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Wednesday, 17 September 2025

Associate Professor Tim Nelson
Chair
NEM Wholesale Settings Review Panel

Lodged online: <https://consult.dcceew.gov.au/nem-review-draft-report-consultation>

Dear Tim,

Draft Report of the National Electricity Market Wholesale Market Settings Review

Transgrid welcomes the opportunity to respond to the Draft Report of the National Electricity Market (**NEM**) Wholesale Market Settings Review. As explained in the attached submission, Transgrid welcomes the efforts of Energy Ministers to develop enduring and effective policies to enable the investment required to complete the transition to net zero by 2050, at the lowest possible cost to consumers.

As a transmission network operator, Transgrid does not participate in the wholesale market which is the core focus of the Review and its recommendations. However, due to the comprehensive nature of the Draft Report, there are a number of issues that relate to Transgrid's business and which could have material implications for consumers. The attached submission provides feedback on:

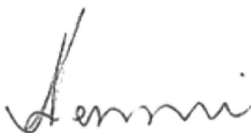
- the appropriate mechanism for recovering or returning Energy Service Entry Mechanism (**ESEM**) residual costs or surpluses to energy consumers, which Transgrid considers should be via market (rather than network) charges,
- procurement of system strength and other essential system services via secondary contracts, which could work effectively if implemented in close consultation with Transmission Network Service Providers (**TNSPs**)
- efforts, incentives and obligations for TNSPs to consider the impact of network outages on wholesale markets, which Transgrid supports and pursues in an increasingly complex power system
- proposed changes to the operation of inter-regional hedging arrangements, which is a complex issue and we support it being holistically reviewed by the Australian Energy Market Commission (**AEMC**), as has been foreshadowed

- opportunities to connect generation and storage directly to the distribution network, which we support being pursued to utilise existing network capacity (where available), and
- the potential future rationalisation of system planning functions and documents, which is a regular and worthwhile activity.

Implementing the Draft report recommendations will require careful planning and some changes may need to be phased in to mitigate any unintended consequences for consumers and market participants. Transgrid looks forward to the review's final advice to Ministers, and to working with other stakeholders to progress important reforms to ensure the NEM power system provides the energy services consumers need, as cost effectively as possible.

If you or your staff require any further information or clarification on this submission, please contact Joshua Everson, Senior Manager Regulation, Policy and Advocacy at joshua.everson@transgrid.com.au

Yours faithfully



Nadine Lennie
Chief Financial Officer

1. Introduction

The Energy and Climate Change Ministerial Council (**ECMC**) tasked the independent expert Review Panel (**the Review**) with providing recommendations on:

“market settings to promote investment in firmed, renewable generation and storage capacity in the National Electricity Market (NEM) following the conclusion of Capacity Investment Scheme (CIS) tenders in 2027” that “are in the long-term interests of energy consumers and Australia”.¹

Transgrid strongly supports this intention and commends Ministers on their efforts to create NEM market settings conducive to the investment required to support Australia’s transition to net zero by 2050.

Transgrid welcomes the Review’s detailed work, recommendations and consultative approach. We acknowledge the sensible and measured approach taken by the Review and its sensitivity to the needs of different stakeholders. Transgrid agrees with the key finding that the wholesale market requires targeted interventions, rather than a fundamental overhaul, which will maintain investment momentum. Transgrid also welcomes the intent to provide recommendations that integrate with jurisdictional initiatives, such as the NSW Government’s Electricity Infrastructure Roadmap, in which Transgrid plays an important role.

The comprehensive nature of the Review’s Draft Report and draft recommendations creates a number of touch points with Transgrid’s operations. Comments on these specific issues are provided in Section 2, below.

2. Comments on the Draft Report

This section responds to specific issues and recommendations in the Draft Report that directly impact energy consumers from Transgrid’s operations or relate to our areas of expertise.

2.1. Recovery of residual ESEM costs from (or payment of rebates to) energy consumers

Under the model outlined in the Draft Report, the ESEM administrator would agree to pay contracts at tendered prices and then seek to recycle these contracts into the market.

