



Dr Kerry Schott AO
Chair, Energy Security Board
By email: info@esb.org.au

19 October 2020

Dear Dr Schott,

Response to Consultation Paper – Post 2025 Market Design

The Clean Energy Investor Group (CEIG) welcomes the opportunity to provide feedback to the Energy Security Board (ESB) on its Consultation Paper published on 7 September 2020 on the *Post 2025 Market Design* (the Post 2025 Program).

CEIG represents domestic and global renewable energy developers and investors, with around 5GW of installed renewable energy capacity across 49 power stations and a combined portfolio value of over \$9 billion. CEIG strongly advocates for an efficient transition to a clean energy system from the perspective of the stakeholders who will provide the low cost capital needed to achieve it.

CEIG IS OVERALL SUPPORTIVE OF THE ESB'S POST 2025 MARKET DESIGN

CEIG agrees that reform is needed to ensure that the regulatory framework for the National Electricity Market (NEM) is fit-for-purpose and that the necessary clean energy transition can be achieved at the lowest cost.

This is important in the context of the Australian Energy Market Operator (AEMO)'s 2020 Integrated System Plan (ISP) which found that 26-50 GW of new utility-scale wind and solar capacity is needed in the NEM by 2040 for the optimal development of the power system at lowest cost to consumers.

CEIG agrees with the ESB that considering all workstreams in the Post 2025 Program as part of one coherent body of work is the right approach. This offers the opportunity to consider all workstreams as a package to maximise long-term outcomes, minimise effort duplication and costs and ensure consistent outcomes for market participants. CEIG encourages the market bodies to continue collaborating on this critical reform. As such, CEIG is supportive of the Australian Energy Market Commission (AEMC)'s decision in late September to extend the timeframe on a package of seven rule change requests on system services so that those proposals can be considered alongside relevant Post 2025 workstreams.



CEIG believes that the design of a robust Renewable Energy Zone (REZ) framework is critical to reforming grid access in the long term and to improving siting signals for generators in the NEM. Since the ESB has already initiated a separate workstream to design a REZ Framework, CEIG suggests that the ESB could now incorporate its REZ Framework workstream into the Post 2025 Program as a long-term solution to grid access reform (rather than pursuing the current proposal for locational marginal pricing and financial transmission rights). CEIG outlines its position on grid access in more detail later in this submission.

High level assessment of proposed workstreams

Overall, CEIG is supportive of the Post 2025 Program as outlined by the ESB. CEIG supports reforms that create a robust investment environment to enable the efficient investment in new generation, storage and transmission capacity imperative to achieving the long-term consumer outcomes set out in the National Electricity Objective. To create this investment environment, it is important that the regulatory reform process is undertaken in a coordinated manner that avoids unnecessary complexity and volatility and the associated risk premiums.

CEIG supports the ESB's general proposals to introduce market-based measures wherever possible to provide effective investment or behavioural signals while ensuring that backstops are in place whenever required so that short and long-term consumer outcomes can be met.

CEIG is however concerned with the seventh workstream of the Post 2025 Program – the AEMC's proposal to introduce locational marginal pricing and financial transmission rights (the COGATI Proposal). CEIG is urging the ESB and the AEMC to defer further consideration of the COGATI Proposal and to instead focus on measures that address current problems through the ISP process, the design of a robust REZ framework and continuing consumer protections from transmission overbuild. CEIG has outlined its rationale for this recommendation and its proposed alternative solution below and through a separate submission to the AEMC.

Timelines for implementation

CEIG supports the prudent implementation approach outlined by the ESB in its Paper including:

- not implementing all Post 2025 Program measures at once;
- balancing the urgency to implement a particular measure against the costs and complexity of implementation;
- aiming to provide sufficient lead time for industry to adapt and incorporate new market design features; and
- learning from measures as they get implemented.

Introducing material changes to the NEM market design could create risks if investors were to lose confidence in the appropriateness of the proposed reform, how the reform is implemented and over what period of time. Poorly designed reform, inappropriate grandfathering or aggressive implementation timelines could all create risks and uncertainty. If executed well and accompanied with appropriate grandfathering measures when required, the ESB's proposed implementation approach could prevent those risks from eventuating.



