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Australian Energy Market Commission
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National Electricity Amendment (Scale Efficient Network Extensions) Rule 2010

The Energy Supply Association of Australia (esaa) welcomes the opportunity to make a submission to the Australian Energy Market Commission's (AEMC) Consultation Paper for the Scale Efficient Network Extensions (SENEs) Rule change proposal.

esaa is the peak industry body for the stationary energy sector in Australia and represents the policy positions of the Chief Executives of over 40 electricity and downstream natural gas businesses. These businesses own and operate some \$120 billion in assets, employ over 52,000 people and contribute \$16 billion dollars directly to the nation's Gross Domestic Product.

Background

The AEMC's Review of Energy Market Frameworks in light of Climate Change Policies found that existing network connection frameworks are unlikely to support efficiently-sized network connections that accommodate anticipated future generation from remote areas. It considered that with the Renewable Energy Target (RET) and carbon pricing expected to drive significant investment in remote and renewable generation, lack of coordination may result in connection delays, inefficient duplication of connection assets and large cost impacts for consumers.

The AEMC's recommendation was for a new SENEs framework for the planning, pricing and funding of network investment to remote areas. Under the SENE framework, network service providers (NSPs) would develop standard contract offers for generators based on a 'right-sized' connection asset for forecast generation in remote regions designated by the Australian Energy Market Operator (AEMO). Generators connecting to the new asset would pay for their share under the standard contract, with consumers bearing the risk of undersubscription by generators.

esaa's submission to the Second Interim Report of the AEMC's climate change review agreed that efficiently-sized network connection assets could benefit the electricity market and that disincentives for first-mover generators and NSPs may

mean markets deliver suboptimal network extensions taking account of the full extent of future generation from a remote area.

While acknowledging the potential of SENEs (then Network Extensions for Remote Generation), esaa's submission also expressed concerns that the material challenges to the successful practical implementation of SENEs could prevent their prospective benefits being realised. esaa gave cautious support to the further development of the SENE proposal at that time and urged the AEMC to consider ways to address the significant challenges to practical implementation.

The Ministerial Council on Energy (MCE) has now brought the SENE concept, with a small number of additions, to the AEMC as a Rule change proposal. In light of the considerable task facing the network sector due to climate change policies, consideration by the AEMC of options to improve network extension arrangements at this time is welcome.

The Association commends the AEMC's Consultation Paper for clearly outlining the potential benefits of SENEs and identifying a number of barriers to their implementation. esaa's comments below firstly relate to the broader policy context in the National Electricity Market (NEM) and then address issues more specific to the SENE Rule change proposal.

SENEs and the wider policy landscape

The MCE's broader network work program

A prominent theme in the AEMC's climate change review was ensuring that market frameworks encouraged efficient provision and utilisation of the network. The AEMC focussed on locational signals, and in particular a Generator Transmission Use of System charge, which it argued would provide signals for new and existing generation to take account of the network impacts of investment/retirement decisions. The AEMC's final recommendation was that existing frameworks were not robust and that it should undertake a Development and Implementation Plan to address issues around optimal decision making by generators.

The MCE's response to the climate change review declined to commission the AEMC's proposed Development and Implementation Plan, citing the significance of this issue and its bearing on questions of investment in generation. Instead, the MCE was of the view that this work is most appropriately undertaken as part of the MCE's wider work program and should therefore be initiated by the MCE rather than the AEMC.

On 13 May 2020 the AEMC released its terms of reference from the MCE for a Transmission Frameworks Review and signalled that the process for public consultation would commence in due course. While the Association has not yet had the opportunity to analyse in detail the implications of this new review for the SENEs Rule change proposal, there appears to be considerable overlap between the issues addressed in the terms of reference for the Transmission Frameworks Review and SENEs.

Network extension frameworks should not be considered in isolation from wider network policy. esaa therefore encourages the AEMC in considering the SENE Rule change to be mindful of this broader policy development process and consider whether it is appropriate to defer progress of the SENE Rule change until changes to broader network policy are clarified. The Association will consider this issue and provide its views to the Commission in due course.

Existing network regulatory frameworks

With the RET and any future carbon pricing expected to drive significant new investment in remote areas, the challenge for policy makers is to ensure the right energy market frameworks are in place to promote efficient decentralised decision making by individual market participants and encourage connection of remote generation as efficiently as possible.

As ongoing debate and a sequence of past policy reviews have shown, there are a range of views among market participants, policy makers and regulators about the most effective network policy frameworks. Network policy can raise seemingly intractable questions about whether some parties should be able to secure rights to services to the exclusion of other parties, and if so, what the implications are for the competitive market and open access regimes.

Since the commencement of the NEM, the regulatory arrangements for identifying and building networks assets have undergone a number of iterations, including three versions of the regulatory test and, from August 2010, the Regulatory Investment Test for Transmission (RIT-T). Distribution augmentations are still assessed under the regulatory test, although the MCE is currently considering a proposal by the AEMC to establish a Regulatory Investment Test for Distribution.

