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Consultation paper – Definition of Unserved Energy

The Australian Energy Council (“**AEC**”) welcomes the opportunity to make a submission to the consultation paper on the definition of Unserved Energy (“**USE**”).

The AEC is the industry body representing 23 electricity and downstream natural gas businesses operating in the competitive wholesale and retail energy markets. These businesses collectively generate the overwhelming majority of electricity in Australia and sell gas and electricity to over 10 million homes and businesses.

The AEC supports the Reliability Panel’s efforts to clarify the definition of USE as this is a critical metric by which the industry is planned and actual performance is assessed. Whilst the current definition has largely worked well, unexpected outcomes have occasionally emerged and so it is appropriate to reconsider it.

Why we need a definition

The consultation paper largely correctly captures the value of a clear definition of USE which should be purely linked to shortfalls of *reliability*. Whilst customers’ experiences are the same in all interruptions, it is necessary to classify by causation because solutions to the different forms of interruptions are entirely different. If the classification is done poorly, the industry may incur wasted expense by fixing the wrong problem.

In the case of *reliability* interruptions, their extent can be reduced by:

- having greater generation or storage capacity installed and available,
- greater bulk transmission capacity, or
- voluntarily reducing demand.

For example, the amount of load at risk of interruption from *security* incidents cannot be reduced by investment in any of the above. Thus it is critical that the accounting of *reliability* USE is only that quantity of unmet demand that could be assisted through investment in one of the three above activities. This principle of considering the appropriate remedy should always be kept in mind when classifying USE.

However classification following real events is sometimes not straightforward. The AEC considers the authors of the current definition had the intent of capturing USE that could be remedied by the three activities above. They chose to achieve this through a prescriptive rules recipe. This is challenging because events emerge that were not foreseen at the time of writing the rules, such as 10 February 2017. The AEC considers the definitional clauses could benefit from a statement of the objective of USE classification to assist their interpretation. This could be, for example, “to identify customer interruption that would likely be affected, in the long-run, by the Reliability Panel’s choices on market settings”, and would be inserted ahead of 3.9.3C(b).

Demand Measurement

The current reliability standard and USE is built around grid-supplied demand. This was not an issue at the time of its creation as behind the meter (“BTM”) generation was negligible. It is correct for the paper to consider the treatment of BTM generation going forward.

BTM generation is largely disconnected during loss of grid supply as few customers are capable of “islanding”. To the extent that load supplied by BTM generation is therefore also lost, it may be appropriate to count this in USE which would lead to larger USE quantities during some interruptions. If this path is preferred, it will of course also be necessary to align the denominator in the Reliability Standard equation to gross demand inclusive of all BTM generation throughout the year.

Clearly this will make the accounting somewhat more complex and require estimates of unmetered BTM generation for both the numerator and denominator. Thus the Panel would need to consider the benefits of the change against these complexities. As the numerator and denominator would grow roughly equally, there may be only minor changes in the resultant calculation of performance against the standard.

Industrial Action

In February and November 2000, strikes in power stations led to a shortfall of generation to meet demand in Victoria, which were, in both cases, ultimately resolved by the state government invoking their emergency powers upon the relevant actors. In a physical sense the outages were a *reliability* shortfall, however it would be wrong to classify it as reliability USE as it does not indicate an underlying fragility in the physical system, and, the appropriate remedy should be through such industrial processes rather than expenditure in otherwise unnecessary plant.

This is the reason behind the present exclusion of industrial action, which the AEC supports.

Question 1: Definition of USE in chapter 10

The linkage in this definition to 3.9.3C(b) is explicit, so it is not clear how interpretations could emerge about it including other sources of load interruption. Its formulation through reference to a detailed clause is consistent with many other chapter 10 definitions.

Question 2 & 3: Contingency-based definition of USE and power system security events

The purpose of excluding contingency-based events is to remove interruptions due to events related to power system *security* rather than *reliability*. The best way to understand the need for this is to picture what remedy is necessary to avoid its repetition.

In the case of the 28 September 2016 system black, it is clear that additional capacity from one of the three forms described above could not have averted the event. Hence it should not be captured as reliability USE. It is clearly excluded by the existing clause which is the correct outcome.

However the 10 February 2017 event could have been avoided with additional capacity or lower demand so it seems anomalous that this event was excluded. It is the specificity of the clause’s reference to excluding a multiple generation contingency that obliged this unexpected outcome.

On reflection, it seems unlikely that any prescriptive classification can avoid all such anomalies.

The AEC suggests that if the clause was instead led with an objective statement as described earlier, and the existing clause reworded as a guidance rather than an instruction, it would become open to the Panel to contemplate the intent behind the classification for each event as it arises.

Question 4: Definition of USE

The AEC supports the third option, being the separate reporting of:

- actual reliability based consumer interruptions and
- hypothetical interruptions avoided as a result of interventions.

The quantities will provide more value if distinguished: the total is informative in relation to market settings, and the latter is informative as to the effectiveness of market intervention.

It must be recognised that intervention to avoid USE is not precise. The paper correctly recognises that Reliability and Emergency Reserve Trader (“**RERT**”) dispatch will typically exceed the amount of USE it is dispatched to avert. The correct accounting of such USE should be limited only to that which was avoided, not the RERT that was actually dispatched.

The same applies to AEMO instructed load shedding. The accounting of USE should be limited to AEMO’s instructions only, and if, due to practical reasons or error, a larger volume is interrupted, only AEMO’s instructions should be accounted.

The same also applies to mandatory restrictions. Contrary to the statement in the paper¹, mandatory restrictions were applied by the Victorian government in February 2000². This caused a considerable fall in demand to a much greater extent than was necessary to avoid USE. At the time, the Reliability Panel attributed the entire fall in demand to USE, which was erroneous in AEC’s opinion. Any quantity of USE reported should be limited only to that which would have actually occurred absent the restrictions.

Question 5: Matching consumer experience of supply interruptions

As discussed above, it is crucial that a correct USE classification occurs in order that the industry may focus its attention on the correct remedy. The fact that customers’ actual experience of interruptions is over one hundred times greater creates a public perception problem, but does not in any way invalidate the need for the accurate classification.

The public perception problem can be addressed by publishing the quantities of all classifications of interruption in the Reliability Panel’s annual performance reports. Whilst network interruptions are outside the Reliability Panel’s scope, data on them for the purposes of comparison can be readily obtained from the Australian Energy Regulator.

Question 6: Exclusion of demand-response from USE

The AEC supports the continued exclusion. Demand-response is a legitimate within-market activity and it would be inconsistent to record it as USE.

Any questions about our submission should be addressed to me by email to ben.skinner@energycouncil.com.au by telephone on (03) 9205 3116.

Yours sincerely,



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¹ Page 23

² See page 37 of AEMC Consultation Paper “Investigation into intervention mechanisms and system strength in the NEM”