Consulting with industry

CEIG commends the ESB for its consultation process on the Post 2025 program and for generally aiming for the 'Involve' classification on the IAP2 spectrum. CEIG believes this form of engagement will ensure that stakeholder feedback is reflected in the ESB's design decisions. The iterative process and frequent stakeholder engagement will support the development of a future NEM market design that is cognisant of stakeholder views.

CEIG has outlined below some specific feedback for each proposed workstream.

RESOURCE ADEQUACY MECHANISMS (RAMS)

CEIG largely agrees with the ESB's assessment of factors that deter investment and agrees that, to deliver the lowest cost of capital, investors need to be able to forecast revenue streams over the life of a generation asset with as much certainty as possible at the time of financial investment decision. This lowers the cost of capital by reducing the risk premium required to invest in a project.

CEIG supports the ESB's proposed approach as it generally seeks to improve market-based signals while ensuring that backstop mechanisms are in place to safeguard consumer needs.

Measures in other ESB workstreams, by recognising the value of currently unpriced products and services or by improving opportunities for consumers to participate in the market as direct providers of energy or of demand flexibility, will also go some way towards improving resource adequacy mechanisms. From a supply side perspective, some of these measures will be particularly useful to recognise the value of dispatchable energy and of the ability to quickly ramp up or down to meet demand.

As the ESB notes however, the effectiveness of its approach is partly reliant on governments letting those signals direct investment in the market and not intervening unnecessarily and unpredictably. Ensuring that backstop measures are as transparent and planned as possible and supported by industry may help to mitigate the risk of government interventions.

Finally, the design of all proposed new measures should be carefully considered and incorporate a thorough assessment of the potential costs and benefits for all market participants, including an assessment of the potential impacts on prices.

Short term price signals

CEIG supports the consideration of an operating reserve for the NEM. CEIG agrees with the ESB that this additional short term signal, by generating an additional revenue stream for offering reserves into the market, would support investment in resources that can deliver those reserves, particularly dispatchable generators. Depending on how the operating reserve products are designed, semi-scheduled generators may be able to participate if their generation forecasts are sufficiently accurate, thereby expanding the pool of available assets.



Long term price signals

CEIG supports the consideration of an expansion of the Retailer Reliability Obligation (RRO) or the implementation of a decentralised capacity market for the NEM. CEIG agrees with the ESB that encouraging longer term contracting would provide a useful investment signal as those measures would provide greater certainty around the level of revenue able to be generated over the life of an asset, at the time of financial investment decision.

The ESB rightly notes that large load exits could create price volatility by withdrawing large amounts of demand at once. The ESB could also consider introducing disclosure requirements on the NEM's largest loads around any potential sudden market exit. The intent of this measure would be similar to that of the notice of closure requirement currently imposed on thermal plants. AEMO could provide advice on what load threshold would be considered to have potential material impacts on the market and therefore what load(s) should be captured under this new measure.

AGING THERMAL GENERATION STRATEGY

Overall, CEIG supports the intent of this workstream as it seeks to provide additional certainty of investment (particularly to improve the mitigation of potential earlier-than-planned thermal plant exits) and to ensure that thermal plants can be replaced at lowest cost.

CEIG agrees with the ESB that, in addition to measures discussed in this workstream, measures in the RAMS, Essential System Services and Two-sided Markets workstreams will also be critical to provide further incentives to replace both the energy and system services that will be required as the thermal plants retire.

Having access to accurate and up-to-date information on retirement strategies is important for investors to deliver system services and generation capacity to replace thermal plants at lowest cost and with sufficient lead time. This information helps to drive the cost of capital down as it provides more certainty over the quantum and timing of future investment requirements.

Assessment of current reliability measures

The ESB outlines the current measures in place to mitigate the impacts of thermal plant sudden exits (Fig. 15). CEIG's view is that largely, the long-term measures that provide investors with a signal for investment are well-designed and take an appropriate multi-pronged approach to mitigating the impacts of sudden thermal plant exits.

Some measures particularly useful to investors include:

- the Electricity Statement of Opportunities which provides investors with regular detailed information based on rigorous planning assessments by AEMO;
- the RRO T-3 measure which provides a useful tool that supports long-term contracting; and
- the provision of Generation Information on the capacity of existing, withdrawn, committed, and proposed generation projects in the NEM by AEMO.