Implementing the SENE proposal would introduce an additional policy framework to co-exist with the present transmission and distribution regimes. While the particular issues associated with remote generation may ultimately warrant this, it is important to understand beforehand the interactions between existing regimes and the SENE framework in terms of added complexity for regulators and businesses and any possible impacts on market participant decision making.

esaa strongly supports the AEMC's intention to compare likely outcomes under SENEs with the existing RIT-T and the regulatory test to examine if the current regulatory regime is sufficiently flexible and likely to produce superior outcomes for the market than the creation of new regulatory architecture.

The Renewable Energy Target

In the current policy framework, future SENE activity is most likely to be driven by renewable energy support programs, such as the federal government's RET. In response to a range of concerns, the federal Government has recently begun consulting on changes to the RET, most importantly, splitting small scale generating units from the newly christened Large-scale Renewable Energy Target (LRET). While esaa supports the proposal to establish the LRET, it notes that development of renewable energy policy has been tortuous and that investor confidence in the sector has been affected.

While the RET sits outside the National Electricity Rules and hence is beyond the AEMC's direct area of responsibility, the Association nonetheless takes this opportunity to note that the parameters of the RET will be embedded into the design and cost of any SENE through the underpinning forecasts. Should the SENE framework proceed, it will further affirm the importance of stability in renewable energy policy.

Given the long time frames and large upfront investments involved, any future changes to the LRET could impair the economics of a SENE and may lead to stranded assets and consequent costs for industry and consumers. It is imperative that governments resist the temptation to make wholesale changes to the RET, particularly to deliver additional social or environmental policy objectives, that would serve to introduce further distortions into energy markets.

Specific issues with SENEs

Forecasting challenges

Under the proposed SENE framework, potential SENE sites will be identified by AEMO. Relevant NSPs must then produce forecasts of future generation from the site and design and price a connection asset based on those forecasts, with AEMO and the Australian Energy Regulator (AER) providing oversight.

Under this framework, accurate forecasting of the extent and configuration of future generation from SENE-designated regions is central to a SENE delivering benefits. If forecasts of generation prove accurate, all else being equal, a SENE is likely to deliver timely, efficiently-sized and cost-reflective connection assets to a suitable remote area, with economic benefits accruing to the market as a result.

However, to the extent that forecasts do not prove accurate, a SENE could add to the system wide cost of electricity supply. The economic cost of building an undersized SENE asset instead of incremental assets, as would likely be built under current connection frameworks, may be insignificant (or even negative) as there are likely to be at least some economies of scale and scope benefits realised from even an undersized SENE asset. However, in the event of an oversized SENE asset based on forecasts that prove to be overly bullish, the economic costs of excessive capitalisation could be more significant and are to be borne by consumers through higher network charges feeding into higher electricity prices.

With the economic benefits of a SENE hinging largely on the accuracy of forecasts, a prime consideration before introducing the framework is whether it is reasonable to expect that forecasts will prove to be accurate in terms of the extent and configuration of generation. It is therefore worth considering the challenges of producing accurate forecasts.

As demonstrated by countless incorrect forecasts in all fields of business and government, forecasting the future is inherently difficult. Given the decentralised, commercial decision making framework for new generation investment in the NEM, the SENE framework essentially requires the NSP and AEMO to predict how current and prospective participants in the Australian market will invest a number of years into the future.

Notwithstanding the sector knowledge of NSPs and AEMO, this is an unavoidably difficult task. The factors that drive investment decisions are complex, dynamic and interrelated. These factors include: the extent of the resource; the costs and/or viability of technologies; demand for load; the capability and constraints of the wider transmission system; the likelihood that planned/committed projects proceed; developments at other SENE; future carbon prices; domestic and global economic growth; commodity prices; and government policies.¹ Further, even forecasts that are accurate given the information available at the time made can quickly become out of date as the factors that underpinned them inevitably change.

The spatial configuration of generation connecting to a SENE will also be difficult to predict as it depends on a range of technical features to do with site selection and the quality of the resource. Additional challenges may arise for emerging renewable resource technologies that are not yet well understood.

The risk of oversized SENE and impact on consumers

The MCE and AEMC are cognisant of these risks and have designed safeguards to minimise the chance that excessive SENE assets are built, including separating forecasting and verifying responsibilities, providing opportunities for broader stakeholder consultation/involvement and empowering the AER to disallow any proposed SENE connection contract.

The MCE has also asked the AEMC to examine an incentive structure for NSPs to encourage prudently designed assets. esaa notes the difficulties identified by the AEMC in developing such an incentive system for NSPs without compromising the policy intent of SENE or creating new risks for market participants. To the extent that an incentive structure creates new risks for NSPs, the consequent increase in their cost of capital must be recognised in price setting processes.

While esaa appreciates the safeguards proposed, given the inherent difficulties described above with forecasting future generation from a region, the risk that generation does not eventuate as forecast and therefore the SENE connection asset is *ex post* incorrectly sized is inescapable. Under the proposed SENE Rule, this risk is borne by consumers, who bear the direct financial cost. Oversized SENE will also have indirect opportunity costs for the wider sector more broadly in that they will consume capital and other resources that could have been better deployed, especially given the significant investment task facing the network sector.

