RESPONSE #4750 SUBMITTED ON 05/21/2021 03:31:05 PM

Tranche two regulations issues paper consultation submission form

Your details

Submission type	**Organisation**
If Other, please describe	*No answer given*
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Stakeholder group	**Network infrastructure provider**
If Other, please describe	**Also generation and storage provider**

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?	**The EST Monitor should define the method with due regard to local conditions and associated storage.**
Question 2: Should the regulations prescribe any other matters for inclusion in the Energy Security Target Monitor's report? If so, what are they?	**No. The regulations should not be more prescriptive. Too much prescription in the NER has prevented the grid development that NEM transformation now requires.**

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?	**Not appropriate. Developer land rights are critical, as are developer provisions and plans for community benefits, jobs and social licence.**
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?	**Consideration of coal plant retirements is not adequate. There is a serious risk of substantially advanced retirements of multiple coal plants in the 2020s, hence an urgent need to develop the grid to deliver resilience against this risk. The IIO Report needs to enunciate the strategic basis of its plans.**
Question 5: In what circumstances should the Consumer Trustee prefer long duration storage over firming infrastructure to meet the reliability standard?	**Early development of long duration storage is a critical requirement in zones where there are suitable sites for substantial and efficient long duration storage.**

Chapter 6 – Classification of Renewable Energy Zone (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?	**Long duration storage that contributes to grid efficiency should be an allowed sub-classification. It should be left to the Consumer Trustee's request and independent consideration by the Infrastructure Planner to determine the appropriate scope of projects recommended.**
Question 7: What types of network infrastructure could be subject to economic regulation under Part 5 of the EII Act?	**It is not possible to foresee in regulations, written in advance ,all the situations that will require decisions under s41 of the EII Act.**

Supporting information

If you have additional information you would like to provide to support your views, please provide it here	**Please consider the free form submission attached.**
If you have additional documents to provide to support your views, please upload them here	**Walcha Energy Supplementary Submission to DPIE Tranche 2 consultation.pdf**

Confidentiality and submission publication preferences

Would you like all or part of your submission to be confidential?	**No**
Would you like your submission to be anonymous and these personal details redacted?	**No**

Attached Files

Walcha Energy Supplementary Submission to DPIE Tranche 2 consultation.pdf

https://nswdpie.tfaforms.net/uploads/get/017d81113965a69898ca1a71db5d5197-WalchaEnergySupplementarySubmissiontoDPIETranche2consultation.pdf (https://nswdpie.tfaforms.net/uploads/get/017d81113965a69898ca1a71db5d5197-WalchaEnergySupplementarySubmissiontoDPIETranche2consultation.pdf)

New South Wales Government Electricity Infrastructure Roadmap Consultation on Tranche 2 Regulations

Supplementary Submission of Walcha Energy

This submission supplements Walcha Energy's brief responses provided on the submission form.

Energy Security Target

Question 1 and Question 2 address the role of the Energy Security Monitor

The Energy Security Target (EST) aims to ensure that firm capacity remains capable of meeting the sum of maximum demand and reserve margin. "The reserve margin acts as a buffer to ensure supply can meet the forecast maximum demand."

The proposed method of calculating the reserve margin (sum of the 2 largest generator capacities to allow for possible plant failures) is fine for the moment, while the big risk is concurrent failures of aged coal plants. However this measure will quickly become unfit for purpose as large coal plants retire.

Largest renewable generators such as SFs and WFs of (say) 1,000MW are not subject to huge generation plant failures and shutdowns, because they comprise a group of relatively small generating units. They cannot simply be substituted for a 705MW coal generating unit in the reserve margin determination. The NSW coal plants were provided with grid connections that have adequate redundancy. Will this be done for REZ generators or will the pressure for minimal REZ development cost create a new area of risk?

In the view of this submission, the reserve margin challenge will move away from generator failure and toward grid limitations, the amount of power that will be tripped off by a grid outage. The remedy is to provide sufficient grid redundancy.

