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Dr Kerry Schott
Chair
Energy Security Board
Email: info@esb.com.au

Dear Kerry,

Re: Response to P2025 Market Design Consultation Paper

Tilt Renewables (TLT) is a leading Australasian renewables developer engaged across all stages of project development through to operations. TLT currently has 366 MW of operational wind farms across the NEM and New Zealand, plus a further 469 MW in construction/commissioning and over 3 GW in its development pipeline.

TLT welcomes the opportunity to provide feedback on the Energy Security Board (ESB) September P2025 Market Design Consultation paper (the Consultation Paper). The transformation of our energy market requires careful consideration and we acknowledge the significant amount of work undertaken to date by the ESB and market bodies to develop their thinking on the initiatives proposed in the Consultation Paper. A program such as this, which will have long-term ramifications on the electricity sector and consumers, needs to allow for sufficient consultation, submissions by proponents into the program, and thorough assessment of how existing rule changes underway and reforms that have been approved but not yet implemented will play out, to ensure the program is effective and avoids any unanticipated consequences. The program also needs to consider a range of design options, whereas the Consultation Paper in some cases selects preferred options, with little rationale or detail provided to explain the design choice and how it would practically work in the NEM (including how costs would be recovered where new services/markets are proposed), making effective and efficient consultation more challenging.

The ESB should be mindful of the effort and commitment invested by TLT and stakeholders across the industry to participate in these reviews. There is a lack of clarity and appears to be limited coordination between the market bodies and the ESB (made up of the market bodies) as evidenced by the sizeable number of regulatory reviews and rule change processes currently underway in parallel. This places a significant burden on industry and creates



uncertainty for potential investors when the rules of the game are being changed, or proposed to be changed, across so many workstreams in an often-uncoordinated fashion. A current example of this is the AEMC publishing the results of its investigation into system strength frameworks in the NEM¹ only 2 business days before submissions are due on the ESB's Consultation Paper, which has a significant focus on system strength issues. Participants are often left with the sense that there is more competition between, rather than coordination amongst, the NEM's market bodies, making good policy more difficult to achieve.

TLT strongly urges the ESB when considering options and solutions to establish policy, regulatory and market frameworks that are technology neutral, transparent and address real market failures, to ensure competitive markets, provide investment certainty and allow new players to compete to efficiently deliver the services needed. Further, emissions should not be ignored in the context of the long-term energy mix and energy policy. A review of the National Energy Objective (NEO) to incorporate emissions criteria would be prudent in any program targeting long-term certainty and sustainability in the Australian energy sector.

In this context, TLT believes careful thought needs to be given to the sequencing and coordination to address the priority issues facing the NEM relating to real-time power system 'security' issues such as maintaining system Frequency, Voltage, System Strength and inertia. As it stands, pressing ahead with some other proposed market design alterations such as CoGaTI and Ahead Markets has a high risk of being counterproductive.

TLT suggests that Ageing Thermal Generation in and of itself does not require a separate market design initiative (MDI) workstream, as the practical and technical consequences of Australia's ageing thermal generation fleet are being addressed through other workstreams, and duplication creates the risk of inconsistency and poor policy. There has been significant research and analysis undertaken by Government, research institutes and participants in this area, and a number of market changes already implemented to mitigate the impacts of future thermal plant retirements. Any risks or residual risks identified should be consolidated and addressed by the other workstreams, providing a holistic approach to the transition and avoiding duplication and unnecessary burden on stakeholders.

Given the above, this submission is targeted at the areas in the Consultation Paper that TLT believes require urgent focus and attention from the ESB.

