



9 June 2021

The Chair
Energy Security Board
C/- CoAG Energy Council

Sent by: email to info@esb.org.au

**Post 2025 Market Design
Options Paper April 2021**

Major Energy Users Inc (MEU) is pleased for the opportunity to provide its views on the Options Paper released by the Energy Security Board (ESB) in relation to the post 2025 Electricity Market Design and its long term, fit-for-purpose market framework to support reliability, to meet the needs of future diverse sources of non-dispatchable generation and flexible resources including demand side response, storage, and distributed energy resource participation.

The MEU was established by very large energy using firms to represent their interests in the energy markets. With regard to all of the energy supplies they need to continue their operations and so supply to their customers, MEU members are vitally interested in four key aspects – the cost of the energy supplies, the reliability of delivery for those supplies, the quality of the delivered supplies and the long-term security for the continuation of those supplies.

Many of the MEU members, being regionally based, are heavily dependent on local staff, suppliers of hardware and services, and have an obligation to represent the views of these local suppliers. With this in mind, the members of the MEU require their views to not only represent the views of large energy users, but also those interests of smaller power and gas users, and even at the residences used by their workforces that live in the regions where the members operate.

It is on this basis the MEU and its regional affiliates have been advocating in the interests of energy consumers for over 20 years and it has a high recognition as providing informed comment on energy issues from a consumer viewpoint with various regulators (ACCC, AEMO, AEMC, AER and regional regulators) and with governments.

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The MEU stresses that the views expressed by it in this response are based on looking at the issues from the perspective of consumers of electricity and it has not attempted to provide any significant analysis on how the proposed changes might impact other stakeholders.

The MEU and its members have had considerable involvement in the ESB processes, and this has been extremely useful in identifying the ways forward. The MEU is appreciative of this and thanks the ESB for the opportunities provided to present its views.

Analysis of the Options Paper

While the Options Paper provides many concepts for further investigation, the MEU points out that the ESB has not assessed the costs of any of its options to identify whether the proposed changes deliver value for the costs involved. This is a major shortcoming of the Options Paper.

The MEU understood that the Options Paper was intended to provide the basis for selecting the best options for change to the NEM structure and/or rules to address the identified changes being seen in the NEM. What the Options Paper tends to provide is predominantly a listing of changes the ESB considers should be formally implemented and where options for change are detailed, the option for maintaining “status quo” has not been identified as a clear option.

Further analysis shows that the Paper really does not provide many options – in most cases the paper outlines rule changes that have already been implemented, some rule changes that are under investigation, some indicating aspects that should be further developed and others where future development is proposed. There are others (listed under “next reforms”) which are contemplated.

A review of the Options Paper shows there are only two elements where basically two options are proposed:

- Whether the RRO should be financially or physically based
- Unit commitment for security or System Security Mechanism

and one other (Medium term whole of system access solutions for transmission and access) where there still remains significant discussion as to what might be the optimum approach from a range of approaches. The balance of the options paper outlines changes that are proposed so the MEU has assumed that the ESB is seeking support whether each of the elements proposed should be included in the final report to Ministers.

It is on this understanding that the MEU has responded to the Options Paper.

Introductory comments and observations

As a headline observation, the MEU supports the ESB in its endeavour to provide a consistent and national approach to the way the National Electricity Market (NEM) should function and adjust to the changes being experienced over time based on evidence rather than conjecture. Despite this observation, the MEU considers that the Options Paper presents changes which are not necessarily supported by evidence and there are views expressed within the Options Paper that appear to be driven by external pressures for change rather than an organic development of the market rules.

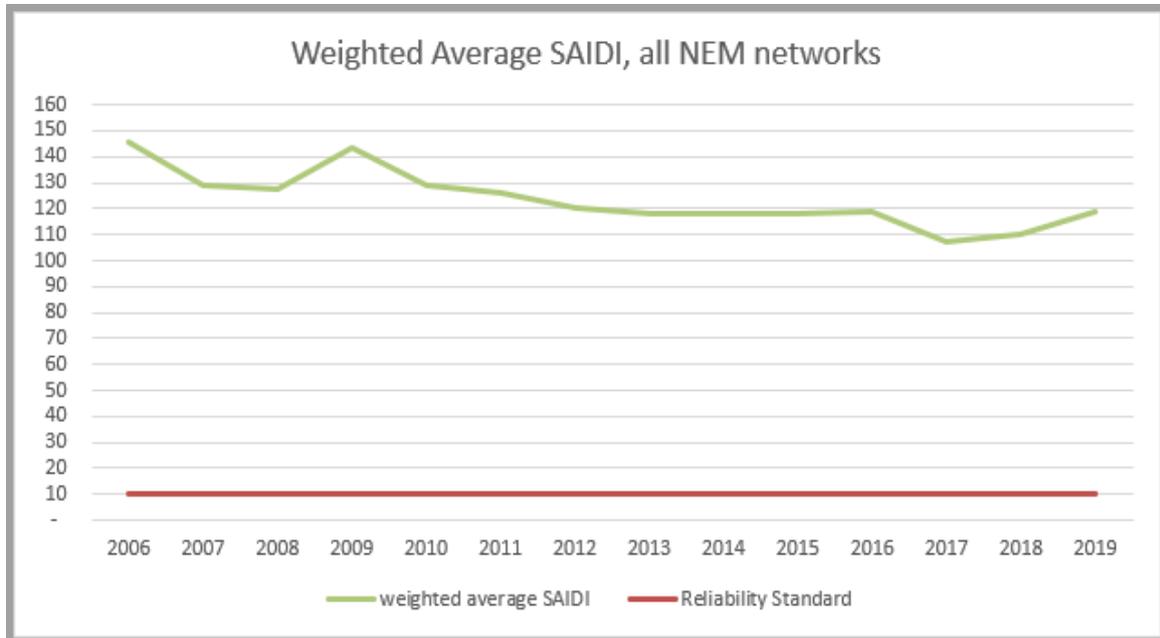
There appears to be a trend in the Options Paper that the MEU finds most concerning – that there are a number of rule changes made over the past 2-5 years that have been implemented but are still to be tested as to whether they are effective. Until recent times, there has been a consistent view amongst the rule makers, regulators, and operators that a change should be well tested before any assessment is made as to its effectiveness and whether it needs to be further refined. In contrast, the post 2025 program is predicated on the assumption that the market will not be “fit for purpose” and change is necessary. The brief given to the ESB for the post 2025 review reinforces this view. Overall, the MEU considers that the market is working well in its current form and should only be changed when there is clear evidence that an aspect of the market is not delivering the outcome needed. Such stability of the market rules is an essential element for those seeking to invest in the market and the Options Paper is introducing the potential for loss of this stability and overall confidence in the market.