CEIG agrees with the ESB that sudden exits could generate unnecessary uncertainty and residual risk. Although the suite of reliability measures is generally robust, some measures could be improved to strengthen the certainty and transparency of information provided to the market:

- as noted by the ESB, the notice of closure requirement in its current design does not address issues such as lack of compliance or “mothballing”. The design of the notice could be improved by incentivising the behaviour of scheduled and semi-scheduled generators through rewards or penalties (rather than through government interventions) to provide more timely and more detailed information (for example having to disclose expected periods of inactivity longer than a specified timeframe);
- the RRO could be modified to provide further opportunities for longer-term contracting; and
- the Energy Adequacy Assessment Projection could be published more regularly (for example every six months). This could be particularly important over the next 10 to 15 years of the transition.

Overall need for an investable NEM

Beyond the specific measures identified by the ESB to mitigate the risks of sudden thermal plant exits, CEIG believes that market bodies should also more broadly ensure that the NEM remains investable. Even with a robust suite of reliability measures in place, they may not be effective (or as effective) in triggering investments if the broader NEM framework does not provide a favourable environment for clean energy investment.

Measures that add to the certainty and stability of the future NEM framework including the REZ Framework, the ISP process and the ISP Rules give confidence to investors and support higher investment.

Equally, it is important for market bodies and governments to not detract from “investability” through measures that add to uncertainty or dampen investor sentiment such as:

- the current grid connection process where current issues have significantly increased the complexity and lengthened the time required for new plants to be operational and generating at full capacity;
- the COGATI Proposal; and
- some misplaced government interventions (or signals of intention to intervene) which can counteract long-term investment signals.

ESSENTIAL SYSTEM SERVICES AND AHEAD MECHANISMS

CEIG agrees with the ESB’s assessment that the NEM market design needs to consider how system services will be provided (and valued) in light of the increasing entry of participants who can provide such services (for example large-scale energy storage) and the expected progressive exit of thermal generation over the next 20 years. CEIG also agrees that greater coordination of resources will be required in the NEM to ensure that power system security requirements can be met at lowest costs and to minimise the complexity of operating the market.



Overall, CEIG supports the Essential System Services and Ahead Mechanism workstreams as they propose to recognise the value of an increasing number of services by creating new markets and new revenue streams. These should be particularly beneficial for investment in energy storage as the proposed measures would assign value to the many services that storage can provide and should improve its business case.

CEIG supports the ESB's proposal to consider a mix of market-based and regulatory processes to procure Essential System Services. When considering regulatory options, the ESB should ensure that their design remains sufficiently flexible to allow for emerging solutions (for example new technologies or business models) to potentially provide those services at lower cost in future. CEIG looks forward to considering the ESB's detailed roadmap in its December 2020 Options Paper.

TWO-SIDED MARKETS

CEIG supports the overall intent of this workstream as it seeks to leverage the enormous potential of new technologies, new business models and new consumer behaviours. CEIG considers that the ESB's proposed options have merit and warrant further consideration.

In designing detailed options to introduce two-sided markets, CEIG urges the ESB and market bodies to retain as much flexibility as possible so that innovation (in technology but also business models) is not stymied by a market design that is too restrictive.

DISTRIBUTED ENERGY RESOURCES (DER) INTEGRATION

CEIG supports the ESB's workstream to better integrate DER and agrees that while this will unlock benefits for energy system users, incentives and safeguards need to be appropriately designed. CEIG considers that the ESB's proposed options have merit and warrant further consideration, including the option to stage the introduction of measures over time.

CEIG agrees that the technical challenges of integrating DER will be significant. As noted by the ESB, the integration of DER can be expected to deliver a market that ultimately has a vastly different architecture, with a multitude of smaller participants and energy producers, all with different needs and behaviours compared to the current largely large-scale supply side market participants. When considering what options to pursue to further integrate DER, CEIG urges the ESB and market bodies to have regard to what the 'end-state' market architecture would look like to ensure that it remains fit-for-purpose, including from a market operation perspective (for example ensuring dispatch, forecasting and settlements functions remain fit-for-purpose) and how DER will interact with the transmission and distribution networks. The consideration of nested wholesale markets at distribution-level could be appropriate in this regard.