500kV grid redundancy: Completion of the 500kV ring in NSW between Bayswater and Bannaby may prove to be insufficient to secure delivery of supply to the NSW load centres as the extent of generator connections to the ring increases. More grid redundancy may be required with an extra double circuit to Sydney from the north and from the south, unless rooftop and storage mitigate load centre core business demand and new regional loads pick up much of the generated power. This will need to be monitored by the EST Monitor and the Consumer Trustee.

With very large renewable generators connecting to the grid by a dedicated connection it is now essential that AEMO establish and publish for each proposed REZ hub the maximum MW that can be permitted to connect to the main grid via a single circuit line. Also the power that might be connected via a double circuit line in excess of the rating of one circuit where runback is provided for a circuit outage.

Question 1 response: This submission finds the discussion in the issues paper of "derating factors" for renewables, intended for estimation of firm capacity, to be obscure. It is considered likely that the relevant times of day used in the assessment of the contribution of renewables will change.

The firm capacity assessment seems to ignore the rapidly increasing role of battery firming and power shifting, be it at SFs and WFs or rooftops. Furthermore it does not address the big picture. The preferred first option should not be locked in by regulation as the calculation will need to be reassessed periodically. It is considered that the method of assessment should be allowed to continue to evolve as the energy environment changes.

The assessment of the firm component of WF generation as 10% of nameplate seems to indicate that on the hottest days there is on average low wind, and in the evening SF generation is running out of steam at 13% of nameplate. The contributions of associated storage (which have been required to have separate metering) appears to be ignored in these assessments and in any case firming and generation time-of-day supply shifting has only recently achieved widespread adoption.

It must be recognised that in a perfectly interconnected grid, that extends further than local weather patterns, the availability of wind generation tends towards the capacity factor of the wind generators, a very much higher percentage of nameplate capacity than that assessed in this process.

Question 2 response:

The 10 year look ahead for the EST Monitor report is wise. It needs to cover the lead times for RE generation of up to 3 years, for grid augmentation of 5-7 years (depending on status of readiness), and even longer lead times for PHES, plus a margin for decision-making time. This submission endorses the Department's view that the EST Monitor should maintain the discretion (item (f)) to include other information it considers relevant. To Question 2 the answer is NO the Regulations should not be made even more prescriptive.

One further comment: "The Minister can direct a network operator to carry out a priority transmission infrastructure project under part 5 of the EII Act."

Attention is drawn to one of the constraints on this power, contained in s34 (2) of the Act:

> (2) The Minister must not direct a network operator to carry out a priority transmission infrastructure project unless the Minister has considered the following—
>
> (a) existing network infrastructure in the area in which the priority transmission infrastructure project will be located,
> (b) land use planning, environmental and heritage matters,
> (c) the views of the local community in the area in which the priority transmission infrastructure project will be located,
> (d) other matters prescribed by the regulations.

This provision makes it imperative that a great deal of preparatory work including environmental assessment and community consultation take place ahead of recognition of the urgent need that requires Ministerial direction.

As the Department has recognised, social licence is critical. This is particularly relevant to gaining approval for grid development. Grid development planning for REZ connection needs to anticipate future and contingent requirements and risk mitigation requires advance provision for rapid delivery of prospective future projects.

Investment Safeguard and Reliability Standard

There is no specific consultation question on this topic in the issues paper, only on competitive tendering for LTESAs.

"The Department's position is to develop regulations that prescribe the reliability standard under the EII Act to be the interim reliability measure implemented by AEMO under the NER." This refers to the NER Chapter 4A *Retailer Reliability Obligation* from which the interim outcome is unserved energy 0.0006% in any Region for any year.

The Department's position is to apply this until 30 June 2025 then revert to 0.002%.

This submission has no objection to this target but draws attention to the implications for the Consumer Trustee in setting planning levels for investment in grid connected wind and solar generation as well as levels of storage.