The Options Paper provides views that, in a number of areas, include solutions that are “out of market” approaches but still add costs to consumers’ bills. This is a concern as the more out of market activities in the NEM, the less the market itself becomes relevant and there is a reversion to the determinative models used in the era before the NEM was established.

Throughout the ESB review process, while the MEU has noted that the ESB has attempted to reflect the views of stakeholders as it “drilled” down into the issues, the ESB appears to have been exposed to considerable political pressure and this has appeared to influence the choice some of the limited options included in the paper. This political influence has been driven by governments seeking to impose their views that reliability at any price has primacy in the design of the market, yet consumers have consistently accepted that there will be times when supply will be limited because the cost of increased reliability is too great a burden. They have also stated unequivocally that current levels of reliability are acceptable, but they do not want to pay more for improved reliability.

Specifically, the MEU points out that any loss of supply in the wholesale market is a miniscule element of the loss of supply experienced by end users of electricity, yet the governments seem determined that improving reliability of supply in the wholesale market must be implemented regardless of the costs. The MEU points out that the AER has identified that the weighted system average interruption

duration index (SAIDI) for every distribution network in the NEM was 119 minutes in 2019¹ and this is at the low side when looking at the long-term trend shown in the following chart.



Source: AER Electricity Distribution Networks Performance data report – 2006 – 2019, sheet 5, MEU calculation

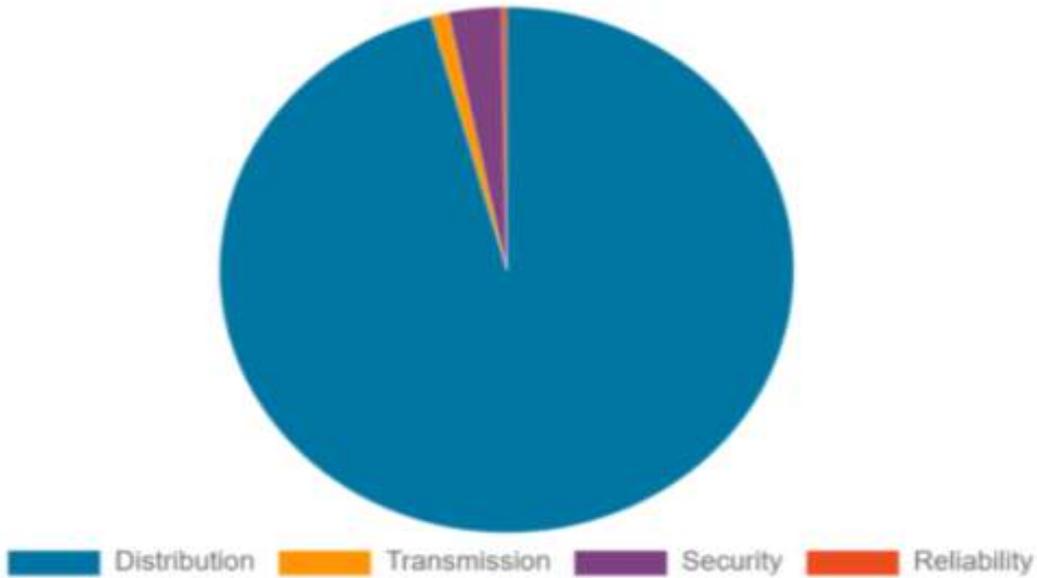
In contrast the unserved energy (USE) actually experienced in the NEM averages just 2-3 minutes in a year, while the Reliability Standard implies that an average 10.5 minutes off supply is an acceptable level of loss of supply from the wholesale market. Effectively, the pressure being brought to bear on the ESB is focussing on an element of the supply chain that is already extremely well served and delivers excellent outcomes, where further improvements in wholesale reliability will have a minimal impact on the reliability of the NEM as a whole as seen by consumers at their points of connection. This is demonstrated in the following pie chart.

The argument around wholesale reliability is, in our view, overblown and does not reflect the reality that marginal improvements in the wholesale market will considerably increase costs for consumers for little observable benefit because reliability of supply is seen at the end user's connection point ie the point which sees the impacts of reliability from the entire supply chain.

For example, a 20% improvement in wholesale market reliability will deliver a reduction in USE of perhaps 2 minutes yet that 20% benefit might on average deliver a 1% overall improvement in reliability as seen at consumers' connection points. Yet the costs for delivering the 20% improvement in the wholesale market reliability would be out of proportion to the benefit seen by consumers at their points of connection.

¹ AER Electricity Distribution Networks Performance data report – 2006 – 2019, sheet 5

