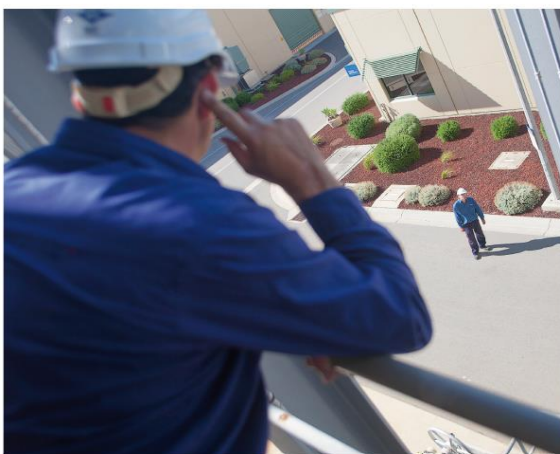


GENERATOR RAMP RATES AND DISPATCH INFLEXIBILITY

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- Important AEMO have access to sufficient generator ramping capability to ensure secure power system operation
- When generator ramping capability becomes scarce, the economic efficiency of the NEM can be impaired (eg counter price flows)
- In general, pool price provides incentive for generators to ramp up/down
- However, network constraints can create incentive for generators to minimise their ramping capability (OFA would remove this incentive)

NEM does not always provide a strong incentive for generators to offer high ramping capability, with the result that power system security issues and economic inefficiencies can arise

- Do not support mandating a product or service which is not a technical condition for generator connection
- Not a practical approach - ramping capability is a function of many variables (technical and commercial)
- Consideration of proposed Rule requires understanding of how it will be enforced – which will not be known until AER updates rebidding guideline
- Technical consideration – SCADA or bid value for ramp rate?

- At present, minimum ramping requirement is 3 MW/min (or 3% of capacity for units <100 MW)
- AEMO have previously indicated that this is sufficient
- Support a re-consideration by AEMO of whether this minimum level is still appropriate
- Localised ramping shortfalls could be resolved through a form of network agreement (ultimately OFA)
- Aggregated generators should provide minimum ramp rate based on the number of physical units within the aggregated set

- Increased intermittent generation increases need for flexible generating plant to ramp up/down
- Movements in non-flexible generation are often poorly correlated with demand changes - imposes even greater ramping requirement
- Are market signals adequate to ensure sufficient flexible generation sources are available at all times?
- Should introduce measures into the NEM which recognise the value that flexible generation brings to the market

- **Support sufficient ramping for security needs**
- **Generator maximum ramp rate capability varies**
- **Mandating service is counter to market principles**
- **Alternative, less draconian options could be considered**
- **Ultimately, favour explicitly recognising value of plant flexibility**