TRANSMISSION ACCESS AND THE COORDINATION OF GENERATION AND TRANSMISSION – MDI G

Whilst not the first MDI in alphabetical order, TLT wishes to highlight at the outset that it does not support the Co-ordination of Generation and Transmission Investment (CoGaTI) proposal, now presented under the guise of the Transmission Access reforms, and has significant concerns about the Australian Energy Market Commission's (AEMC) ongoing pursuit of a new market model (nodal pricing) under that process. The current proposal from the AEMC bears little resemblance to the original brief given to it by the COAG Energy

¹ <https://www.aemc.gov.au/sites/default/files/2020-10/System%20strength%20investigation%20-%20final%20report%20-%20for%20publication.pdf> -167-page Final Report



Council and threatens to hinder, rather than help, further investment in the National Electricity Market (NEM).

There exists a significant lack of clarity on the need for the COGATI reform which is being proposed, and the stated goals of the reform have evolved over time and remain unclear. The AEMC themselves no longer suggest this reform will actually help with transmission investment, and the response from generation investors has been overwhelmingly negative. In the absence of any mechanisms supporting transmission investment and with no support from generation investors, it is not clear what this proposal will actually achieve in any positive sense for the market. What is clear is that the scope of the changes proposed would cause significant market disruption, inefficiencies and costs.

Whilst there was a constructive response from stakeholders to the apparent alignment of COGATI consideration with the Post-2025 market design process, it does not alter the reality that the vast majority of stakeholders remain strongly opposed to the COGATI reform based on these key factors:

- COGATI no longer attempts to address coordination of generation and transmission investment, despite its name, and despite the key original justification for the proposals. COGATI is instead aimed at introducing nodal pricing, along with a partial hedge instrument to supposedly improve access, which itself is actually a symptom of the broader problem with coordination. Transmission investment is now being tackled in more tangible and practical manners outside the COGATI reforms, by other market, government and regulatory initiatives, such as Renewable Energy Zones (REZs) and AEMO's ISP;
- COGATI constitutes a major reform, at a scale unwarranted by the problem it purports to solve, given the risk of significant market disruption, delays, costs and unintended consequences across the NEM; and
- COGATI does not address the technical barriers (such as low system strength) to improve access for new low-cost generation. Other work is also underway to address these issues².

COGATI creates significant risks and investment uncertainty resulting in disruption to existing long-term energy contracts and added costs for market participants due to the Locational Marginal Pricing regime being proposed.

There are other initiatives underway that TLT believes will address congestion and improve locational signaling. These include:

- The ISP and actioning the ISP rule change with a particular focus on the RIT-T reforms;
- Development of REZs and associated work in relation to dedicated connection assets;
- Addressing system strength, for example as suggested in TransGrid's rule change and under consideration in the AEMC's investigation into system strength frameworks in the NEM; and

² <https://www.aemc.gov.au/market-reviews-advice/investigation-system-strength-frameworks-nem>
<https://www.aemc.gov.au/news-centre/media-releases/consultation-begins-new-ways-deliver-system-services-power-system>
https://prod-energycouncil.energy.slicedtech.com.au/sites/prod.energycouncil/files/ESB%20system%20security%20work%20plan_0.pdf



- The transparency of new projects rule change that was finalised in October 2019.

An obvious candidate for better coordination of future transmission and investment is a clear, national framework for REZs. A well designed REZ framework, which also included the necessary augmentation of the existing “shared” network, when required, would address the key issue identified by AEMC: providing a solution to the barrier of coordinating multiple, independent projects to align project timing and funding for new transmission. This would also address a key concern of existing and potential generators that transmission and other system services have historically lagged new generation investment (leading to costly constraints and system security impacts), as well as work towards a least-cost outcome for consumers by minimising often unnecessary and costly delays. Whilst much work remains to design and implement REZs in an effective manner, focusing on making these successful should take precedence over an overhaul of the entire spot and contract markets (i.e. COGATI), particularly where it will not actually address the core issues it was tasked with resolving.

TLT looks forward to engaging further with the ESB in the next stages of Market Design to support the actioning of the ISP and appropriate development of REZs.