As solar sourced generation is only available in daylight hours, achieving the reliability standard would require far more storage if a majority of renewable generation were solar than if it were wind. This is exacerbated by the huge contribution of rooftop solar which is generally fixed and tapers off outside the middle hours of the day. Accordingly the amount of storage required is reduced if added weight is given to connecting wind generation in REZ where it is available.

Battery firming can be delivered in a relatively short time but long duration PHES has a long lead time for construction. Given the legislated target of 2GW of long duration storage by 2030, it is submitted that it is very likely to prove favourable in the first decade of the LTESA scheme for the Consumer Trustee to plan to deliver a comparatively high proportion of wind farm generation.

Competitive Tendering for Long Term Energy Service Agreements (LTESA)

Question 3 seeks comment on the requirements for competitive tendering for LTESA

EII Act s47 requires a competitive tender process in accordance with regulations, and with rules made by the Consumer Trustee.

The Department proposes that regulations prescribe the competitive tender process, and that principles be enunciated for the Consumer Trustee to follow. Eight dot points are proposed for these regulations and Question 3 invites responses.

Response to Question3: The suggested regulation considerations focus on financial value and fair competition but neglect other major considerations such as deliverability provided by land agreements, established social licence arrangements, and jobs and other benefits to the community hosting the REZ. Whilst there is provision for inclusion of unspecified considerations in the proposed terms of an LTESA which could include such matters, it is submitted that they be included explicitly in order to get reasonable consideration in evaluation of the competitive offers. It is proposed that host community benefits including local jobs and other requirements of the Act be considered in tender/proposal evaluation

weightings and be allocated a substantial proportion of evaluation scores, say 20%. Extent of land rights already held should also be an important item with substantial weighting, again say 20%.

The Consumer Trustee's *Infrastructure Investment Objectives Report*

Question 4 and Question 5 address this report.

The report is to chart a development pathway to be constructed over 20 years and to plan the competitive tenders for 10 years ahead including what types of LTESAs will be tendered with particular focus on the next 2 years.

The following comments and responses are offered

On page 9 of the issues paper the Department proposes eleven matters that the report should take into account. Question 4 invites responses.

Question 4 response:

The *Infrastructure Investment Objectives Report* must incorporate an objective to mitigate the risk of blackouts in NSW precipitated by a run of short lead time closures and multiple failures of aged fossil fuel plants.

Risk mitigation can be achieved by rapid augmentation and strengthening of grid infrastructure to provide both capacity and resilience to the NSW grid connecting priority REZ to load centres.

It is submitted that risks are not adequately addressed in the eleven points and that several assessments proposed in the brief require detailed forecasts that cannot be reliably made more than two years ahead in view of the rapid changes occurring in the electricity supply industry.

The fourth dot point discusses supply demand balance but fails to take into account the long lead times for major grid augmentations and the risk of early closures of coal plants in the 2020s.

Planned retirements (dot point 4) are being brought forward in large steps of several years (recent Yallourn and Eraring announcements). AEMO has recognised the rate of change as occurring faster than the ISP's Step Change scenario. Gas plant capacity factors are reducing. Coal and gas plants are becoming increasingly uncompetitive.

Large batteries at power stations can partially mitigate technical constraints driven by the duck curve but cannot make the plants competitive. The transition is likely to continue to accelerate driven by economics.

Addressing Net Zero Emissions by 2050 (or much sooner if possible) will result in energy requirements transferring from gas and liquid fuels to renewable electricity. This is likely to occur much faster than current projections in the ISP creating risks of generation shortfall, unless grid constraints are removed and power transfer capability is markedly increased between priority REZ and NSW load centres.

The EII Act focusses on security of supply to NSW consumers. However our renewable resources and NSW ports will facilitate new and replacement export industries unless inhibited by grid constraints.

Adequate grid strengthening can greatly alleviate EST issues within the current decade if RE generation is facilitated to substantially exceed NSW domestic requirements.

