

Tranche two regulations issues paper: Consultation submission form

This form is to be used to provide feedback on a series of questions included in the [Tranche two regulations to support the Electricity Infrastructure Roadmap Issues Paper \(PDF 800KB\)](#) to help inform the development of the regulations.

Please see the [Electricity Infrastructure Roadmap webpage](#) for more information.

Consultation questions

You do not need to answer every question. Please answer the questions of interest to you.

Chapter numbers indicate the location of questions in the Issues Paper.

Please make your submission by **5pm on Friday 21 May**.

Confidentiality and submissions

Providing submissions is entirely voluntary, is not assessable, and does not in any way include, exclude, advance or diminish any entity from any future procurement or competitive process regarding the Electricity Infrastructure Roadmap, or any other NSW programs.

The NSW Government is committed to an open and transparent process, and all submissions will be made publicly available unless the stakeholder advises the Department not to publish all or part of its submission. Authors may elect for some or all of their submission to be kept confidential. If you wish for your submission to remain confidential please clearly state this in your submission.

Your details

Submission type	<input type="checkbox"/> Individual <input checked="" type="checkbox"/> Organisation <input type="checkbox"/> Other Click or tap here to enter text.
Author name	Ben Skinner
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Stakeholder group	<input type="checkbox"/> Generation or storage infrastructure provider <input type="checkbox"/> Electricity consumer or representative body <input type="checkbox"/> Network infrastructure provider

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	<input type="checkbox"/> Energy retailer <input type="checkbox"/> Government or market institution <input type="checkbox"/> Individual <input checked="" type="checkbox"/> Other (please specify) Industry Association
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Questions

Chapter 4 – Energy Security Target

Question 1: Should the Energy Security Target Monitor define the method to determine the derating factor or should the method be defined in the regulations? If not by the derating factor, how else should the regulations address the probabilistic nature of semi-scheduled generators in the context of the deterministic Energy Security Target?

AEC contributed a submission to the pre-legislative consultation in June 2020 that dealt extensively with these issues. Please see:

<https://www.energycouncil.com.au/media/i5bfmrjk/20200622-aec-nsw-energy-security-target.pdf>

In today's NEM, deterministic intra-state assessments can no longer provide a meaningful assessment of a power system's true state of reliability. For this reason, AEMO has been progressively moving to full probabilistic simulation and discarded its last deterministic tools in 2016.

Furthermore, should the Monitor attempt to employ the deterministic approach with a N-2 criterion, it is likely to produce extremely conservative results that are misleading with respect to the true state of reliability creating unnecessary alarm for stakeholders. If action is taken as a result of these results, it will lead to unnecessary adverse impacts on customers.

The AEC suggests that the regulations not include any bespoke NSW deterministic method. In the absence of such a method, the Monitor will revert to relying wholly upon Section 43(3): the NEM's reliability standard. This represents an appropriate balance between cost and reliability which is assessed using probabilistic simulation.

With respect to which probabilistic standard to adopt for Section 43(3), the AEC recommends using the permanent standard as recommended by the Reliability Panel which is presently conducting a review of the appropriate standard. By early 2022 this review should resolve the inconsistency between the permanent and interim reliability standards.

With respect to the question posed here, converting probabilistic concepts into deterministic measures is not achievable and cannot provide a meaningful measure of the true state of reliability.

Deterministic simplifications always required severe simplifications, but when all plants were of a traditional thermal or hydro construction of similar failure rates, and

	<p>there was negligible demand-side response, the results were still reasonably useful.</p> <p>In a market with a substantial quantity of Variable Renewable Energy, short-term storage and demand-side response it is not possible to develop a meaningful deterministic assessment.</p> <p>For example, the periods of lowest reserve in future will not necessarily occur at times of extreme demand, but during extended periods of low VRE, when storage energy and demand-side response capability is exhausted.</p>
<p>Question 2: Should the regulations prescribe any other matters for inclusion in the Energy Security Target Monitor's report? If so, what are they?</p>	<p>As discussed in Question 1, the AEC prefers the regulations do not prescribe any deterministic quantities, thereby resolving the Energy Security Target on the Unserved Energy Approach. The only matter that should be prescribed is that the Reliability Panel's Target and that AEMO's reliability forecasts should be adopted for the Target.</p> <p>If the Monitor persists with using a deterministic method, it is likely to identify misleading information about reliability. For example:</p> <ul style="list-style-type: none"> • It is understood that in this calculation storage will not be derated regardless of its sustainability, even if it contains only minutes of energy. (Note the AEC does not recommend deterministically derating short-term storage – to do so would be even more misleading). • The nominal capacities for interconnectors that AEMO publishes for the Integrated System Plan and 3.13.3(p) of the National Electricity Rules assume the interconnectors are not competing for network capacity into NSW with NSW based generators. In reality, a substantial part of the generation capacity that the Target intends to include cannot operate simultaneously with these interconnector capacities. This conflict is correctly captured in the network models that underpin AEMO's Electricity Statement of Opportunities (ESOO) and MTPASA modelling but cannot be part of a deterministic assessment of the type anticipated by the legislation. <p>Should the Monitor identify a shortfall in meeting the deterministic Energy Security Target, then before it made any recommendations it would need to develop and analyse probabilistic simulations in order to understand whether there is a true reliability concerns, and what type of resources would be useful in its resolution.</p> <p>Noting the probabilistic nature of modern power systems, the Monitor's report should not describe reliability shortfalls on a</p>

