

HAVE YOUR SAY ON DRAFT RULES TO SUPPORT NEW GENERATING TECHNOLOGIES

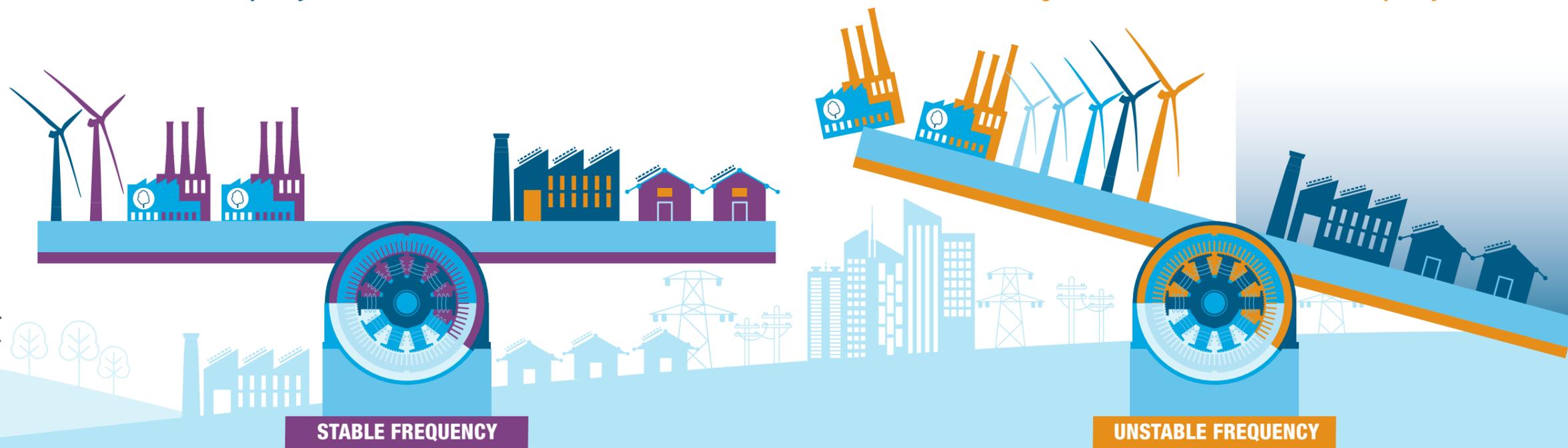
System security draft rule determinations 27 June 2017

CHANGING THE RULES TO DELIVER A MORE STABLE POWER SYSTEM

Electricity generation is changing. The last decade has seen rapid penetration of new technologies like wind farms and solar. In the past they were just a small fraction of total electricity supply. Now they are critical and growing. The AEMC has a new plan to strengthen the power system while allowing continued take-up of innovative generation technologies. Today's draft determinations will help prevent system-wide blackouts. Submissions are due 8 August 2017.

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, are changing because more non-synchronous generation is connecting to the grid as synchronous generation closes. As synchronous generators leave inertia levels fall. Falling inertia makes it harder to control frequency.



1 DRAFT RULE MANAGING THE RATE OF CHANGE OF POWER SYSTEM FREQUENCY

What do we want to fix?

The changing generation mix means the power system has less inertia. Less system inertia means frequency may become volatile. If frequency changes too fast then the system is at high risk of going black. The power system needs to be managed differently to integrate new technologies. This draft rule helps deliver more effective frequency control across the whole system.

Draft rules



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



Give AEMO more tools to increase inertia where required



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

2 DRAFT RULE MANAGING POWER SYSTEM FAULT LEVELS

What do we want to fix?

System strength is stronger or weaker in different places depending on the generation mix. It is a localised problem and is measured by the fault level at specific points in the network. More non-synchronous generation in a region makes the system weaker. The technical term for this weakness is a 'low short-circuit ratio'. This draft rule creates new obligations for generators and networks that will maintain system strength.

Draft rules



Make networks responsible for maintaining a minimum short circuit ratio for each connected generator



Generators must pay for remedial action if they cause minimum short circuit ratios to be breached



AEMO to monitor weak spots in the power system