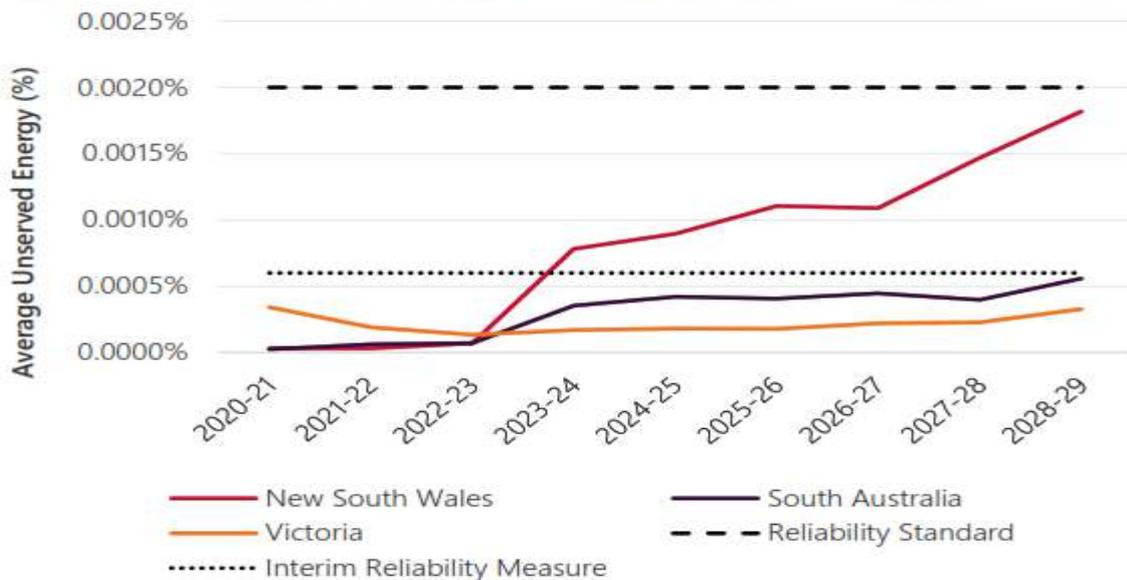
Figure 1: Sources of supply interruptions over the decade (2008-09 to 2018-19)



Source: Reliability Panel, 2019 Annual market performance review, Final Report, 12 March 2020, Figure 2.20, pp 36

The relative impact of improvements in wholesale market reliability is overstated when already the market is forecasting much lower unserved energy (USE) than the Reliability Standard in the 2020 Electricity Statement of Opportunities (ESoO). The 2020 ESoO forecasts that the expected USE for the rest of this decade will not exceed the Reliability Standard of 0.002% and in most states will be less than the Interim Reliability Measure of 0.0006% (or an average of 3 minutes loss of supply). The following chart shows that forecast supply, even with the massive changes in the generation mix being experienced now and in the future is still being accommodated within the current NEM reliability settings.

Figure 2 Expected unserved energy, Central scenario, 2020-21 to 2029-30



Source: AEMO 2020 ESoO

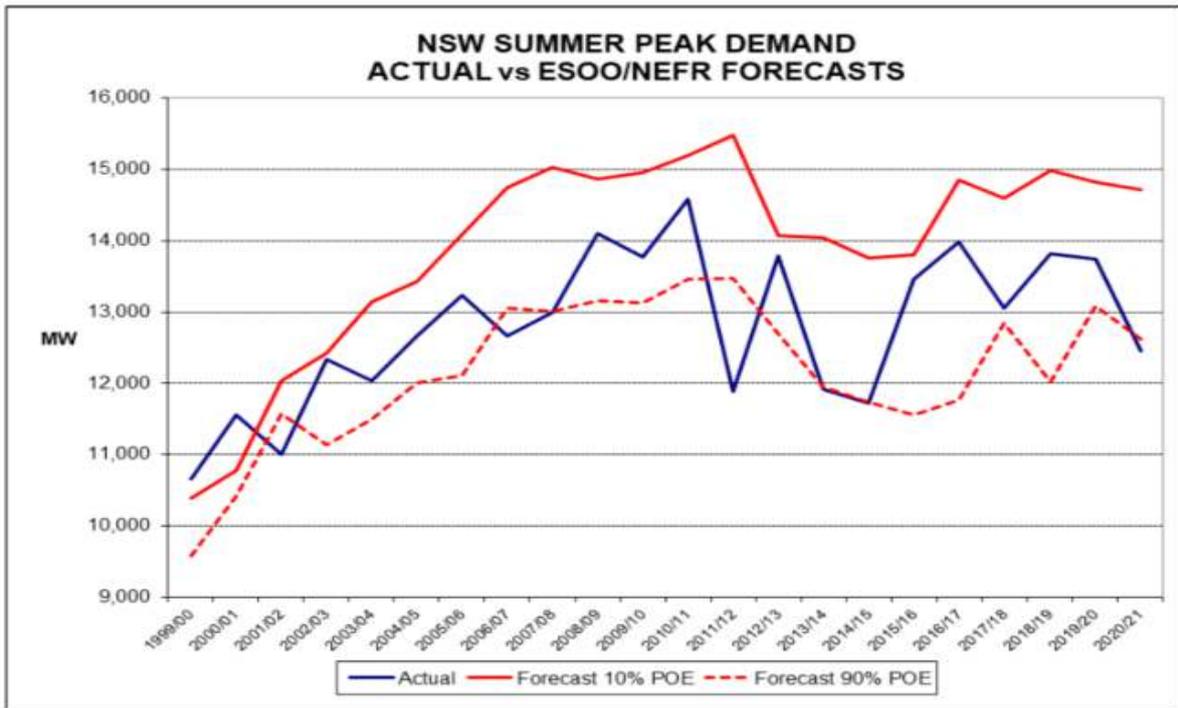
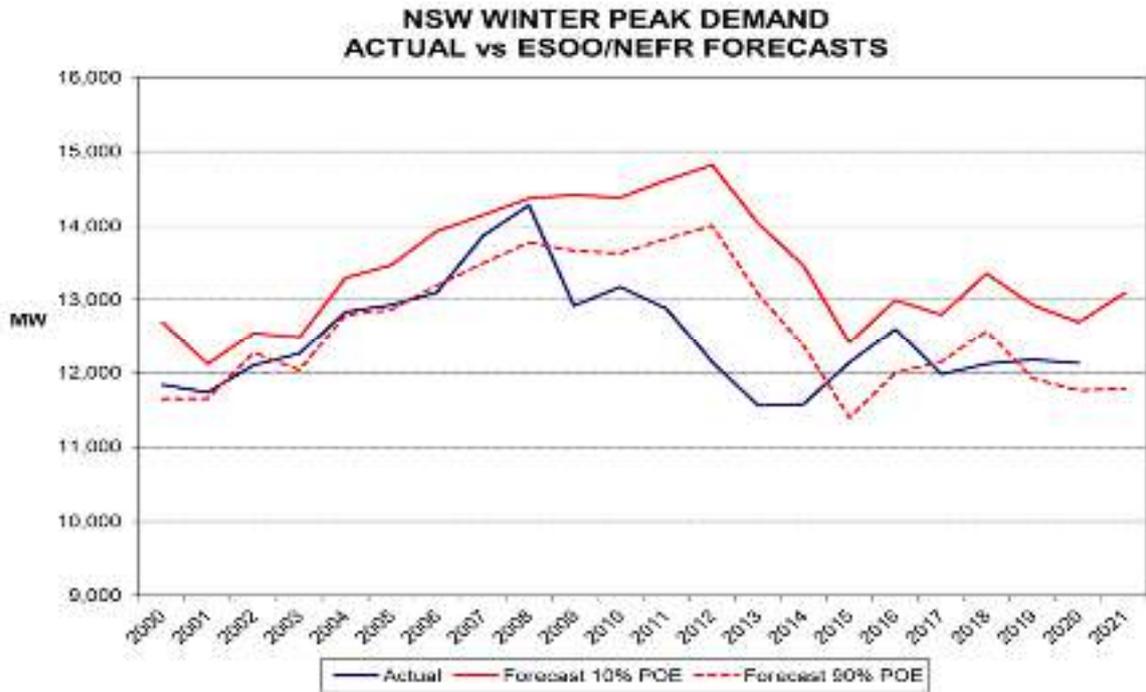
What the chart also shows is that despite there is considerable change being experienced in the generation supply mix (with more change to come), the market has responded well and will still deliver the requisite supply to consistently outperform the Reliability Standard over the rest of this decade. This clearly demonstrates that the market is operating as planned to deliver the targeted outcome and does not need the government interventions being experienced. In fact, there is evidence that the government interventions have introduced increased uncertainty and this uncertainty has resulted in the private sector being less prepared to invest in the market.