	MW basis, which is no longer a meaningful metric.
Chapter 5 – Electricity Infrastructure Investment Safeguard	
Question 3: To what extent are the requirements for carrying out competitive tenders of Long Term Energy Service agreements appropriate? Are there any other requirements that should be considered?	<p>The AEC considers the LTESAs should be introduced in the way that causes minimum distortion on the market. This is achieved by exposing recipients to the same marginal risks as a fully merchant investment, such as price volatility, ancillary services costs, congestion and losses. The least distortionary way to subsidise new entry is with a one-off grant and no trailing exposures to the customer trustee. Put-option style arrangements are problematic as they:</p> <ul style="list-style-type: none"> • Inefficiently distort behaviours, e.g. <ul style="list-style-type: none"> ○ discourage mothballing/closure during over-supply, ○ incentivise the maximisation of energy output over time over the provision of capacity at the time of most value to the customer (e.g. high temperature tolerance of wind farms). • Change the incentives for the resources to contract with retailers, and • Create uncertain and potentially unlimited exposure to the consumer trustee. <p>In the list of matters to be considered for the tender, impact on wholesale prices should be explicitly excluded as this is distortionary to market investment and ultimately self-defeating.</p> <p>Along with network investment, impact on congestion should be part of the assessment.</p>
Question 4: Do you agree with the matters the Consumer Trustee must take into account when preparing the Infrastructure Investment Objectives Report? Are there any other matters that should be taken into account?	<p>The list of matters to take into account is reasonably comprehensive. The AEC suggests two further:</p> <ul style="list-style-type: none"> • AEMO's publications, particularly the ESOO and Integrated System Plan (ISP). • A view on expected market investments, and how actions taken by the Consumer Trustee can avoid undermining these.
Question 5: In what circumstances should the Consumer Trustee prefer long duration storage over firming infrastructure to meet the reliability standard?	<p>Whether customer reliability can be maximised with additional storage, demand-side or conventional "firming" assets is an intricate optimisation problem that can only be determined through contemporary probabilistic modelling. The need for each asset class will change over time depending on conditions.</p> <p>The requirement for deep storage to have at least 8 hours of</p>

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	<p>energy for its registered capacity is similar to arrangements in the US which have perversely led to storages de-rating their capacity registrations. This means its full capacity becomes unavailable for dispatch to meet short-term requirements, even during load shedding.</p> <p>This is another reason why only probabilistic approaches should be used in determining power system reliability questions. If, however, the government is persists with a deterministic approach, this perverse outcome could be avoided by applying the lower of registered capacity or storage energy divided by 8 hours.</p>
Chapter 6 – Classification of REZ network infrastructure	
Question 6: Are there any other considerations that should be taken into account in classifying REZ network infrastructure in regulations, including the need for, and scope of, sub-classifications?	See AEC submission to Energy Security Board consultation on REZ and to C-W Orana REZ access schemes https://www.energycouncil.com.au/media/lmlezyko/20210430-rez-central-west-orana-access-scheme.pdf . The performance of Alternating Current networks is dependent on all connected assets – even those outside of NSW. Attempting to link network transfer capacities to specific asset sub-classifications is extremely challenging and creates many boundary issues. It is not practical within the “hub and spoke” network representation employed in the National Electricity Market’s Dispatch Engine, which describes constraints at the generator terminals rather than at points on the network.
Question 7: What types of network infrastructure could be subject to economic regulation under Part 5 of the EII Act?	The REZs remain monopoly assets even if they are partly funded by connecting generators. They should ultimately be regulated by the Australian Energy Regulator under the National Electricity Rules, ideally seamlessly included within the regulation conventional network assets.

Supporting information

<p>If you have additional information you would like to provide to support your views, please provide it here.</p> <p>If you have additional documents to provide to support your views, please email it with your submission.</p>	<p>Click or tap here to enter text.</p>
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Confidentiality and submission publication preferences

Please indicate your publication preferences.

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Would you like all or part of your submission to be confidential? If so, please identify the part(s) in your submission	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
<p>For confidential submissions: Some confidential submissions may be shared with the Australian Energy Market Operator, Australian Energy Market Commission, Australian Energy Regulator, the Energy Security Board, TransGrid, the Clean Energy Finance Corporation, Australian Renewable Energy Agency, Essential Energy, Endeavour Energy and/or Ausgrid to better understand and respond to issues raised.</p> <p>Would you like your submission to be kept confidential from these parties?</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No
If your submission is published, only your name and organisation would be published. Would you like your submission to be anonymous and these personal details redacted?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
<p>The Department will redact personal details from submissions made by individuals to protect personal information. In the absence of an explicit declaration to the contrary, the Department will assume that information provided by respondents is not considered intellectual property of the respondent.</p> <p>The Department may disclose confidential information provided by you to the following parties:</p> <ul style="list-style-type: none">• The NSW Minister for Energy and Environment or Minister's office• The NSW Ombudsman, Audit Office of NSW or as may be otherwise required for auditing purposes or Parliamentary accountability• Directly relevant departmental staff, consultants and advisors• The Australian Energy Market Operator, Energy Security Board, Australian Energy Market Commission, Australian Energy Regulator, or the Australian Competition & Consumer Commission• TransGrid, the Clean Energy Finance Corporation or the Australian Renewable Energy Agency or distribution network service providers• Other parties where authorised or required by law to be disclosed. <p>Where the Department discloses this information to any of these parties, it will inform them that the information is strictly confidential.</p> <p>The Department may publish or reference aggregated findings from the consultation process in an anonymised way that does not disclose confidential information.</p> <p>We may be required to release the information in your submission in some circumstances, such as under the <i>Government Information (Public Access) Act 2009</i>.</p>	

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