14 February 2025

Dr Tim Nelson

Chair

NEM Review expert panel

Dear Tim,

NEM Wholesale Market Settings Review: Initial Consultation

Energy Networks Australia (ENA) welcomes the opportunity to make this submission in response to the NEM Wholesale Market Settings Review (NEM Review) initial consultation.

ENA represents Australia's electricity transmission and distribution and gas distribution networks. Our members provide more than 16 million electricity and gas connections to almost every home and business across Australia.

ENA welcomes the NEM Review and its scope, which comes at a critical juncture in the transition to a low emissions energy system. We note that with significant policy reform currently underway or soon to be initiated across government and energy market bodies the NEM Review should take care to provide guidance that clarifies direction without hindering the rapid progress needed across critical areas of reform.

Our submission, in short:

- notes the importance of technology neutrality in market frameworks to support the transition of the generation fleet to progressively reduce its emissions intensity over time
- welcomes the NEM Review's focus on supporting customers to engage in the wholesale electricity and related markets and notes that, in doing so, we must also recognise the value of engaging customers and their energy resources to help improve physical network utilisation and the efficient delivery of networks services, as well as the critical importance of ensuring system security and grid reliability
- calls for frameworks to evolve to better support distribution networks to play a more significant role in the delivery of efficient energy services to customers while progressing the transition to lower emissions energy sources, including through connecting up more local solar, facilitating distribution renewable energy hubs, soaking up solar with batteries, and facilitating the uptake of electric vehicles
- notes that significant progress has been made developing enduring and robust approaches to deliver essential system services to the power system and it is important that these frameworks continue to evolve under current governance arrangements as the markets for the supply of these services matures

Further detail on each of these matters is set out below.

Evolving market frameworks shouldn't lock in or out technologies that support the transition

We understand the principal driver of the NEM review is to ensure resource adequacy for a secure and reliable power system through the transition to a net zero emissions economy. This will include considering how the market frameworks facilitate investment (by returning capital to investors and creditors throughout the asset lifecycle) in both:

- generation and storage infrastructure with high upfront capital costs and low short run operational costs, such as solar, wind and battery and hydro storage projects, and
- generation infrastructure with material upfront capital costs and significant but variable short run operational costs, such as new gas or renewable gas or liquid fuel generation projects.

It is critical that the market frameworks continue to evolve in a technology neutral fashion, with all technologies, at all voltage levels, having equal opportunity to meet the overall objective of reducing energy system emissions over time. Without technology neutrality, customers will pay more than they need to for a low emissions energy system. Gas generation is currently projected to play a critical role in the future energy system to provide reliable energy supply when renewables and storage are not available. Market frameworks should be capable of delivering this new capacity and associated infrastructure if it strikes the right balance of reliability, cost and emissions reductions, for customers.

We support recent reforms to better integrate gas infrastructure into AEMO's integrated system plan (ISP) and suggest that the NEM Review should consider whether more work is needed to ensure that these planning timeframe reforms are backed up by frameworks that ensure resource adequacy in operational timeframes across both gas and electricity infrastructure.

As the NEM Review panel progresses its views on the appropriate market frameworks to deliver reliable electricity through the transition, our members would welcome discussions on any implications for the planning and operation of electricity and gas network infrastructure.

Activating customers' flexible demand is critical for the energy transition

The Energy and Climate Change Ministerial Council (ECMC) is currently progressing the National Consumer Energy Resources Roadmap (CER Roadmap). The CER Roadmap sets out the consumer, technology, markets and power system operations activities that are required to progress the effective integration of CER into our energy systems. We urge the NEM Review panel to carefully consider its scope and approach in light of the many actions already underway to implement the CER Roadmap.

We support the NEM Review's efforts to promote consumers' ability to provide valuable services to support the supply/demand balance on the power system. This should focus on connecting consumers with the financial rewards available in the wholesale electricity and related frequency control markets. Evolved market settings should provide energy retailers and aggregators with strong incentives to engage customers and offer them competitive and compelling service offerings that support customers' participation for a fair share of the rewards. Direct customer incentives and models for more direct customer engagement can also provide significant value and complement wholesale market settings.

Adjacent to customers' participation in markets that relate to the supply/demand balance on the power system, distribution network service providers (DNSPs) are already working towards the orchestration of CER to help improve physical network utilisation and the efficient delivery of networks services. This includes through:

- evolving network pricing to incentivise consumption at times of low network utilisation (increasingly experienced in the middle of the day due to increasing solar PV penetration) and dissuade consumption at times of network stress
- shifting network controlled load to times of low network utilisation (which are also generally coincident with times of lower priced energy in the wholesale electricity market, due to the proliferation of solar PV), such as hot water or air conditioner load that is under the control of distribution network businesses

- implementing dynamic operating envelopes and more flexible connection arrangements with large and small customers to manage networks within their technical operating envelopes while maximising the benefits to all customers that rooftop solar PV generation provides by reducing electricity wholesale market prices, and

- testing flexibility markets to efficiently procure additional demand flexibility, from CER as well as commercial and industrial customers, to provide additional incentives for demand response that avoids the need for increased future capital expenditure.