The MEU notes that, in recognition that the market is experiencing considerable increase in variable renewable energy (VRE) generation, the ESB has already introduced some innovations (eg the Retailer Reliability Obligation) to ensure there will be sufficient firm dispatchable supply in the future. What is concerning is that despite the introduction of these innovations, and the fact that the RRO has never been triggered or even tested, there is government pressure to further refine these innovations causing concern in the market and which will considerably increase costs for end users for little benefit.

The MEU quotes the observation of an informed member of the AEMO Forecasting Reference Group:

“We have a forecasting issue, not a reliability issue in the NEM.”

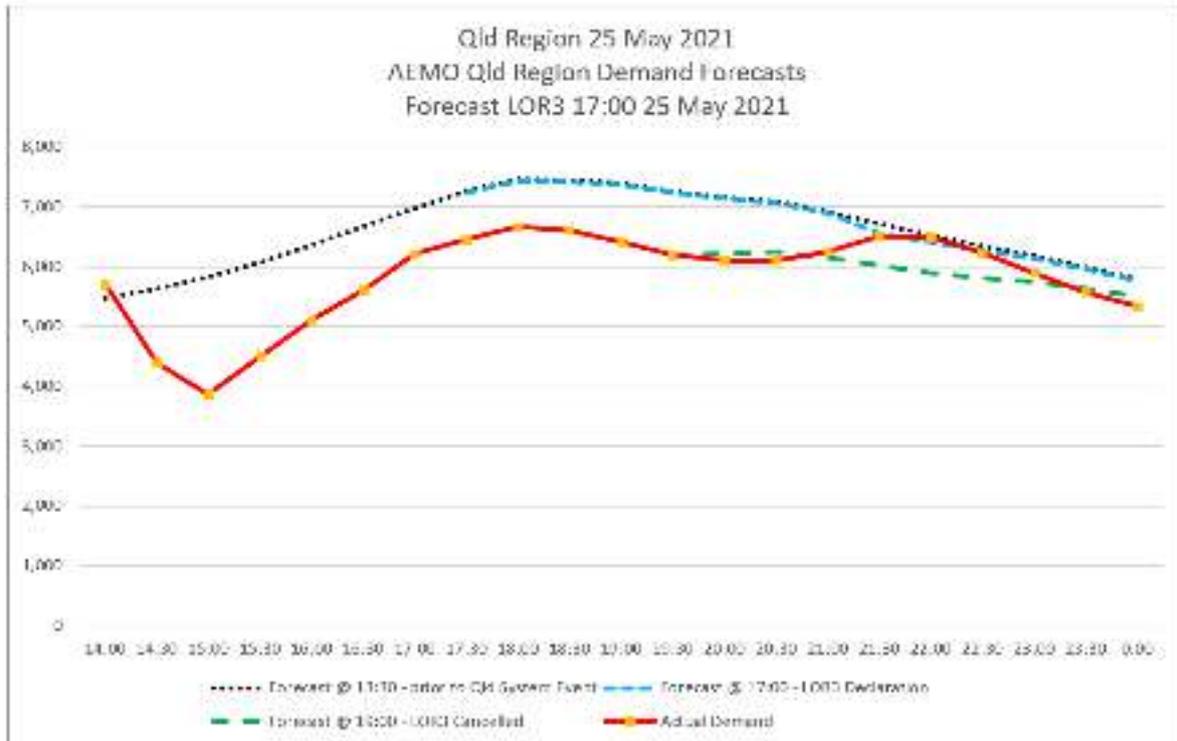
This observation was made when concern was expressed that the RRO might need to be triggered in Victoria in the 2019 ESoO as AEMO identified that there was an extreme risk of supply shortage. In fact, the forecast was extremely conservative and did not reflect the advice provided by the market about the timing of future supplies being available. This assessment of excessively conservative forecasting is backed up the actual forecasting performance of AEMO and NEMMCo over the years. While the MEU recognises that AEMO staff try hard to get their forecasting right, it is consistently observed to be very conservative the forecasts are as the following charts for NSW show.