RESOURCE ADEQUACY MECHANISMS – MDI A

TLT agrees that maintaining security and reliability as the system transitions over the next 10-15 years, while delivering lowest cost to consumers, is critical.

TLT broadly supports the ESB’s approach to explore Resource Adequacy Mechanism (RAM) options that sharpen real time prices and long-term investment signals. However, we caution the ESB to ensure that RAMs do not simply serve to entrench revenue pools for ageing thermal generators that would otherwise retire.

TLT is broadly supportive of the concept of an operating reserve mechanism attempting to sharpen the real-time market and complement the work being done to value unpriced services and to make demand more responsive to supply. While the electricity market is already structured to incentivise new generation capacity, including firm generation, and AEMO already has tools to manage more extreme scenarios when necessary, an operating reserve facilitating real-time firming capacity is likely to be more transparent and efficient and to support technology neutral solutions. In saying that, the devil is in the detail and the ESB in the next phase of developing these options further must ensure that new technology and investment is encouraged and that such a mechanism is not structured to simply subsidise existing thermal generation.

TLT considers that ongoing tinkering with the Retail Reliability Obligation (RRO) and reliability standard is inefficient and is to some extent unwarranted. Governments continue to revise the RRO, most recently to align with the tightened reliability standard, through amendments announced by the then COAG Energy Council following its March 2020



meeting³. These changes are still in progress and have not yet played out to see if there is any residual risk that needs to be addressed. Therefore, we are not convinced that there is a pressing need for a further expansion of the RRO nor for an evolution to a decentralised capacity market. A more considered approach would be to allow some experience with an unchanged RRO in the first instance.

More importantly the risk of government interventions in relation to reliability presents a major challenge to resource adequacy as it undermines investor confidence and the ability for the market to deliver new generation investment in a timely manner. It will be critical through this program to provide governments with confidence that the RAM can meet their reliability priorities to maintain consistency NEM wide. It is equally important for government to avoid picking winners and ensure technology and competitive neutrality is applied to enable competition and avoid increased market power to certain developers.

The ESB is also seeking feedback on the effectiveness of the existing investment signals and on measures proposed to strengthen them, to overcome risks that deter investment. We note that during the period of 2017 to 2020 over \$21 billion was invested in low cost renewable generation and there is currently an abundance of low-cost renewable new generation projects either committed or proposed to fill the energy supply gap left by coal plants as they retire from the market. Such projects were previously driven by the need to reduce emissions from the electricity sector through policies such as the RET, however more recently through pure economics, including the falling cost of renewable energy and the market signal that Australia's fleet of aging coal-fired generation will be retiring over the coming 20 years.

With this transition, new and significant risks related to the connection process have become apparent. Grid connection is recognised as the key business challenge across the Clean Energy Council (CEC) members and is leading to increased costs and delays to new generation. In response to large volumes of asynchronous generation connecting to the grid, the "do no harm" framework was introduced and access standards for generators have continued to be tightened, placing a greater burden regarding broader grid security on newly connecting generators. This approach leads to fragmented and highly inefficient investments from multiple proponents, where more centralised solutions may have been far more effective.

Further to this, projects are now being exposed to connection risk beyond their agreed GPS, with unforeseen and non-transparent issues needing to be resolved before completing, or even arising during, the commissioning process. While the Consultation Paper focuses on efficient price signals to encourage investment, it fails to acknowledge the heightened connection risk which is creating barriers to investment, slowing the implementation of committed generation investments and increasing the risk premium on new projects, ultimately leading to increased costs to consumer through higher energy prices. Improving the connection process for proponents would help to address resource adequacy issues by reducing barriers for new projects, and electricity prices for consumers.

