

Consultation on the definition of unserved energy

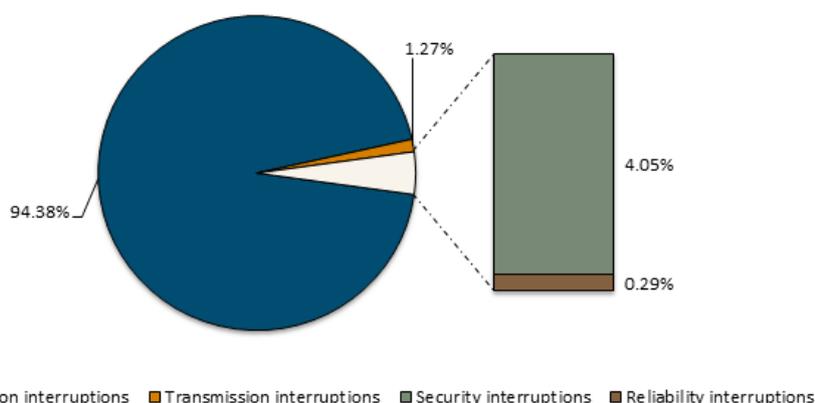
The Reliability Panel has released a consultation paper on what events should be included in or excluded from the calculation of unserved energy for the purposes of determining whether the reliability standard is met.

Background

In general, unserved energy refers to demand that has not been met, i.e. supply interruptions. Supply interruptions can occur from many reasons: reliability (e.g. not having enough generation or demand response to meet demand on a very hot day); security (e.g. load being shed to manage frequency across the system); or network (e.g. outages due to fallen power lines).

As the figure below shows, interruptions to consumer supply relating to the reliability of generators and interconnectors have historically represented a very small amount of all supply interruptions experienced by customers.

Sources of supply interruptions in the NEM: 2007/08 to 2017/18



Source: AEMC analysis.

In the NEM, the concept of unserved energy with respect to wholesale-level reliability is applied to measure any supply interruptions consumers experience from generation and interconnection inadequacy. That is, the amount of customer demand that cannot be supplied within a region of the NEM due to a shortage of generation, demand-side participation, or interconnector capacity. In other words, it is the amount of wholesale unserved energy that is relevant for the purposes of reporting on the reliability standard.

The reliability standard is an ex-ante standard which provides information to the market about the state of reliability in the NEM. The objective of the reliability standard is to allow for efficient investment sufficient to provide electricity to the agreed standard. The reliability standard is expressed in terms of unserved energy. Under the reliability standard, expected unserved energy must not be more than 0.002 per cent of the total energy demanded in a given year.

Scope of the consultation paper

The definition of unserved energy for the purposes of the reliability standard is included in the NEM - the definition sets out which types of events should be included or excluded (in a non-exhaustive manner) from the calculation. This review is examining this definition.

There are four core areas that the Panel considers may be potential issues associated with the definition of unserved energy.

- **Chapter 10 definition of unserved energy:** The Chapter 10 definition in the NER may not explicitly enough make it clear that unserved energy for the purposes of the reliability standard is isolated to wholesale supply interruptions. The Panel is interested in stakeholders' views on clarifying this.
- **Contingency-based framework:** The current contingency-based definition of unserved energy for the purposes of post-event calculation could be potentially complex to interpret in the constantly evolving power system. The Panel is interested in stakeholders' views on the appropriateness of the contingency-based definition of unserved energy.
- **Power system security events:** The NER, as currently drafted, do not exclude all power system security events from the definition of unserved energy for the purpose of the reliability standard. The Panel is interested in receiving stakeholders' views on whether all security events should be explicitly excluded from the definition of the unserved energy.
- **Reliability-related interventions:** The Panel is also considering how to account for AEMO's reliability-related interventions, such as involuntary load shedding or the RERT.

The review will not consider the appropriateness of the reliability standard. This matter is being considered by the AEMC in the *Enhancement to the Reliability and Emergency Reserve Trader (RERT) rule change request*.

Next steps

Submissions to the consultation paper are due by **02 May 2019**. Following this consultation, the Panel will assess whether there is benefit in changing the definition of unserved energy in the NER or it is still fit for purpose. If a need is identified, the Panel would then submit a rule change request to the AEMC to change the definition of unserved energy, and publish a final report outlining its rationale.

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