Source: Shell Energy analysis of AEMO's historical ESOO, National Electricity Forecasting Report (2012-2017) and realtime data. Actual outcomes adjusted by AEMO reported RERT Dispatch and Instructed Involuntary Load Shedding

Similar data for the other states shows just as great a level of conservatism in other regional forecasts. The same data as above for Victoria is attached as appendix A.

Even in the short-term forecasting (such as during the recent loss of supply event in Queensland) highlights the conservative approach by AEMO which, in turn, leads to market intervention resulting in additional costs to consumers but with little tangible consumer benefit.



The MEU accepts that AEMO should be a little conservative in its forecasting, but the analysis shows that it is consistently excessively conservative. This excessive conservatism is recognised by investors in providing supply into the NEM as they rightly fear that if they accept the excessively conservative AEMO forecasts, they will not receive the returns they need from their investments to provide supply to meet demand. History shows that supply has consistently been provided as it is needed, and this is exemplified by the amount of USE occurring in the market since its inception as reliability has consistently on average been less than the Reliability Standard.

While highlighting the excessive conservatism in AEMO forecasts, the MEU points out that the purpose of the ESoO is to provide guidance to investors as to what the market might look like many years into the future. This means that the ESoO will show that in the future there might be USE greater than the Reliability Standard at some time in the future. This is what the ESoO is meant to do, and it provides both a timeframe and quantity on the new investment needed to keep the NEM reliable.

However, governments see this forecast shortfall as demonstrating a need for action as it appears that the market is not responding as expected. This is a failure of government to understand how a market works and perhaps fearing a political backlash. All MEU members operate in a competitive market and use forecasts to assist them in ensuring they remain able to continue their operations in the market and when and how much to invest to maintain their market position, but they do not act until there is a need that fits within their investment time frame. The MEU considers that the NEM has provided over 20 years of experience that it does provide the incentives needed for investment to deliver the needed future supplies

and governments should let it do what it demonstrably has done well over the years without intervention.

The MEU recognises that the massive growth in VRE generation is a result of the recognition (especially by the states) that carbon emissions have to be reduced and so state governments are acting independently to achieve this outcome. What is absent is a national policy, in not only reducing carbon emissions, but how this process is to occur and what interim targets need to be set on the pathway to achieve this outcome. As the supply of electricity is the largest emitter of carbon emissions, it is essential that the pathway to delivering the targeted outcome in the NEM is clear and nationally consistent.

The ESB activities have identified the realities of what is likely to occur as a result of the actions by the different states and when, and this is well detailed in the options paper. What is of concern to the MEU is that some of the options provided propose changes that are both unnecessary (based on the performance of the NEM) but which will lead to significant increases in costs for end users.

The MEU notes that the NEM has a well proven process for implementing changes to the market rules and incentives as they are seen to be needed. There are those who consider the rule change process can be too slow and cumbersome yet after 20+ years of operation, the NEM has implemented changes needed in good time to meet the need. What is often overlooked is that investors need confidence that the market will show consistency and constancy, and will not be exposed to frequent changes being made without sensible assessment. The NEM rule change processes deliver this stability and so investors are comfortable with investing. Frequent and large changes outside the rule change process reduce this confidence.

There has also been expressed concern that the regulatory process for approving new network investment is also too slow and cumbersome. What is overlooked is that these investments result in costs that are almost entirely carried by end users and based on expected benefits that will occur decades into the future. Consumers have an expectation that investments they are to pay for over many decades (50-60 years) need to be demonstrably in their interests and not the result of shorter-term benefit to those who do not pay for them.

The MEU does not consider that faster assessment of rule changes or network investments will be in the long-term interests of consumers, as required by the National Electricity Objective because speeding up the processes can lead to errors being made through insufficient analysis and investigation of stakeholder views, leading to outcomes that are not in the long-term interests of consumers .

In the following sections, the MEU provides its views on the specific options proposed and the commentary above provides the bases for the views provided.

Resource adequacy and ageing generator retirement

As noted above, the MEU is very concerned that too much attention is being applied to the reliability of supply from the wholesale market and that the costs involved with further increasing reliability of supply (eg the unilateral decision to implement the Interim Reliability Measure of 0.0006% USE in each region) will outweigh the benefits to consumers at their points of connection, recognising that loss of supply seen by consumers is more impacted, by a factor of over ten times, the levels of reliability experienced in the distribution networks. What is absent in the options paper is any assessment of the cost to benefit of the proposed changes.

The Options Paper outlines the increasing amount of intervention in the market by AEMO in order to prevent any loss of supply. There is no discussion as to whether the benefit of this intervention is outweighed by the costs of this intervention, recognising that consumers already see outages from other parts of the supply chain.

The MEU recognises that already governments are intervening in the market in regard to the ensuring the managed exit of thermal generators from the market. For example, the Victorian government has contracted with energyAustralia about the timing of the exit of Yallourn power station and the Federal government has instructed its generator (Snowy Hydro) to build a gas fired generator at Kurri Kurri in NSW to limit the impact of the exit of Liddell power station. While the MEU accepts that governments will take actions using taxpayer funds to assist in managing the controlled exit of generators, the MEU is less convinced that governments should be seeking to add new generation² except where the need is generated by the market.

The MEU has observed over the 25+ years of the NEM (including NEM1 before it) that the market has been responsive to the incentives and forecasting of need in that generation has been added when it is needed. That the amount of USE has remained well below the Reliability Standard is evidence of this. This raises the fundamental question as to why there is an expectation that the market will not continue to provide the responses needed to maintain reliability of supply. What has been seen is that when governments actively intervene in the market, this creates uncertainty with a result of less certain market response and the risk of insufficient supply.

The MEU agrees with the ESB that more information provided to the market enhances the ability of market participants to better respond to the market signals with certainty and confidence. The MEU therefore supports the proposals provided to increase this market information, especially in relation to information provision of resources to be underwritten and for a set of national principles for the design of contracts used by governments to underwrite new supplies.

