# Strengthening the power system to withstand faults and failure

**Emergency frequency control schemes**
a new management framework for the 'last line defence' mechanism to help prevent system-wide blackouts

**Managing power system fault levels**
requiring networks to maintain minimum levels of system strength to keep the system stable

**Managing the rate of change of power system frequency**
requiring networks to maintain required minimum levels of inertia to keep the system secure

# Keeping frequency operating within the correct range

**Managing the rate of change of power system frequency**
working with AEMO to assess the required level of primary frequency control from generators

**Reliability Panel review of the frequency operating standard**
assessing whether the existing standard is appropriate to maintain a secure power system as the generation mix changes

**Frequency control frameworks review**
looking at ways to integrate new technologies and demand response to help keep the system secure

# A continuing focus on power system security

**Frequency control interim arrangements project**
working with AEMO on short-term changes to manage frequency deterioration in the NEM, making sure generators provide frequency control responses where feasible

**Intervention mechanisms and system strength project**
evaluating the effectiveness of the interventions framework in light of the increasing use of directions by AEMO to manage system security, and of related system strength frameworks

**Review of system black event in SA**
the AER has completed investigations into pre- and post-event issues. We will consider these in relation to amendments to the regulatory frameworks

# Thinking through implications of distributed energy resources and security

**AEMC/AEMO/AER virtual power plant trials**

trial to inform changes to regulatory frameworks and operational processes so VPPs can play a bigger role in the energy market

**ARENA-led Distribution Energy Integration Program (DEIP)**

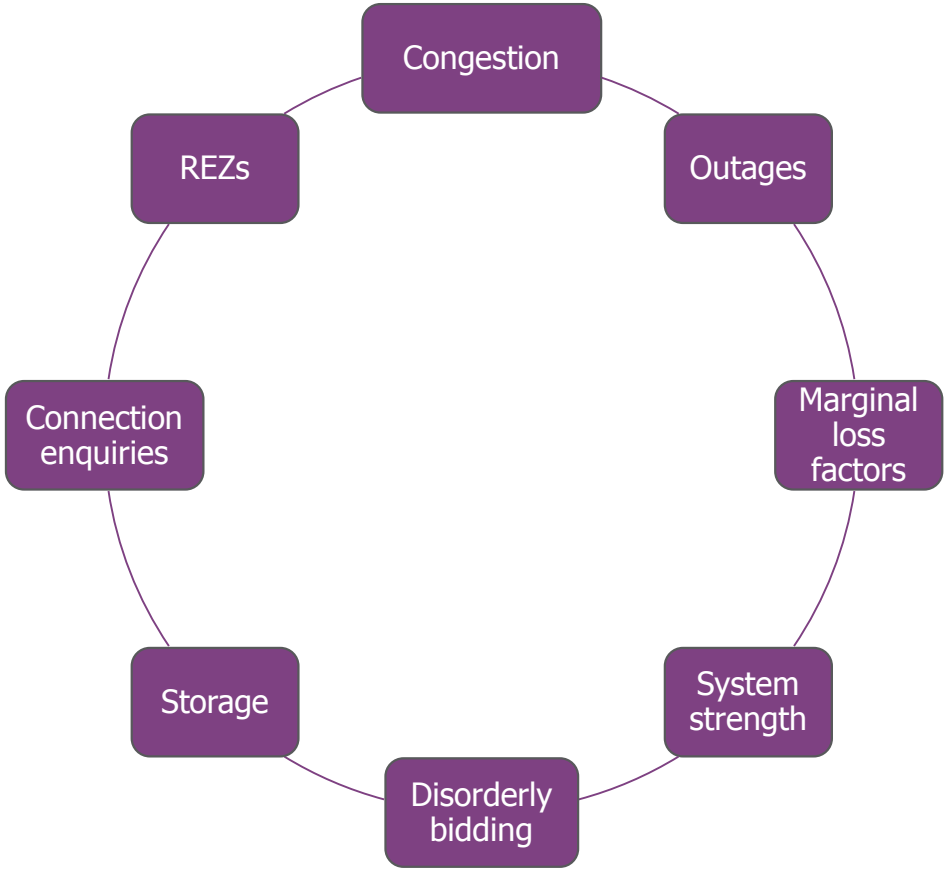
collaboration of 11 government organisations, market bodies, industry and consumer associations aimed at maximising the value of consumers' distributed energy resources

**Regulatory sandboxes**

Trialing innovative technologies, business products and models in a "regulatory sandbox" before broader changes to regulation are explored

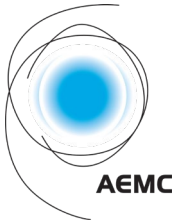
# Access reform – addressing issues including security holistically

- Reforming the access and charging regime is a more holistic and efficient solution to these issues.
- Changes need to be made to the access regime in order to facilitate this transition – this should be a phased approach.



We have a unique system in Australia where anyone, any company, government, advocacy group or individual person, can propose a change to the rules.

Collaboration is the key to success as it will deliver workable and lasting change.

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