³ COAG Energy Council, Meeting Communique, 20 March 2020. <http://www.coagenergycouncil.gov.au/sites/prod.energycouncil/files/publications/documents/EC%20-%20communique%20-%2020200320.pdf>



ESSENTIAL SYSTEM SERVICES – MDI C

To ensure the critical security of the NEM is maintained as the aging fleet of thermal generation assets exit the market, the essential system services that have been previously provided as a by-product of generation will need to be provided through efficient and transparent mechanisms that incentivise new technologies and value services. The ESB and Market Bodies are exploring the following options:

1. Operating reserve procured by a spot market with a demand curve framework, with possible additional mechanisms to support investability.
2. Developing arrangements to incentivise primary frequency response ahead of the mandatory primary frequency response sunset in 2023.
3. Supporting the provision of fast frequency response within the existing NEM framework.
4. Supporting ahead-scheduling and coordination of the provision of inertia and system strength, alongside structured procurement arrangements.
5. A spot market for inertia in the post-2025 NEM, with co-optimisation with frequency control and operating reserve, with a view for implementation in the medium term.

While TLT is broadly supportive of valuing these services, the most efficient mechanisms for achieving this needs to be carefully considered for each service and significant work is still required to develop the detail of the procurement processes. Further, the AEMC's consideration of the fast frequency response rule change proposal, investigation into system strength frameworks in the NEM and consideration of the six system services rule change proposals which are currently underway need to be prioritised and addressed through this program as a matter of urgency.

In particular, the AEMC recently consulted on six rule change proposals from four proponents (Hydro Tasmania, Infigen Energy, TransGrid and Delta Electricity) which all define problem statements and suggest solutions relating to issues identified by the ESB Consultation Paper. As noted in our submission to the AEMC in response to the Fast Frequency Response and Management of System Strength rule changes⁴, proposals which have not been thoroughly justified and which do not address the more relevant challenges for the system should be rejected. Two rule changes worth noting in this process which address urgent challenges and therefore should be progressed that align with the ESB ESS MDI are:

- Infigen Energy's Fast Frequency Response Market Ancillary Service rule change⁵; and
- TransGrid's Efficient Management of System Strength on the Power System rule change⁶.

⁴ Tilt AEMC FCAS submission (page 7, paragraph 1) - <https://www.aemc.gov.au/rule-changes/primary-frequency-response-incentive-arrangements>

⁵ Infigen Rule Change (page 7, dot points) - <https://www.aemc.gov.au/sites/default/files/2020-03/ERC0296%20Rule%20change%20request.pdf>

⁶ TransGrid Rule Change (page 7, dot points) - https://www.aemc.gov.au/sites/default/files/documents/erc0300_rule_change_request_pending.pdf



It is noted that the AEMC published the final report on the investigation of system strength framework Friday 16 October, 2 days before the ESB 2025 Market Design consultation closes. TLT urges the ESB and the AEMC to fully integrate these rule changes and final determinations with regards to this important issue into the overall market design program providing sequencing and priority these issues.

Fast Frequency Response (FFR) Market

Declining levels of inertia have led to the need for faster acting response times, which are not valued in the current market design. FFR services will be required to maintain power system security into the future and should be thought of as complementary to the system strength requirements of the power system. FFR does currently exist in the NEM and has been bundled as a requirement in generator performance standards and government grants. By appropriately valuing FFR through the creation of two new contingency FFR (raise and lower) services, efficient investment will result in providing the necessary FFR capability that AEMO has not been able to previously procure. AEMO should determine the specifications for the FFR service in the Market Ancillary Services Specification (MASS) and the volume of FFR, primary frequency response, regulation FCAS, contingency FCAS and inertia required to support the NEM should all be co-optimised.

System Strength & Inertia

As proposed to the AEMC in recent consultation on the Investigation into System Strength Frameworks in the NEM (EPR0076): Discussion Paper⁷, the current “do no harm” framework leads to fragmented and highly inefficient investments from multiple proponents, where more centralised solutions may have been far more effective. In addition, the original framework required Generators to undertake a Preliminary Impact Assessment (PIA) followed by a Full Impact Assessment (FIA) as necessary, however this framework has failed in that Generators are required to conduct an FIA regardless of the PIA assessment results, including for projects located in stronger parts of the network.