¹ *Review of Market Settings in the National Electricity Market to Follow the Capacity Investment Scheme: Terms of Reference*, terms 1-2. Available at: <https://www.dcceew.gov.au/sites/default/files/documents/final-terms-reference-nem-wms-review.pdf>

Movements in the value of these contracts resulting from changing market conditions will result in either a deficit to be recovered or a surplus to be distributed.

The Review proposes that any realised financial loss or gain should be recovered from, or returned to, energy consumers but does not make a recommendation about the mechanism by which this should occur. Mechanisms that could be used include NEM charges, network charges or retail bills.

While further consultation on the ESEM is required, the mechanism that is established should be transparent, least cost for consumers and avoid inefficient distortions to consumer price signals. In Transgrid's view, this mechanism should be recovered from (or distributed via) market participants so that it can be accurately accounted for within market costs relating to the wholesale supply of energy. This will ensure that the wholesale component of the consumer 'bill stack' is comprehensive and captures both the costs of supporting new investment in generation to enter the market, and the corresponding benefit of additional supplies reducing market prices.

Conversely, we consider that managing the collection or distribution of ESEM residuals within network charges passed onto retailers would distort price signals and reduce transparency about transmission (or distribution) network costs. These market-facing residuals payments also have the potential to be volatile and unpredictable, which is inconsistent with the stable and predictable cashflows required by a regulated network business.

Market participants could find ways to innovate new strategies within their portfolios or the broader market to offset associated liabilities (or maximise surpluses), which would further improve market efficiency with flow-on benefits for consumers. This would not be possible for network service providers.

2.2. Projects with ESEM contracts to provide System Strength

Transgrid has responsibility for system strength in NSW. The Draft Report identifies system strength as a key essential system service (**ESS**) in a high inverter-based resources environment.

The Panel's draft recommendation is that, where cost-effective, projects facilitated through the ESEM should also be able to provide ESSs, such as system strength. Specific secondary contracting for ESSs would occur between the ESEM administrator and the proponent. Transgrid considers that consultation with both the TNSP and AEMO will be essential prior to contracting. This will ensure the services are likely to be needed and system security locational needs are considered to confirm costs that will be ultimately borne by consumers are efficient.

Transgrid supports the intent of the proposed new contracting mechanism to bring providers into the market, particularly by incorporating system security capabilities in the project development phase, rather than as a costly retrofit. Better availability of providers would

benefit consumers by increasing the liquidity and competitiveness of the market from which TNSPs would be seeking to procure system strength and other ESSs.

The Panel is proposing that where secondary ESS contracting occurs, this contract could be novated to the TNSP if it aligns with a RIT-T outcome. For this to be efficient and effective, TNSPs would need to work closely with the ESEM administrator to ensure appropriate risk allocation and performance requirements are included in contracts to adequately meet system strength operational requirements. For example, TNSPs need to have a high degree of confidence in the financial standing of counterparties and the timing of project delivery to ensure that ESSs will be available when needed, which would need to be reflected in the terms of any novated contracts. It is also important that other sources of ESSs are not crowded out and are able to compete on a level playing field with ESEM-contracted services. This will promote innovation and competition and minimise costs of providing system security services.

Transgrid does not consider secondary contracting is likely to be required for ESEM contracts with battery projects. Battery projects are increasingly connecting with grid forming inverters to manage incentives under existing arrangements. We expect that secondary contracts for ESS would occur only for a small number of projects, for example, ensuring that clutches (or synchronous condenser mode capability) is integrated into the design of pumped hydro, gas and compressed air facilities.

2.2.1. Issues with existing system security frameworks

Under current frameworks, the future non-network services that will need to be contracted by TNSPs to meet system strength requirements are uncertain. These are mostly a function of coal retirement dates (which can change), the timing of replacement generation and new security services entering the market. The proposed ESEM framework would incentivise new generation projects with system security capabilities to connect prior to generation retirements which would help address some existing uncertainties in current frameworks and lead to lower consumer costs.

In some future scenarios, TNSP's may need to contract with a significant portion of existing synchronous generation capacity to manage system security gaps left by coal retirements. These units would be deployed out of bid merit order at times when market dispatch alone is not sufficient to maintain system security.

