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Mr James Barton
Project Director
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By email: james.barton@aemo.com.au

Dear Mr Barton,

Re: Consultation on National Transmission Network Development Plan

The National Generators Forum (NGF) appreciates this opportunity to provide a submission to AEMO's NTNDP consultation. The NGF strongly supports development of a more strategic approach to transmission planning within the National Electricity Market (NEM) and we emphasise the importance of adequate consultation with market participants to inform the content of the new National Transmission Network Development Plan (NTNDP).

NGF members will make detailed submissions on the various issues raised in the consultation paper; with this in mind we make the following brief high level comments.

Scope and purpose

The key weaknesses of the existing transmission investment arrangements are that they are reactive and incremental; and focused on regional reliability requirements rather than the future needs of the market. This may have been appropriate in the past given the significant surplus of baseload generation capacity in the early years of the NEM and where subsequent new entry was focused in areas already well serviced by transmission.

However, the changing market dynamics and most significantly the introduction of climate change policies is leading to a fundamental transformation in the form of technology, and shift in the location, of new generation entrants; as well as the speed at which they can, and indeed already are, entering the market. For example, gas fired and wind power generation technologies can be built far more quickly than coal fired generation and, more importantly, more quickly than the transmission capacity required to support them.

These new generation technologies make up only a small proportion of overall generation capacity but, given the requirements of the Government's Renewable Energy Targets and the likely introduction of a carbon price, this proportion will increase substantially in the coming years.

A likely implication of the new and evolving market environment is that the quantum of congestion will increase, and projects will be delayed, if network planning and investment arrangements fail to adapt. This will increase the overall cost of meeting climate change policies, undermine the viability of existing business operations and reduce the willingness of private investors to enter the generation sector.

For these reasons, introducing a more forward looking and strategic element to network planning through the NTNDP can fill an important gap in the current arrangements. By assimilating large amounts of information in a nationally coordinated and forward looking manner, supported through consultation with market participants and TNSPs, the NTNDP will provide guidance to those who ultimately undertake the investment in both transmission and generation, ensuring investment occurs in a more efficient and timely manner.

However, the development of the NTNDP should not represent or support a move toward centralised planning approaches, which is something the NGF as a matter of principle cannot support and does not believe would provide efficient outcomes. The NTNDP should be considered a conduit for collaboration and information sharing between AEMO, TNSPs and participants, providing a more rigorous and inclusive way of testing where and when transmission investment should take place to support the evolution of the market.

The NGF notes that the MCE/AEMC are about to embark on a review that aims to assess in a holistic manner the role of transmission in a competitive NEM. The NGF believes that the development of the NTNDP must appropriately evolve over time and be sufficiently flexible to accommodate recommendations that may result from this important review.

With this broad context in mind we are relatively comfortable with the scope and purpose outlined by AEMO in its consultation document.

Scaled Efficient Network Extensions

The NGF supports AEMO's intention to include potential Scaled Efficient Network Extensions (SENEs) in the first NTNDP, ahead of when the Rules would specifically require it to do so.

This recognises two important issues. First, in order to continue to support climate change policy objectives generation investment decisions will need to continue to be made within existing timeframes. Consequently, clarity on the transmission investment options available to investors sooner rather than later is critical, particularly given the long lead times of transmission investments. Second, many of the renewable resources which are considered necessary to achieve the renewable energy and emissions reduction targets are located remotely from the existing network. For these reasons it is important that SENEs are incorporated into the transmission planning framework as soon as possible.

The strength of the SENE process, if used effectively, is that it can lead to faster transmission investment compared to that which is likely to take place under the market benefits limb of the regulatory investment test (RIT-T). It is potentially also a more market driven approach, since it requires investors to financially underpin transmission investment, which can be expected to lead to more efficient locational decisions while at the same time enabling consumers to realise economies of scale at least cost.

The NGF is supportive of the matters the AEMC has listed to take into account in determining the SENE zones; however it is important and consistent with the NGF's general support for decentralised decisions making that information collected from participants during the consultation process should drive the identification of such zones, and that no zones should be excluded prematurely. We are pleased that the AEMO has also recognised this important point.

Nevertheless, we do recognise that a filtering process for determining which SENE zones should ultimately be selected for inclusion in each NTNDP from year to year is important to ensure that the SENE's individual TNSPs develop remain manageable. As AEMO notes, this will require a preliminary high level cost-benefit analysis of the various SENE zones identified in the consultation process.

Consideration of what SENE zones to include in the NTNDP must adequately take into account the range of possible scenarios in which any SENE zone would operate, particularly with regard to alternative technological pathways. This is important because, as the AEMO notes, development of one SENE will adversely affect economics of another (different SENE's will tend to be competing options rather than complements).

In the example outlined in the consultation document, this would suggest that AEMO would need to include, even in the first NTNDP, those SENE zones that could accommodate both geothermal and wind generation options, rather choosing a SENE zone that supports either one or the other. The relevant TNSPs would then be required to cost up credible SENE options for both and leave it to participants to come forward and choose which SENE option makes the most sense from a commercial perspective, given their views of the evolving policy and market environment (that is, as far possible it should be the market that chooses rather than AEMO or the TNSP).