TRANSMISSION ACCESS AND THE COORDINATION OF GENERATION AND TRANSMISSION

The seventh workstream relates to the AEMC's proposal to introduce locational marginal pricing and financial transmission rights (the COGATI Proposal).



A number of policy and regulatory measures currently underway have started to address some of the current issues around the lack of transmission investment and the associated congestion in the grid:

- improved transparency of information on the capacity of existing, withdrawn, committed, and proposed generation projects in the NEM, led by AEMO;
- improvements to the Regulatory Investment Test for Transmission process to make it more robust, efficient and timely, recently implemented by the Australian Energy Regulator;
- AEMO's ISP process;
- introduction of the ISP Rules to enable actionable projects; and
- the development of the ESB's REZ Framework.

CEIG firmly believes that the AEMC's COGATI Proposal is not required now as it does not address the current issues around lack of transmission capacity and congestion. In fact, the introduction of COGATI would jeopardise the transition to a clean energy system by increasing the cost of capital, triggering negative flow-on impacts on the level of investment in clean energy and wholesale electricity prices ultimately paid by consumers.

CEIG has commissioned modelling to quantify the impacts of an increase in the cost of capital of 150bps per annum due to the introduction of COGATI. The modelling assessed:

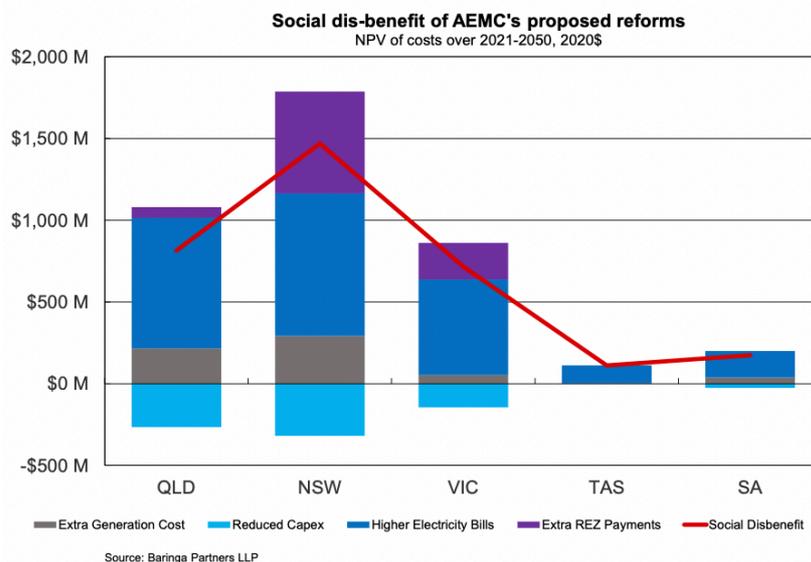
- no-Reform scenario (or 'Base Case' where COGATI is not implemented); and
- Reform scenario (or 'Higher WACC' where COGATI is implemented).

Overall, the modelling found that the increase in the cost of capital between the no-Reform and Reform scenarios leads to increased consumer costs of \$3.4 billion (in present value terms) over the 2021-2050 period across the NEM (Figure 2):

- \$2.5 billion of this (77 per cent) reflects increased electricity bills due to an average 3.5% increase in wholesale electricity prices under Reform;
- The remaining \$0.9 billion of consumer costs comes from the additional payments required to achieve State-based renewable energy targets (RETs) under Reform. This cost is ultimately borne by electricity consumers within those States. Without these payments State-based RETs would not be achieved;
- Relative to no-Reform, electricity consumers in Victoria (VIC), New South Wales (NSW) and South Australia face the biggest increases in costs under Reform. For VIC and NSW consumers, increased costs are due to:
 - higher electricity prices, and
 - payments to utility-scale renewables to offset the higher WACC imposed on renewables under Reform, so as to enable achievement of their State-based renewable energy targets.
- By 2050, spot prices in each region are around \$6-7/MWh higher under the Reform scenario – an 8% increase on spot prices compared to no-Reform.

- Installed capacity is around 3GW lower under Reform compared to no-Reform as a higher WACC impacts the economics of utility-scale battery storage.
- The level of CO₂-e emissions across the NEM in the Reform scenario are higher than in the no-Reform scenario with a cumulative increase of 18% compared to NEM-wide CO₂-e emissions under no-Reform. This equates to a \$0.5 billion increase in social costs using a social cost of carbon of \$15/tonne (These costs are additional to those noted above).
- Overall, electricity consumers in each State experience social dis-benefits from the COGATI Proposal (Figure 1).