TLT strongly suggests ESB coordination with the AEMC on the removal of the Do No Harm framework due to its significant relevance under this review. These existing processes ultimately lead to adverse consumer outcomes, as low-cost generation capacity is delayed and/or made more expensive than it would otherwise be, were system strength requirements provided in a more efficient manner. Furthermore, the current framework for declarations of minimum strength shortfalls and the subsequent addressing of these by TNSPs involves significant time lag, does not account for ‘uncommitted’ (but highly likely) future generation connections, and is a generally reactive process which does not provide for services to be efficiently planned and delivered where and particularly when they are actually needed.

Further, TLT agrees with the ESB’s assessment of the difficulties associated with a spot market-based approach for system strength, largely due to the locational element of system strength combined with the inability to measure it. In lieu of a spot market-based approach, TLT supports a centrally coordinated model for system strength as the most pragmatic and effective way of managing this system issue. We suggest central planning of system strength

⁷ Investigation into the NEM (page 7, final paragraph) - <https://www.aemc.gov.au/market-reviews-advice/investigation-system-strength-frameworks-nem>



forecasting requirements be conducted by AEMO, however under a clear, timely and transparent process such that market participants can be confident in the approach taken and have sufficient visibility to inform their decisions. System strength requirements should also be considered alongside other relevant system requirements (e.g. inertia), so that efficient overall solutions to network needs can be identified, particularly where common investments may be able to provide multiple services.

TLT would like to highlight to the ESB that while the physical inertia that a large rotating mass provides to the power system can be quantified, the benefits that it provides with respect to power system stability, particularly transient stability, are dependent on the electrical location of said rotating mass. In this regard, a spot market approach alone, based on participation consisting of mostly incumbent generators will likely result in inefficiencies as there is no incentive to locate any new service where it is needed most. Given the cross over in capability of technologies that can provide both system strength and inertia, centrally planned procurement, as mentioned above, is best suited by catering to the locational aspect of inertia and complementing existing assets to meet the NEM's inertia requirements.

SCHEDULING AND AHEAD MARKETS - MDI D

There is merit in the development of a Unit Commitment for Security (UCS) approach to support scheduling system services and therefore providing greater visibility and transparency of the resources available in the system to support a real time economic dispatch of the system and reduce reliance on operator intervention into the market.

TLT supports the ESB's decision to not proceed further with a compulsory ahead market design as this would limit flexibility and moves away from the self-commitment nature of the NEM. A compulsory ahead market would not be a balanced approach, nor has TLT yet seen a compelling justification for a voluntary ahead market. However, there is clearly significant detail around the UCS and development of Ahead Markets that still requires development and we encourage the ESB to undertake broad and transparent consultation on these matters.

IN CONCLUSION

TLT recognizes there has been a significant amount of work in recent months to deliver the Consultation Paper. We note, however, that for those stakeholders that have not been involved in ESB's advisory panel and technical working group forums, the Consultation Paper has presented a number of new and complex initiatives, with limited detail presented in the paper itself to fully understand and critique these and a short window for consultation.

The next phase of this process will be critical as there is a significant amount of detail to be worked through in assessing the options and viability further. We therefore urge the ESB and market bodies to coordinate their consultation planning and the sequencing of the various reviews and reforms underway, to ensure that participants can give meaningful feedback on holistic proposals and options. Regular engagement with stakeholders not involved in the advisory panel and technical working group would also be beneficial to this end, as would longer periods to prepare submissions and staggered submission due dates across the range of parallel consultations.



Thank you for the opportunity to comment and please feel free to contact myself or Rhys Albanese (rhys.albanese@tiltrenewables.com, 0423 423 797) to discuss any of the issues raised in this submission.

Kind regards,

Nigel Baker
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Tilt Renewables