Australian distribution networks are geographically as well as demographically diverse. They also have different tools available to them to manage their networks, due to local energy market structure factors – for example some regions have higher gas hot water usage and therefore have less demand available to shift through controlled load. Accordingly, the efficient mix of tools to operate one network area will likely not be appropriate to efficiently operate a very different network area.

Distribution networks engage with their customers on an ongoing basis and particularly throughout the revenue reset process. This engagement includes collaboration on the asset and operational strategies of the network and how they see them evolving over time to provide efficient network services that customers value. As such, the evolving mix of tools to activate customer demand flexibility as part of ongoing efficient network operation throughout the energy transition is best delivered, regardless of the network and its specific circumstances, through strong incentives for operational efficiency and collaborative engagement between networks and their customers.

The time is now for distribution networks to play a greater role in the transition

DNSPs can play a larger role in the transition to a net zero emissions economy than is currently recognised in energy system planning and operations. AEMO's integrated system plan (ISP) is the best plan we have for an optimal development of transmission and generation infrastructure to meet government policy directives in a way that is largely robust to the variety of possible outcomes on the distribution system. However, more can be done to plan for and bring about a more active role for DNSPs to reduce emissions and save costs for energy customers.

ENA's "The Time is Now" report conducted 'whole of system' modelling that assessed a range of actions that could be taken within the distribution system and considered which are the most impactful across both emissions and customer cost outcomes.[1] The report finds there are tangible actions that can be taken today that would significantly benefit customers across whole of system and emissions costs, including:

- Allowing DNSPs to establish and operate local energy hubs, including connecting more renewables within the distribution network, for all the community to benefit from. This could be achieved by providing clearer guidance on the regulatory path for a more integrated program of work

- Better utilising the extra capacity of batteries connected directly to the local grid and get more of them connected, making sure all customers benefit. This could be achieved through more extensive class waivers in the near term, and through more appropriately valuing the network services that batteries can provide by updating the customer export curtailment value for batteries

- Providing incentives for commercial operators to install more solar panels on existing rooftops and share it with the local community. This could be achieved through programs incentivise larger scale rooftop solar to facilitate investment above self-consumption and to expand

[1] See www.energynetworks.com.au/assets/uploads/The-Time-is-Now-Report-ENA-LEK-August-2024.pdf.

existing programs to provide low-cost, CER financing options for renters and customers with poor access to capital

- Classifying kerbside EV chargers as a distribution service to allow networks to put more chargers in more places and improve equitable access to charging while reducing range anxiety, and
- Syncing resources to the grid in a coordinated and flexible way so that the benefits can be shared with the community, including through progressing the CER Roadmap actions at speed, including those relating to technical standards, role definitions and market and customer interactions.

Progressing reforms across these areas will improve outcomes for customers. A significant contributor to the greater role that distribution networks can play in supporting electricity wholesale market reliability is through competitive generator and storage connections. In principle, there should be no unreasonable impediment to generation or storage connecting at the distribution voltage level.

One area of reform that could help facilitate a greater use of distribution networks is to better consider distribution within the ISP. Recent reforms require AEMO to improve its consideration of the distribution system. We consider that reforms should continue to progress in this direction. The NEM Review panel could consider the merit of the ISP:

- developing a view of the optimal demand and supply side mix within the distribution system, or
- better factoring in major developments or plans within the distribution system as they emerge.

Independent modelling through the ISP could help provide governments with more transparent information on the value of policy levers that operate within the distribution system, such as CER incentives or the ability to bid aggregated CER into any future capacity mechanisms. A further transparency measure for the ISP could be to require that it include an optimal development path without supply side policy constraints (such as generation and storage targets) but including emissions constraints to meet 2050 and interim targets.

We are mindful, however, that the ISP is already a significant modelling task. Accordingly, any consideration of extending the role of the ISP should seek to balance the value of improved insights into the greater role that the distribution network can play in furthering consumer outcomes throughout the transition, against its role in providing timely and iterative information on the optimal investment path for the overall power system transition.

Essential system services frameworks are critical to a successful transition and should continue to evolve

Significant progress has been made developing enduring and robust frameworks to deliver essential system services to the power system. The backbone of the system security services framework is comprised of the minimum inertia and the system strength arrangements. In each case, the system need for the service is determined by AEMO, the jurisdictional planning body (usually the transmission network service provider, or 'TNSP') is tasked with planning for and procuring the service, and the local TNSP is responsible for recovering the costs of the service.