The MCE has justified consumers bearing the stranded assets risk of NSPs on the grounds that consumers will capture most of the benefits of right-sized connection assets. Arguably, given the climate change dimension to SENE, the benefits will be truly societal. While pushing the cost onto electricity consumers may be an effective way to overcome the disincentives faced by generators and NSPs, an alternative approach worth consideration by the AEMC is whether there is a role for taxpayers, as opposed to electricity consumers, bearing the risk of an oversized SENE.

¹ While the mandated Renewable Energy Target (RET) quantities may provide a reference point for generation forecasts, as the RET is nation-wide, these quantities are unlikely to be sufficiently detailed to underpin the detailed regional forecasts necessary for SENE clusters.

The relevant question in considering whether SENEs are justified appears to be whether the possible savings for the market from well-designed SENEs are sufficient given the risks of undersubscription. Without rigorous quantification of the possible cost savings from successful SENEs and the possible costs from scenarios where expected generation does not materialise, it is difficult to make an informed judgement on this tradeoff. Accordingly, esaa welcomes the intention of the AEMC in the Consultation Paper to assess whether the potential cost of inefficient duplication of connection assets is material and, if so, whether those costs are likely to be greater than the cost that may arise from the asset stranding under the proposed new framework.

Presenting such information on the possible benefits and costs from SENEs in the draft determination will assist industry and other stakeholders gauge the risk-adjusted net benefit of SENEs. This analysis should examine examples at the transmission and distribution level, consider the implications of generation not connecting in the configuration expected and the possibility raised in the Consultation Paper of interruptible generation seeking to connect with a zero power transfer capability.

Options for mitigating risks of oversized SENEs

One approach for mitigating the risk to consumers of bearing the cost of stranded assets is to stipulate the level of generator commitment to a proposed SENE before construction begins. Under the MCE's current proposal, the trigger for construction of a SENE is a single generator agreeing to connect. esaa considers that the AEMC should examine the merits of enhancing this level of pre-commitment to afford greater protection to consumers.

One option warranting examination was raised in the AEMC's First Interim Report of its climate change review, where it discussed a threshold of minimum generator commitment before the SENE is built to manage customer risk. This option was dismissed in the Second Interim Report by the AEMC on the grounds that the level of committed capacity is not a good indication of the level of risk that customers face. The AEMC argued that committed generation above a minimum threshold might trigger a larger asset than would otherwise have been built but that having chosen the larger option, committed generation might not meet the threshold for this larger asset. However, this larger option could be preferable as it is less risky for consumers given the scale economies involved. While the AEMC's reasoning may hold, implementing a minimum threshold that was only applied as a trigger to build the original SENE, and not as a trigger to upgrade the SENE, could still be useful as a measure to manage customer risk.

Another approach that could be used to give effect to a minimum threshold is the use of market-based instruments. One possibility raised in the Consultation Paper is allowing generators to purchase tradeable options for the right to contract for capacity on a proposed SENE. This idea warrants further exploration as, while the collective financial amount of these options might be small relative to the capital cost of the SENE, their value would be in providing information on market willingness to build generation and hence the accuracy of the forecasts. There may be scope to combine a minimum level of generator pre-commitment with a minimum level of generator interest through the purchase of options to connect.

SENEs joining the shared network

The proposed Rule stipulates that the SENE connection offer would include a defined power transfer capability for subscribing generators that connect before the SENE is full. The proposed Rule also says that the SENE will not be part of the shared network (and hence not part of the NSP's regulated asset base) but rather will be fully funded by subscribing generators (assuming full take up). The NSP will be allowed to earn the regular rate of return on the asset.

However, as noted in the Consultation Paper, it is possible that as the network develops over time a SENE could become difficult to distinguish from the shared network. This could occur through load connecting directly to the SENE or the SENE becoming a loop in the grid through a second connection point to the shared network.

Under these circumstances maintaining the agreed capacity rights of generators on the former SENE becomes difficult given the NEM's current non-firm access framework for the transfer of power on the shared network. The Consultation Paper considers a number of potential resolutions to this situation, including preserving transfer capability preference or expiring SENE rights after an adjustment period, but correctly notes the significant drawbacks of both.

Given the long time frames associated with SENEs esaa agrees that the regulatory approach to apply in these situations should be resolved before enacting any Rule change in order to provide clarity to industry. However, the Association cautions against incremental solutions to access issues raised by SENEs. Without careful assessment, what may appear to be incremental changes to the current frameworks could have damaging and unexpected consequences.

Given the importance of access issues to the entire electricity market, esaa considers if any changes to broader network policy frameworks are required to enact SENEs, then these should be considered in the context of holistic assessment of access rights issues (such as part of a MCE-initiated review of network policy) and not as an appendage to this SENE Rule change. If necessary, the AEMC should evaluate the scope to recommend further and separate reviews to adequately resolve any outstanding access issues.

Any questions in respect of our submission should be addressed in the first instance to Kieran Donoghue, by email to kieran.donoghue@esaa.com.au or by telephone on (03) 9670 0188.

Yours sincerely

A handwritten signature in black ink, appearing to read 'Brad Page', written in a cursive style.

Brad Page
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