² See for example the Grattan Institute article which discusses the Federal government decision to impose on the market a 660 MW generator at Kurri Kurri, regardless of identified need <https://grattan.edu.au/news/gas-misfire-the-federal-governments-600m-intervention-in-the-energy-market/>

The MEU recognises the need to manage the exit of very large generators as the loss of large amounts of supply in a short period with little notice has previously resulted in considerable harm to consumers – not so much as a supply issue but from the cost of electricity as other generators seek to maximise their ability to increase revenues. The MEU supported the concept of generators providing sufficient notice of an exit when this was proposed some years ago although the MEU also recognised that enforcing such a notice period does face challenges, especially if the generator owner is losing money – it is unreasonable to expect a generator to continue losing money while “working out its notice”. The MEU supports having consistency in approach to managing this issue.

The MEU considers that as part of the management of generators seeking to partially retire (such as only operating only for certain times of the year) the MTPASA process needs to be strengthened so there is more clarity about what is planned by each generator but there should also be a penalty if the generators do not follow their plans as provided in the MTPASA. To make this work well, the MEU considers the MTPASA would need to be extended for a three year or more outlook for both demand and supply to monitor the actual performance of each generator, the impact any changes have on the market and to match the advice the generator provides as to how it proposes to operate in the market.

The MEU supports the ESB proposals outlined in the options paper to assist in better management of generator exits, with the addition of a strengthened MTPASA to forecast forward for at least three years.

The Retailer Reliability Obligation (RRO)

The MEU was an active participant during the development of the RRO. The MEU has also noted since the RRO was introduced that, although triggered, there has not yet been an instance where there has not been a market response to address the forecast under supply. This clearly implies that the RRO, along with other mechanisms, is working and there is no clear need for any change to what currently works.

The ESB references the reality that state governments are entering the supply market but mostly this activity is not related so much to enhancing reliability but to encourage low or zero carbon emission generators into the market to assist in the States achieving their carbon emissions goals. There are some government incentives to provide storage devices (mainly batteries) to provide some reliability and security features but also there is considerable private investment in these storage devices as well, indicating that the market is responding to the need to firm up VRE generation, already installed and planned. This clearly indicates that the market is working under the current settings.

The RRO as currently operating has provided some incentive to the market, but it appears that the ESB has already decided that it is insufficient, but provides no evidence to support its theory. What is patently missing from the Options Paper is

that there is option for no change to the current RRO. The MEU considers that after many months taken to develop the current RRO, there should be some confidence that what is in place addresses the many concerns about ongoing and future reliability. The AEMO 2020 ESoO shows that there is no issue in this decade where there is a forecast insufficient time to implement market-based action; this supports the view that the current market arrangements are sufficient for the need.

Coupling the assessment of the forecast requirements with the fact that there have been no penalties so far imposed under the RRO, the MEU does not agree with the ESB that changes are needed to the current RRO. Further, the MEU considers that the options proposed by the ESB will result in additional costs for consumers resulting from the increased costs and risks the changes to the financial RRO or to a physical RRO will impose, so the MEU is at a loss to understand how the ESB could consider that the proposed changes will deliver a net benefit to consumers. It is concerning that the ESB has not included the current RRO (ie the status quo) as an option to be considered along with the two options the ESB has identified.

While the MEU does not accept either of the options proposed as better for delivering the required outcome (that there will be sufficient generation available to ensure reliability of supply), the MEU makes the following observations about the proposed options, noting that it considers the Option 1 (modified RRO) is less unacceptable than the Option2 (physical RRO).

ESB Option 1 – Modifying the current RRO to remove the T-3 trigger.

The purpose of the T-3 trigger is to provide both a signal for investment and to provide a timeframe that allowed this investment to be implemented³. For the current RRO, there was considerable discussion as to what the length of the “notice period” should be, in that it needed to be far enough away that there would be time to implement investment and it needed to be close enough that the forecasts could be seen to be reasonable and likely. Three years was determined to be the optimum length of time for both.

Removal of the T-3 trigger results in greater risk to retailers about providing investments to meet any potential under-run in supply and could result in over-investment, a cost that will be borne by consumers but with no discernible benefit.

If the T-3 trigger is removed, there needs to be a process to provide the knowledge that retailers need to be able to identify if they have an exposure to the RRO penalty, noting that when the supply side shortage is identified at T-1 with the retailers becoming exposed to their share of the RERT costs, they do not have adequate time to implement measures to obviate their exposure.

³ The MEU notes that while some investments might need considerable time (eg new hydro) to implement, there are less time demanding options available to investors.

This results in two additional aspects for this option that would have to be addressed:

1. The MTPASA needs to be extended in full for the 3-year forecast period, rather than just the supply side assessment as was done recently as a rule change. During this rule change process, stakeholders expressed a view that both elements of MTPASA (supply and demand) had to be extended, but the AEMC decided, at the request of AEMO, not to require the demand side of MTPASA to be extended from 2 to 3 years. If the T-3 trigger is removed, then MTPASA must be extended to replace the T-3 trigger and so allow retailers sufficient time to implement the investments needed.
2. During the discussion for the current RRO, there were concerns raised by second tier retailers that, as much of the dispatchable generation was held by the vertically integrated retailers (the “gentailers”) there had to be a mechanism to provide second tier retailers to the full suite of generation to allow them to establish their underlying RRO contracts. Further, it was noted that while retailers had to contract to secure their financial support for the RRO, generators have no such obligation to offer contracts – this creates a biased contracting arrangement where retailer “must”, but generators “may” contract. The Market Liquidity Obligation (MLO) was developed to address these concerns, but the MLO is only triggered with at T-3. With the loss of the T-3 trigger, the MLO will be impacted. This means that the revised RRO will have to ensure there will be adequate availability of equitably priced contracts available from all generators (especially from the “gentailer” fleet) available to all retailers to allow retailers adequate time to implement their actions to minimise their risk in year T.

The MEU does not consider that the ESB has appropriately considered these elements as part of its development of the “modified RRO”.

ESB option 2 – Introducing a Physical RRO (PRRO)

The entire NEM is predicated on a financially driven energy-only process, and this has worked well for the 25+ years of the NEM and NEM1 before it. Introducing physical certificates to a financially based market introduces additional risk and complexity – with risk and complexity comes increased costs for consumers.

