



TERRAIN SOLAR

23 May 2021

Department of Planning, Industry and Environment
Electricity Roadmap Team
Via email to: Electricity.Roadmap@dpie.nsw.gov.au

Dear Electricity Roadmap Team,

Terrain Solar Submission on Tranche Two Regulations to Support the Electricity Infrastructure Roadmap Issues Paper

Terrain Solar is an intending participant in the National Electricity Market (NEM) as a generator and has developed a number of renewable energy projects in NSW many of which are either under construction or are operational, including:

- the Corowa Solar Farm;
- Junee Solar Farm;
- Wagga North Solar Farm; and
- Molong Solar Farm.

Please find attached the completed consultation submission form for the Tranche Two regulations issues paper.

We thank you for the opportunity to provide a submission. If you have any questions in relation to this submission, please don't hesitate to contact me using the contact details provided below.

Yours sincerely,

Chris Wilson

Director, Terrain Solar
E-mail: [REDACTED]

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	Chris Wilson
Organisation	Terrain Solar
Author title	Director
Phone	<div></div>
Email	<div></div>
Stakeholder group	<input checked="" type="checkbox"/> Generation or storage infrastructure provider <input type="checkbox"/> Electricity consumer or representative body <input type="checkbox"/> Network infrastructure provider

	<input type="checkbox"/> Energy retailer <input type="checkbox"/> Government or market institution <input type="checkbox"/> Individual <input type="checkbox"/> Other (please specify) Click or tap here to enter text.
--	--

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?

Given the dynamic nature of the electricity market we believe the Energy Security Target Monitor would be better placed to define the derating factor rather than have it defined in the regulations.

Given the Energy Security Target is a deterministic target, we believe an assessment using the probabilistic contribution of semi-scheduled generators towards *firm capacity* is highly problematic and may lead to system security and/or reliability issues.

As observed on 31 January 2020 when electricity prices in NSW consistently hit the price cap from 4pm to 7pm due to a separation event between Victoria and South Australia, this event also coincided with a shortage of generation available in NSW and VIC with two of the largest generators shut down and high demand in both states¹.

A probabilistic approach to derating factors would result in events like that of 31 January 2020 causing limited reserve margins to be available which may lead to blackouts or brownouts within NSW.

Instead, a deterministic approach should be developed which only considers *firm capacity* available during a worst-case network contingency event and should be based on the sum of:

- Interconnector capacity with the most influential interconnector assumed to be out of service. Capacity should also assume flows across NSW, VIC and QLD (and possibly SA in the future) where *maximum demand* (10% POE) occurs simultaneously across each state as was observed on 31 January 2020.

¹ AER report on electricity spot prices above \$5000/MWh across South Australia, Victoria and New South Wales on 31 January 2020
(<https://www.aer.gov.au/system/files/31%20Jan%20%245000%20Report%20SA%20Vic%20NSW.pdf>)

Tranche two regulations issues paper

Consultation submission form



	<ul style="list-style-type: none">• Summer scheduled capacities of scheduled generators in NSW (with the two largest generators shut down) taking into account the most influential interconnector out of service and any constraints on generator dispatch associated with that network configuration (i.e. including NEMDE binding constraints)• Summer scheduled capacities of scheduled storage assets in NSW taking into account the most influential interconnector out of service and any constraints on storage dispatch associated with that network configuration (i.e. including NEMDE binding constraints)• Summer scheduled capacities of semi-scheduled wind generators according to the lowest wind condition across NSW for the previous 10 years and taking into account the most influential interconnector out of service and any constraints on generator dispatch associated with that network configuration (i.e. including NEMDE binding constraints) <p>Summer scheduled capacities of semi-scheduled solar generators should not be included in the <i>firm capacity</i> calculation as <i>maximum demand</i> conditions can occur in evening hours where there is no solar output.</p> <p>Non-scheduled generators over 30MW should also not be included in the firm capacity calculation as many of these generators are seasonally dispatched (for example biomass) and therefore cannot be guaranteed to be available during <i>maximum demand</i> conditions.</p> <p>In addition, only existing generation, not committed generation, should be included in the above assessment of <i>firm capacity</i> given committed generators may not be built on time to contribute towards a <i>maximum demand</i> event.</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?	Click or tap here to enter text.
Chapter 5 – Electricity Infrastructure Investment Safeguard	
Question 3: To what extent are the requirements for carrying out competitive tenders of Long Term	The Long Term Energy Service Agreement (LTESA) competitive tender requirements should take into consideration the following:

Tranche two regulations issues paper

Consultation submission form



<p>Energy Service agreements appropriate? Are there any other requirements that should be considered?</p>	<ul style="list-style-type: none">• Likelihood of projects being commissioned on time. This includes taking into consideration the dependence of projects on infrastructure upgrades (and risk of associated potential delays), whether projects require debt financing and/or third-party power purchase agreements, etc.• Consideration of the infrastructure investment required to facilitate the prospective projects should be taken into account with long-term financial value to consumers considering costs from a holistic perspective.• Avoiding a concentration of projects, either in scale or location, which could lead to a high impact single point of failure in the event of a network contingency event, natural disaster, etc.• Encouraging projects that not only stimulate regional economies but local manufacturing in NSW as well.
<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>	<p>The Consumer Trustee should also take into account the following matters:</p> <ul style="list-style-type: none">• Encourage diversification of project sizes and locations to improve reliability and avoid high impact single points of failure caused by network contingency events, natural disasters, etc.• When assessing scenarios and selecting the preferred scenario there should be consideration of having stranded assets in the future and the impact this may have, not only to NSW consumers, but also the investment community. The Consumer Trustee should take into consideration the damage particular scenarios may cause to future investment in the State, not just least regrets to NSW consumers.• Impact of providing guarantees to renewable energy generators under LTESAs as well as firm access under infrastructure investments holistically on the NSW Treasury balance sheet. Preference should be given to scenarios that minimise the guarantee required by NSW Treasury taking into consideration both LTESAs and infrastructure firm access.• Impact of prospective rule changes, including ESB's 2025 market re-design, etc.• Use of financial instruments as well as physical infrastructure to minimise cost burden to NSW consumers. For example, the Consumer Trustee should preference projects that can not only hedge their own position but also assist the NSW

	Consumer Trustee in hedging its position using inverse swaps.
<p>Question 5: In what circumstances should the Consumer Trustee prefer long duration storage over firming infrastructure to meet the reliability standard?</p>	<p>As per our response in Question 1, both long duration storage and firming infrastructure should be included in the firm capacity calculation. However, with regard to reliability standards, network contingency events, such as that experienced on 31 January 2020 can mean binding constraints limit the availability of dispatchable generation.</p> <p>If the Consumer Trustee places a preference on long duration storage over firming infrastructure to meet the reliability standard, then this can lead to a concentration of capacity which may not be available during a worst-case <i>maximum demand</i> event.</p> <p>The Consumer Trustee should employ a strategy to avoid high impact single points of failure caused by network contingency events, natural disasters, etc. and procure services that provide resilience to these types of events.</p> <p>As Tasmania experience in 2015 to 2016, El Nino weather events can preclude the ability of hydro generation to guarantee dispatch when required.</p> <p>Therefore, we encourage the Consumer Trustee to consider procuring firming services that offer a diverse portfolio across technologies, scale and geography. No preference should be given to long duration storage in meeting the reliability standard.</p> <p>Furthermore, given the main purpose of long duration availability contracts is to support the deployment of further renewable energy (i.e. support fixed shape, fixed volume swaptions, mitigate negative price intervals, etc.), long duration storage projects should not be permitted to receive both availability contracts as well as firming contracts. The two instruments serve different purposes and issuing both types of contracts to the same project complicates the delivery of services especially when they may potentially conflict with each other. For example, a project that holds both availability contracts as well as firming contracts may choose to dispatch and support fixed shape, fixed volume renewable energy LTESAs which leads it to be less than fully available during system reliability events which can be unpredictable.</p>
<p>Chapter 6 – Classification of REZ network infrastructure</p>	

Tranche two regulations issues paper

Consultation submission form



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?	Click or tap here to enter text.
Question 7: What types of network infrastructure could be subject to economic regulation under Part 5 of the EII Act?	Click or tap here to enter text.

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>	Click or tap here to enter text.
--	----------------------------------

Confidentiality and submission publication preferences

Please indicate your publication preferences.

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 checked="" 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	

Tranche two regulations issues paper

Consultation submission form



- 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.

Where the Department discloses this information to any of these parties, it will inform them that the information is strictly confidential.

The Department may publish or reference aggregated findings from the consultation process in an anonymised way that does not disclose confidential information.

We may be required to release the information in your submission in some circumstances, such as under the *Government Information (Public Access) Act 2009*.

Disclaimer: The information contained in this publication is based on knowledge and understanding at the time of writing (April 2021) and may not be accurate, current or complete. The State of New South Wales (including the NSW Department of Planning, Industry and Environment), the author and the publisher take no responsibility, and will accept no liability, for the accuracy, currency, reliability or correctness of any information included in the document (including material provided by third parties). Readers should make their own inquiries and rely on their own advice when making decisions related to material contained in this publication.