It is recognised in the issues paper that a *firm* 20 year development pathway is unrealistic. Two yearly updates are required. This submission foresees each update showing marked changes due to technological innovation, mass production delivering changes in LCOE, initiatives of developers, and of government. Coal plants will advance closure dates and new major loads will emerge.

This is not a time for penny-pinching incrementalism. Bold strategic grid development plans are needed. It is the view of Walcha Energy that NSW will be in trouble if the development of its Priority REZs has not been delivered within 10 to 15 years.

The plans will have to be founded on the factors that are known and relatively constant:

- the resources available within the Regions to meet their own energy needs,
- opportunities presented by port infrastructure for development of export industry,
- human and physical resources for new energy-consuming industries.

They will need to be flexible to take account of unknowns:

- unforeseen innovation and new technology
- the initiatives of competitors
- the take up of electric vehicles and hydrogen fuels.

They must be strategic to mitigate the biggest risks.

Sensibly planned, bold grid development to connect Priority REZs will never be stranded.

Question 5 – Strategy for Long Duration Storage

Question 5 raises asks in what circumstances long duration storage should be preferred over firming infrastructure.

Question 5 response: Long duration storage is needed on the northern tablelands as well as Snowy 2.0 in the southern highlands and is of greater strategic value for the development of major NSW renewable resources, especially wind. Due to the longer lead times required to construct PHES, suitable projects should be initiated as quickly as possible. Direct investment by government should be considered for major projects that enhance network utilisation. Firming infrastructure will also be needed and will attract private investment assisted by LTESAs.

In general, the proposed requirements for the *Infrastructure Investment Objectives Report* should be more explicit in relation to the development of strategies to achieve the objectives. Long duration storage is not the only matter for strategic consideration.

A critical strategic question for CWO and for the New England REZ is the extent to which government should carry the risk of creating a robustly connected grid hub to which Generators might extend LTESA funded connections, as illustrated for CWO in Figure 4 of

the Issues paper. Once the appropriate MW of generation have connected, the ongoing cost of the hub's grid connection could be passed on to consumers as for a normal regulated development.

Another critical strategic issue is the extent of grid infrastructure to be included in the first stage of REZ development as discussed under question 4 above. In order to comply with social licence obligations, in planning for grid development to serve the southern part of the New England REZ, consideration must be given to how the ultimate grid development for the whole 8GW REZ may impact on the area to be initially developed.

Grid development planning by Walcha Energy for the New England REZ south of Armidale (the Walcha plateau with 5,000MW of prospective renewable generation) has taken ultimate development considerations into account. However social licence opportunities and cost savings are available if easement acquisitions for the ultimate development can be combined with those for the initial development.

Classification of REZ network infrastructure

The EII Act provides for REZ infrastructure to be recommended by the Infrastructure Planner and also for the Minister to direct network infrastructure projects to be carried out.

The issues paper diagram Figure 4 (p21), based on CWO REZ, distinguishes existing shared network, REZ shared network (up to a hub) and private connection assets connecting generators etc to the hub.

The Department points out that the EII Act definition of REZ network infrastructure "consist of network infrastructure of a class prescribed by the regulations." Table 1 on p22 proposes 3 classes of which one is existing network infrastructure not related to the Roadmap and the other two are regulated and unregulated network infrastructure related to the REZ.

The Department also proposes that sub-classifications be considered in the development of regulations.

Question 6 asks: 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?

Question 6 response: Walcha Energy considers that substantial long duration energy storage should be an available sub-class of network infrastructure if that storage or a significant part of the storage resource and power capability is made available to support grid infrastructure. Inclusion of this sub-class will enable the Consumer Trustee to propose explicitly the inclusion of long duration storage to support the grid in its request for advice from the infrastructure planner, and to include this in the scope of LTESA tenders.

Question 7 asks: What types of network infrastructure could be subject to economic regulation under Part 5 of the EII Act?

Question 7 response: It is not possible to foresee in regulations, written in advance, all the situations that will require decisions under s41 of the EII Act.

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