Essentially, the introduction of physical certificates for the RRO is tantamount to moving to a capacity market, albeit only at times when the RRO is likely to be triggered. It is widely recognised that capacity markets impose more costs on consumers and increases complexity of the market significantly. Further, a move to a physically based RRO would require significant changes across the NEM, including market settings to achieve the Reliability Standard (RS), and even change to the level and form of the RS.

Specifically, the market price cap (MPC) currently assumes that the market is energy only and the MPC provides the signals to the market when additional resources are required. If dispatchable capacity is contracted via physical certificates, then the reason for the MPC being so high is removed. The MEU notes the ESB considers that the need for physical certificates would only occur at T-3, it therefore assumes that the price for certificates could be quite low. The MEU considers this is a “courageous” assumption.

The history of the market is that generators will act to enhance their revenues (as AGL so blatantly did in the SA market in 2008, 2009 and 2010) and more recently in Queensland before the Queensland government told its generators to cease the gaming activity). There have been many other instances where generators have used transient market power to increase their revenues at great cost to consumers. The ESB makes no mention of the ability of the dispatchable generators using their market power when pricing their certificates at the time of a T-3 trigger (if it is retained for the PRRO) occurs – certainly the vertically integrated retailers will have a significant benefit compared to second tier retailers in securing these certificates, creating much higher risk and cost for second tier retailers.

The MEU points out that the ESB devoted considerable time to the concept of “physical backing” in its original assessment of the RRO and decided that a financial assessment approach was best suited to the NEM, and it noted that even with financial backing, there is a tie back to some form of physical backing. The ESB considered that financial backing approach gave much greater flexibility and liquidity in providing the certainty that the RRO was delivering the outcome sought at the lowest cost.

While Table 1 of part b of the Options Paper provides some conceptual detail about how the PRRO might be structured, there are many points identified where more work is required to implement such a scheme within the NEM architecture. This makes it quite challenging for end users to provide more comprehensive commentary on how a PRRO should look like when implemented.

An aspect missing from the detail provided in Table 1 is how demand response will be treated in providing physical certificates. While the financial approach to demand response in the market provides some flexibility, the response to end users taking up the Wholesale Demand Response Mechanism (WDRM) has been underwhelming⁴ with most end users preferring other methods of providing their demand response. The MEU sees that the PRRO will need to be formulated along the lines of the WDRM to ensure that the physical certificate from end users is clearly underwritten yet the WDRM process is too complex and risky for most end users to provide

⁴ See comments in section below under “Integrating DER and flexible demand” about MEU concerns with WDRM.

this form of demand response, indicating that demand responses for a PRRO might not be very forthcoming.

There has been no assessment by the ESB as to the costs (other than in qualitative terms) such a model would impose on the market or even what additional benefit consumers might gain from such an arrangement that they do not already get. The MEU sees that not only would consumers be paying for generators “just to be there” even if they do not provide any energy to the market, but there will also be considerable administrative costs as well, none of which are quantified.

In summary, the MEU considers the ESB has failed to reflect that the current RRO is an option and that the two options provided have serious flaws.

Essential services, scheduling and ahead mechanisms

The MEU has contributed its views to the AEMC on the rule changes for fast frequency response and primary frequency response and supports both of these rule changes.

System Strength

The MEU has also recognised the need for the provision of system strength and responded to the AEMC (in assessing the TransGrid rule change) stating unequivocally that costs and risks for system strength needs resulting from VRE decisions, should not be carried by consumers and that VRE should either provide their own system strength response or contract directly with the local transmission service provider to provide the system strength needed. The MEU pointed out to the AEMC that consumers faced considerable cost and risk if the system strength is to be provided by them based on the forecasts of need (calculated by AEMO before the VRE is even established) and delivery (by TNSP), as there was no certainty that:

- The AEMO forecast of need was correct.
- The TNSP costs for provision were reasonable other than by an AER review and untested by competitive means.
- The VRE generator would not “do its own thing” if its costs were less than the TNSP solution.
- That VRE would connect to the amount forecasted by AEMO.

The MEU sees that consumers face the risk of under-utilisation or stranding of the assets provided by the TNSP and whether the costs incurred by the TNSP would be recovered by the TNSP from the VRE generators, especially if the TNSP costs were more than the costs for the VRE generator “doing its own thing” – a quite likely scenario with the advent of grid-forming inverters (costing only marginally more than grid following inverters). Grid forming inverters obviate the need for transmission-based system strength due to the much lower cost than to build considerable transmission assets and synchronous condensers.

The MEU considers that the issue of system strength as proposed by the AEMC remains a significant issue.

Operating reserve

The MEU has considerable concern about the retention of this element in the options paper. The ESB asserts that this element is needed due to the likelihood of the need for a faster “ramping service” as VRE generation has the potential to reduce its output very quickly requiring a high ramping capability from other supplies. The MEU does accept that this need for higher ramping might be needed in the future, but the modelling provided to the Technical Working Group (TWG) looking at the potential need for the operating reserve, clearly identified there would be limited need for such a service. This modelling was carried out based on some quite extreme assumptions (identified as “book end assumptions”), including that an entire region might lose all of its solar or wind generation in a single dispatch interval and also excluded the value provided by interconnection, demand side responses and the likely advent of considerable storage. The MEU points out that storage (especially batteries that have the ability to ramp at rates much higher than the expected loss of supply) are already being provided by the market as they are needed.

The MEU has two concerns that were not addressed in the development of the “Operating Reserve” option.

Firstly, there was no consideration that the development of the operating reserve would take supply side options away from the spot market and also from the RERT and potentially the FCAS stables of providers. By introducing a new market into the mix, the competition in the existing market response tools would be reduced, driving prices in those markets up. The additional market would allow supply side providers to select the option that gives them the greatest revenue, further driving prices higher.