Transgrid considers that the current arrangements for the contracting and settlement of system security services from market generators are not efficient and are likely to deliver higher overall system costs than are necessary. Under the existing rules, TNSPs would hold contracts with generation units for system security services separate from their participation in wholesale markets, with separate pricing and payment processes.

We believe that costs would be minimised if AEMO could instead co-optimize the scheduling, dispatch and pricing/settlement of generation units for system security within wholesale electricity and ancillary services markets. This way, AEMO could make use of its up-to-date visibility of all available units (not only those contracted with TNSPs) and could dispatch the least-cost combination to meet system security and energy requirements based on competitive bids submitted for each trading interval.

It will not be possible (or efficient) for TNSPs to recreate complex NEM dynamic bidding and rebidding processes that deliver allocative and productive efficiencies in operational timeframes. Such processes are best run by AEMO, which already effectively administers such spot markets.

In addition, TNSPs are not well placed to manage large, unpredictable payments for these services (equivalent to a market settlements function), particularly if payments were linked to (volatile) wholesale market or commodity prices. TNSP cashflow exposures could become very large until full cost recovery/true ups occur. This could require TNSPs to enter into contracts with significantly higher fixed cost components. Consumers will likely face higher costs if system security services are contracted at a higher, fixed cost without due consideration of the point-in-time value (or cost) of associated generation output.

Transgrid encourages the Panel to consider whether other parties are better placed to manage potentially volatile system security contracts to ensure lowest cost outcomes for consumers can be achieved.

While Transgrid generally agrees that AEMO's directions framework should not be the primary mechanism used to ensure system security, we consider that it plays an important backstop role under existing frameworks and should be used if it achieves lower costs for consumers (than, for example, a TNSP contracting with a market generator to provide system security services).

2.3. TNSP incentives, or obligations, to consider wholesale market impact in outage planning

As part of its focus on promoting the efficient and competitive operation of the NEM's regional wholesale electricity markets, the Review identifies the need for TNSPs to seek to minimise the impact of network outages on these wholesale markets.

Transgrid is acutely aware that transmission outages can result in network constraints that impact consumer bills through increased wholesale prices. These constraints can also impact the revenue of individual generators through curtailment.

Transgrid agrees that TNSPs should have regard to customer and market impacts when planning outages. Transgrid already incorporates such considerations into its current outage planning and this will continue to evolve. For example, Transgrid is exploring the potential to undertake 'live line' work which would reduce or eliminate the need for some outages and the associated market impacts. Transgrid is also planning to deploy new tools and systems in its control rooms to maintain the operation of a more complex power system. These tools are designed to help facilitate shorter outage periods (among other things), as articulated in case study 3 of Transgrid's 'system operability' Project Assessment Draft Report.²

² Transgrid, *System Security Technology Upgrades – Project Assessment Draft Report*, 12 May 2025, pp 68-75. Available at: https://www.transgrid.com.au/media/fxtjhszq/transgrid-padr_operational-tools.pdf

However, we note that outage planning is becoming more complex and will continue to increase in complexity over the coming years as coal generators retire or change their operating patterns and as the energy system becomes more weather dependent. It is also unavoidable that the development of major new transmission infrastructure and the connection of many new renewable generators will involve transmission outages. We are already observing that planned outages are being cancelled more frequently for power system security reasons, and there are fewer periods during the year when it is predictably low impact to plan outages.

It is essential for system reliability and security that TNSPs are able to undertake maintenance and augmentation in a timely way. Transgrid is concerned that layering additional restrictions on outage planning, such as minimising impacts on energy-only spot markets, may make it effectively impossible to work on parts of our network during certain weather conditions, or during certain times of the day or night. Repeatedly deferring maintenance may increase the risk of asset failure, while delaying the commissioning of new generation and transmission assets will result in higher energy market prices for longer, as well as risk power system security.