Figure 1 – Social dis-benefits by State



Source: Baringa Partners

Further modelling results are available in Appendix A.

CEIG also finds that the AEMC has failed to appropriately account for broader economic impacts that would be associated with COGATI including impacts on the Power Purchase Agreement market (a major decarbonisation tool for governments and corporates) and REZ development policy (a key enabler for coordinated investment in generation and transmission capacity).

The COGATI Proposal does not solve current and future grid access issues and there are material risks that net benefits to consumers are minimal in the early years. CEIG is therefore urging the ESB and the AEMC to defer further consideration of the COGATI Proposal.

Instead, market bodies should focus on measures that address current problems through the ISP process, the design of a robust REZ framework - as already initiated by the ESB - and continuing consumer protections from transmission overbuild. CEIG supports applying the ESB's proposed REZ Planning Framework on a permanent rather than interim basis and believes that prioritising proven

measures already underway will deliver a more beneficial outcome than seeking to obtain a ‘pure’ market design and jeopardise the affordability and pace of the necessary clean energy transition.

Overall, a well-designed REZ framework would address contract liquidity and transmission build cost issues and would give sufficient certainty for investors when combined with the rigour of the ISP process already in place. In this context, introducing locational marginal pricing would not be required as the REZ Framework would give a sufficient signal to investors to encourage the appropriate siting of new generation capacity.

In the future, outstanding problems in the NEM design of the time could be re-assessed. The costs and benefits of the COGATI Proposal and/or other options that could address those problems could be reconsidered then if there were material net benefits.

CEIG also refers the ESB to its detailed submission to the AEMC on this important topic (Appendix A).

Assessment of upcoming problems in the NEM

CEIG finds that the ESB has generally provided a good overview of the issues that could arise during the clean energy transition.

However, beside those challenges identified by the ESB in its Consultation Paper, CEIG believes that the Post 2025 Program has not sufficiently considered two key issues that impact investors now. Those issues could dramatically reduce the level of future investment if not addressed appropriately and could dampen the expected impact of some of the proposed Post 2025 measures:

- Material grid connection issues across the NEM increase complexity and add uncertainty for investors, threatening to significantly lessen investment in generation and storage capacity. Although AEMO is actively considering those immediate issues, there could be an opportunity to consider (in parallel to the Post 2025 Program) a more wholesome review of the grid connection process.
- Fundamental concerns remain around the risks to investment in clean energy brought on by the current Forward-looking Transmission Loss Factors methodology, the volatility of marginal loss factors (MLFs) and the increasing difficulty of forecasting revenue for generators. CEIG believes the MLF reform remains a key issue to enable an efficient energy transition. In 2019, the AEMC deferred any material change to the MLF framework to the COGATI process. Despite this, the latest iteration of COGATI has ignored MLF issues by rescinding the introduction of instruments to manage loss factor risk. Although it is outside the scope of this consultation by the ESB, CEIG believes there is still a need for MLF reform to be addressed through a change in the National Electricity Rules.

When considering detailed options for future market design, market bodies should also ensure that the NEM remains a supportive environment for investments and that new measures do not detract from investability by adding to uncertainty. In that regard, CEIG welcomes the ESB’s workstream assessment criteria (Table 6), particularly the inclusion of ‘Promote signals for efficient investment



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and operations’, ‘Appropriate cost and risk allocation’ and ‘Minimise regulatory and administrative costs’.

Thank you for giving the energy industry an opportunity to provide feedback on this suite of critical policies that will ensure that the NEM market design is fit-for-purpose. CEIG looks forward to working with the ESB on future Post 2025 Market Design and REZ Framework consultation processes. Please contact us at secretariat@ceig.org.au if you would like to discuss any elements of this submission.

Yours sincerely,

A handwritten signature in black ink, appearing to read "S/Corbell".

Simon Corbell
Chairperson
Clean Energy Investor Group



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Appendix A – CEIG submission to the AEMC’s *Transmission access reform: Updated technical specifications and cost-benefit analysis* Report