These arrangements have been broadly appropriate for the current stage of the transition and allocate responsibilities where they are best suited. For example, AEMO is best suited to forecast overall system needs as the power system transitions, and jurisdictional planners are best placed to plan their networks and non-network contracts to efficiently meet those needs.

One matter that could improve the efficiency of these actions is to ensure that the regulatory investment framework (the RIT-T) is fit for purpose and delivers the right mix of equipment for the power system. This includes the right mix of network synchronous machines and market provided or

‘non-network’ solutions, including retiring coal units or future gas turbines that could also operate as synchronous condensers. The RIT-T should determine the best mix of network and non-network approaches to meet the system need based on a pragmatic view of the expected ‘price’ of non-network services, not just an economic assessment of the marginal cost of providing those services, as is currently the case. If the RIT-T does not factor in the realistic price of procuring essential services, there is a risk of a wealth transfer from customers to non-network service providers, particularly as market concentration will feature as synchronous generation diminishes. Further reform to the RIT-T, such as raising the RIT-T threshold, could also help focus effort on major projects and speed up the delivery of infrastructure to support the connection of new generation to the system.

Cost allocation in essential system services arrangements could also be improved. The cost recovery arrangements for essential system services and other arrangements on the power system are increasingly applying market facing costs to TNSPs which are borne as cash-flow risks. For example, the costs that a TNSP faces of procuring non-network services to provide system strength include both the relatively stable/predictable availability component and the highly volatile and unpredictable enablement component that is based on the cost of the making the relevant service provider ‘whole’ in the electricity wholesale market while they are providing the service. The transmission revenue recovery process is not suited to the recovery of unpredictable and volatile costs, and these cash flow impacts can have flow on effects on financing costs and expenditure programs.

Adding to cash-flow concerns is the AEMC’s recent draft determination on transmission loop flows, where following the connection of Project EnergyConnect there is a potential for significant and uncertain negative settlements residue to be borne by TNSPs, impacting cash-flow until they can ‘true up’ the final cost in subsequent years. In the first instance, negative residues should be netted off against positive residues in the same loop as this is the natural consequence of a loop flow. Ultimately, negative settlements residue should be borne by market participants rather than TNSPs.

While the current frameworks for essential system services are largely fit for purpose now (albeit still being implemented), they will need to continue to evolve over time to meet the changing needs of the system. With the mix of responsibilities between the AEMC, AEMO and the AER, the current governance arrangements appear to be appropriate to manage the continued evolution of these frameworks.

As the essential system services frameworks evolve, we consider the following principles should inform the market bodies:

- AEMO is responsible for operating the power system so that it remains in a secure operating state. The power system includes transmission and critical distribution system components, together with associated market dispatched generation, storage and loads. It is best placed to understand future power system security needs.
- TNSPs are responsible for the operation of their networks and the provision of transmission network services that support power system security. Network services relate to providing a network of sufficient capacity that is capable of being operated in a secure operating state as well as operating that network within its technical limits.
- TNSPs are best placed to procure and provide power system security capability in planning timeframes where there are transmission network options to provide that capability, in addition to non-network options. Services should be able to be the most efficient mix of network and non-network solutions, regardless of the voltage level in which the service is provided. TNSPs should receive a reasonable commercial rate of return for the procurement of non-network solutions to ensure there is no disincentive to use non-network solutions where they are the most efficient outcome for customers.
- AEMO is best placed to dispatch power system security resources in operational timeframes to meet fluctuating power system requirements, especially where dispatch of power system security resources is a partial or full substitute for dispatch of resources in related markets

(i.e. energy or FCAS). AEMO is also better placed to procure market facing services on operational timeframes, where these options are available either through minimum technical service obligations, contractual means or real time markets.

- Cost recovery for power system security services should align with where the benefits of the services accrue – both in time and location. Where network customers receive benefits (largely) uniformly over time then cost recovery through transmission charges may be more appropriate. Where market participants receive benefits from specific AEMO decisions then cost recovery through market settlements may be more appropriate.
- DNSPs will progressively operate their networks more dynamically, as they manage an increasingly complex distribution system. This will interact with the responsibilities of AEMO and TNSPs relating the essential system services, including the potential to provide system services. These matters are currently being explored through reform priority M.3 of the CER Roadmap.
- The risks associated with procuring and delivering power system security services should sit with the party best able to manage them.

ENA looks forward to working with the NEM Review panel as it progresses its work. In the meantime, if you would like to discuss this submission, please contact me (Dominic Adams, General Manager – Networks: dadams@energynetworks.com.au) in the first instance.

Yours sincerely

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