As the Review acknowledges, the current Service Target Performance Incentive Scheme (**STPIS**) primarily targets network reliability. The Australian Energy Regulator (**AER**) has accepted that the Market Impact Component (**MIC**) exposes TNSPs to maximum penalties for events beyond their control (related to large volumes of new variable generation in the system). The AER has recently submitted a rule change proposal to the AEMC to amend the application of the current MIC.³ Transgrid supports this rule change and will continue to work with the AER, via Energy Networks Australia (**ENA**), to progress the development of appropriate arrangements to govern and incentivise TNSP outage planning and regional wholesale price impacts. Transgrid also supports the Review recommendation that such change be made through the rule change process. Using existing mechanisms, which are well understood by stakeholders and generally functional, will help maintain confidence and momentum in the reform program.

2.4. Greater role for inter-regional hedging

The Review finds that inter-regional settlement and hedging arrangements are essential in a system increasingly reliant on VRE, where sharper regional price differentials may occur. Accordingly, the Draft Report encourages the AEMC to undertake its proposed review of the inter-regional settlement residue auction (**SRA**) arrangements, to strengthen inter-regional trade, ensure fair cost distribution and maintain confidence in the NEM's market mechanisms.

Transgrid supports the AEMC undertaking a review of Inter-regional settlement residue (**IRSR**) and SRA arrangements. With the growing importance of interconnectors in the NEM,

³ The AER submitted the rule change on 14 August 2025. See: <https://www.aemc.gov.au/rule-changes/early-application-revised-transmission-service-target-performance-incentive-scheme>

it is critical that these processes work effectively to return market benefits of interconnection to consumers. We consider that the AEMC should also holistically evaluate the allocation of costs and risks related to IRSR, as well as ways to improve market contracting tenor, forward liquidity and retail competition (as raised in the Review). For example, it would be appropriate to assess whether the benefits afforded to consumers from inter-regional hedging outweigh the margins captured by market participants in SRA relative to underlying IRSR. It is essential that this review is undertaken before decisions are made to extend the lead-times of SRA, to avoid the need for retrospective changes to units sold, and so that market participants can have confidence in new processes and their stability.

Transgrid also recommends that if SRAs are to be conducted further in advance, as proposed in the Draft Report, that auction schedules should ensure that some proportion of units continue to be available at shorter tenors. This will promote competition from new entrants and ensure they can access hedging instruments in a timely way, which may not be possible if incumbent market participants secure significant volumes of settlement residue units many years in advance.

2.5. Connecting more suppliers to the distribution network

As the Draft Report notes, analysis published by ENA has found that generation and storage facilities connected directly to a distribution network may be able to provide cheaper electricity than a new renewable energy zone (**REZ**) connected to the transmission network. It also notes that proponents report difficulty and high costs to connect to a distribution network service provider (**DNSP**), compared to a TNSP.⁴

Transgrid supports opportunities to connect utility-scale renewable generation and storage projects within distribution networks. These solutions can supplement transmission-connected resources and should be pursued when they can achieve best outcomes for consumers; for example, as Distribution REZs (**DREZs**). Transgrid is undertaking joint planning with AEMO, EnergyCo and NSW DNSPs on early-stage concepts for DREZs, including options for Hunter Central Coast, Dubbo, Marulan and Yass. We are also working with these parties to identify transmission upgrades that are required to address upstream constraints between DREZs and other parts of the NEM.

2.6. Future rationalisation of planning functions and documents

Once the ESEM is operational, the Review recommends consideration be given to whether multiple or duplicative planning pathways create uncertainty for investors regarding the future 'direction' of the NEM's transition.

⁴ NEM Review Draft Report, 199.

Transgrid supported planning document reform under the NSW Transmission Planning Review Interim report consultation.⁵ We would support further planning document reform across the NEM but need to consider how this would work alongside ESEM operation.

Transgrid also notes that there will continue to be a role for the Integrated System Plan (**ISP**) particularly in relation to national transmission planning coordination. The ISP should have regard to the ESEM and jurisdictional policies/frameworks to ensure consistency and maintain investor confidence.

⁵ Transgrid Submission to NSW Transmission Planning Review Interim Report, 24 July 2025, available at: https://www.transgrid.com.au/media/u5glffe0/transgrid-submission_nswtransmissionplanningreview_interimreport_fin1.pdf