

NEW RULES TO DELIVER A STRONGER, MORE STABLE POWER SYSTEM

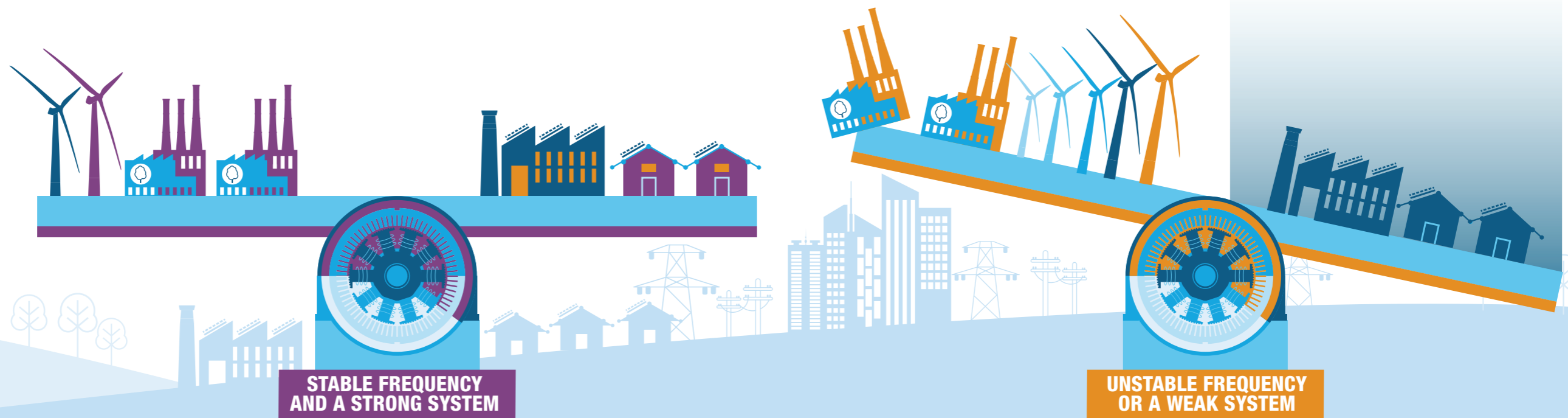
System security final rule determinations 19 September 2017

GUARDING AGAINST TECHNICAL FAILURES THAT CAUSE BLACKOUTS

Electricity generation is changing. The last decade has seen rapid penetration of new technologies like wind farms and solar. The AEMC has made new rules to strengthen the power system while allowing continued take-up of innovative generation technologies. Today's rules will help prevent system-wide blackouts and minimise costs to consumers.

Electricity supply and demand has to match. If not, the frequency changes. Uncontrolled frequency deviations can cause blackouts.

Technical characteristics of the system, like inertia and fault levels, are changing because more non-synchronous generation is connecting to the grid and synchronous generation is retiring. As synchronous generators leave, inertia and fault levels fall. Falling inertia makes it harder to control frequency. Falling fault levels make the system less stable and harder for generators to stay connected.



1 MANAGING THE RATE OF CHANGE OF POWER SYSTEM FREQUENCY BY REQUIRING MINIMUM INERTIA LEVELS



Make networks provide minimum levels of inertia when shortfalls are identified by AEMO



With AEMO approval networks can contract with suppliers to provide inertia substitutes like fast frequency response services from emerging technologies like batteries

2 MANAGING POWER SYSTEM FAULT LEVELS BY MAINTAINING MINIMUM SYSTEM STRENGTH LEVELS TO KEEP THE SYSTEM STABLE



Make networks provide minimum levels of system strength at key locations in the power system when shortfalls are identified by AEMO

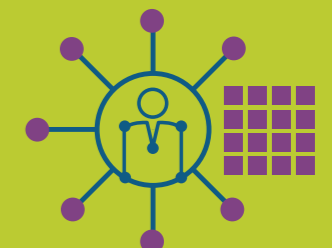


New generators must pay for remedial action if they impact system stability

3 IMPROVING GUIDELINES FOR GENERATING SYSTEM MODELS TO GIVE AEMO AND NETWORKS THE RIGHT DATA TO EFFICIENTLY PLAN AND OPERATE THE SYSTEM



Make generators and networks provide more detailed information about how their equipment performs to help AEMO manage the changing power system



Allows AEMO to request data to assess if remedial action is needed for system strength