The NGF considers such a high-level approach is necessary given the purpose of the NTNDP and the absence of a finalised set of rules for their use in the market and the likelihood that developments in the drafting of the SENE rules may have wider implications on the overall development of transmission and transmission policy.

Proposed modelling approaches

AEMO outlines a number of alternative modelling approaches for developing the NTNDP. The approaches differ in terms of the mix of least cost optimisation and market simulation modelling that is undertaken. Option 1 is primarily focused on detailed simulation modelling of the medium term (1-7 years) under 10 scenarios, with relatively less emphasis on least cost optimisation modelling, which is only used for the period between 8 and 20 years.

Alternatively, Options 2 and 3 provide stronger focus on least cost optimisation for the full 20 year period, with the detailed market simulation used only for specific projects and using only a limited range of scenarios.

Ostensibly, the key difference between the options is that Option 1 provides a broader more holistic analysis of medium term network development, informed by a wide range of market related information. Options 2 and 3, on the other hand, provide a deeper analysis of specific transmission network options and their market benefits, with less emphasis on the multiple factors and complex network interactions that might impact on network development more generally.

One key benefit of Option 1 is that it is likely to provide a level of analysis of network and market interactions over and above what TNSPs currently undertake (providing more useful congestion related information for instance), while Options 1 and 2 seek more to replicate existing analytical approaches by TNSPs, but applied over a longer time horizon.

In choosing between these options, however, it is important to note that the intended purpose of the NTNDP, as articulated by the AEMC in its final Transmission Planner Report, is not to replicate the detailed RIT-T type analysis of TNSPs applied to specific projects. Rather it is to provide guidance on where and when the RIT-T should be applied given forecasts of the most efficient evolution of the network under a range of potential market scenarios and evolving congestion patterns. This appears to lend itself more to the analytical approach inherent in Option 1.

By limiting the focus of the NTNDP to overall network development rather than assessing individual transmission options, this reinforces and builds on the work of TNSPs rather than duplicates it (which could raise a raft of methodological and interpretative issues leading to dispute). This is a subtle but important distinction in evaluating which approach is more suitable, and we therefore believe that Option 1 will add more value to the overall planning and investment process.

While the NGF certainly considers that there is an important role for the National Transmission Planner (NTP) in imposing some third party discipline in RIT-T assessments, under the current framework this is best done through the actual RIT-T assessment process, in which the NTP has been allocated a formal role, rather than through the NTNDP itself.

Importantly, where the NTNDP and/or NTP could add some important additional value in relation to the assessment of individual projects is to provide example case studies, focusing on projects of likely interest to the market, and illustrate of how the various market benefits could be calculated for these projects. In particular, such analysis could focus on some of the more difficult or contentious market benefits such as option value and competition benefits. This would serve a useful role in providing guidance to TNSPs and facilitate standardisation of approaches across the NEM.

In this regard we disagree that the NTNDP should remain silent on issues such as Option value and Competition benefits, rather these should be tackled by AEMO in the same way as the market benefits; that is, provide broad indications of where such benefits may be applicable and worthy of further investigation.

Sufficient clarity how the SENE and market benefits limb of the RIT-T can and should be applied will be critical in encouraging their use by TNSPs and market participants and consequently determine their success in driving actual transmission investment outcomes consistent with the NTNDP.

Assumptions underpinning scenarios

- In reviewing the assumptions the NGF has also identified a number of issues of detail which it would like to bring to the attention of AEMO:
- One of the critical underpinnings to NTNDP is the demand forecasts. Given the level of uncertainty and inherent subjectivity surrounding such forecasts, it is important that the demand forecasting group includes a range of independent external experts, not just those from AEMO or the jurisdictional planning bodies. In particular, the NGF considers the approach of using a historical single year demand trace, which is then scaled up for the next 20 years, needs further debate.
- While this is hinted at in the consultation paper, the NGF wishes to reinforce the importance of evolving gas and electricity market interactions going forward. In this regard, gas pipeline and electrify transmission infrastructure may be substitutes, and potential trade-offs between the two should be considered in the NTNDP, given the fundamental importance of gas as a transitional fuel under climate change policies.
- Underpinning the NTNDP are assumptions regarding the timing, sizing and location of new generation. Generation investment and retirement plans developed by AEMO may have little resemblance to actual patterns. It is important that AEMO tests its forecasts against actual patterns over time, to ensure they remain consistent. Further we consider AEMO could release more detailed information on the core modelling assumptions it uses in the scenarios (for instance carbon price projections, assumptions regarding demand side management/elasticity and energy efficiency).
- The NGF notes the intention of AEMO to exclude transmission outages from its analysis. However, we suggest that transmission failures that have historically occurred more frequently at times of high demand (i.e., Dederang to South Morang and Basslink under extreme temperature conditions) should be included in the analysis and its impact on USE noted.

Next steps

Please do not hesitate to call Con van Kemenade on 02 8345 5278 in the first instance if you wish to discuss any aspect of this submission.

Yours sincerely



Malcolm Roberts
Executive Director