Secondly, consumers accept that there will be times when supply will not be sufficient, and this is behind the concept of the Reliability Standard – that consumers might not be served from the wholesale market for 0.002% of the time (about 10 minutes in a year⁵). If the operating reserve is only to be dispatched occasionally (as was clearly exemplified in the modelling for the TWG) then for considerable periods of time this operating reserve would lie idle but would have to be paid to be “available”. In the analysis of the need for an operating reserve there has been no assessment as to what the cost of this reserve might be for the amounts of energy that might be dispatched from it. If the amount of unserved energy from not having the operating reserve available is less than the Reliability Standard or if the total cost of the operating reserve for each MWh it provides is greater the Value of Customer Reliability, then there is no need for the operating reserve. But no evaluation has been done to identify if the costs warrant such a service. The MEU suspects that the cost will exceed the preparedness of consumers to pay.

⁵ This needs to be seen in context with the loss of supply from other sources – see comments in section above on “Introductory comments and observations”.

Unit commitment for security (UCS) and system security mechanism (SSM)

These options tend to overlap each other and if one were implemented then it is likely the benefit of the other would not warrant its inclusion in the rules. While both are supported in principle, the MEU notes that the SSM introduces a mechanism that can be expanded to provide other services in the future (eg for system strength) whereas the UCS approach has more of a single focus. The core difference between the two is that the SSM has the ability to test the market for lower cost options to providing the service whereas the UCS is more reliant on direct contracting with AEMO for the provision of the services.

While either approach is supported by the MEU, the MEU has concerns as to whether the UCS approach could lead to higher costs for consumers due to need for direct AEMO involvement and its penchant for conservative assessments of need causing higher costs for consumers. In contrast, the MEU is concerned at the growth in new services that will also lead to increased costs as providers look to increase their revenues by selecting the most profitable option and reducing competition for other elements in the marketplace.

On balance the MEU has a slight bias in favour of the SSM option if there is a clear need for this intervention.

Market for inertia and further unbundling

The MEU has concerns about the proposal for developing a market for inertia and of further unbundling of services needed for the proper operation of the system. The main reason for the concern lies with whether there is a need (eg for inertia this might well be provided by batteries offering the new fast frequency response being reviewed currently and the implementation of which the MEU supports) and what the impacts on the competition might be for other elements in the supply chain.

The MEU considers that much further work is required before it can be demonstrated that there is a need for either of these options.

Ahead markets

The MEU remains to be convinced that the development of “ahead markets” provide much benefit and is very concerned that costs probably outweigh the benefits. The MEU considers that direct benefits of “ahead markets” for consumers is quite limited on the basis that end users only act in the NEM at the periphery. Further, while “ahead markets” can be a benefit to market participants, the analysis undertaken to date by the AEMC in examining “ahead markets” has indicated that the benefits are not outweighed by the costs of establishing them.

The MEU agrees with the ESB that these market-based options (inertia and ahead) are best deferred at this time and then examined in detail if and when there might be net benefits available.

Integrating DER and flexible demand

The MEU supports the concept that end users should be able to provide demand responses into the electricity market as this can be a lower cost option than building the supply side to be able to manage the movements in the demand profile. But while recognising this, the MEU points out that generally end users use electricity at the times they do because when it suits their operations and activities best. While end users can vary their usage to a degree, inherent in the ESB options paper is an unrealistic assumption that there will be significant levels of demand responses to assist the electricity market.

Whilst increasing usage flexibility at the end user level, it needs to be recognised end users will only reduce their energy demand as peripheral to their normal activities – effectively demand response will always be modest in its involvement in the electricity market. This means that to encourage end users to reduce their demand the process has to be clear and simple, but overall low risk to the end user (ie in terms of their interface with the market) noting that the end user already faces considerable risk⁶ by reducing its demand when it would prefer to be using electricity.

The most recent change to the rules to encourage demand side responsiveness was the introduction of the Wholesale Demand Response Mechanism (WDRM). So far little demand response has been added thorough this mechanism, but noting that it does not start until October 2021. MEU members report that they are loathe to use the WDRM as they see it is too complex and very risky to enter. They further report that there are other mechanisms they will use to provide demand responses which are easier to use and much less risky. It is apparent that the rules and process surrounding WDRM are designed more to minimise abuse of the mechanism than in securing more demand response. As demand response is a peripheral activity of end users, the MEU considers that changes being made to encourage more demand response will have little impact until these changes are made easier to comply with and impose less risk than doing nothing or using other forms of demand response.

The MEU also notes that some of the activities considered to be enabling of more demand response differentiate between large generation and small generation (eg PV rooftop solar). The MEU notes that current rule change proposals seek to require generation embedded in distribution networks to pay for the ability to export their output. This is in stark contrast to the rules for transmission where generators are provided with the ability to export at no charge, using assets paid for by consumers. This issue has been the core point of contention between the rule makers and end users about who should pay for the transmission assets to allow export from the

⁶ The MEU points out that some end users when reducing their demand can incur significant production losses when reducing demand eg a paper mill can lose up to 8 hours production in trying to restart its operations after a shut down.

widely dispersed renewable generation that is entering the market. What this shows is there a need for consistency and clarity across the NEM as to who should pay for new generation to access the shared network.

While highlighting these two fundamental issues as aspects that need to be resolved, the MEU generally supports the changes proposed by the ESB in the section “Integrating DER and flexible demand”, although without recognition of the two aspects noted above (ie complexity and risk in the WDRM and consistency in treatment of VRE between distribution and transmission), the MEU is concerned that the changes will really achieve the goal of increasing demand response in the NEM.

Transmission and access

The MEU accepts that the transmission network needs to be augmented to provide access for the many more locationally diverse generation options that are a result of the move to lower carbon emissions and increase in renewable generation variable energy output (VRE) generation to achieve this. The MEU also sees the tension between the location of the best renewable resource and the location of the shared transmission network. While there is some locational tension for the VRE proponents resulting from between the best resource location and marginal loss factors, this has not appeared to have been sufficient to strongly drive the locational decisions of VRE proponents.

The MEU has seen that VRE generators are still locating in places where there is limited transmission network and so the VRE generators are being limited (even constrained off) in their output due to congestion. The result has been demands from VRE generators to augment the transmission network at consumers’ expense through seeking government support for their requests or, in some cases, implementing their own actions.

The AEMC has been discussing the issue of coordinating generation and transmission investments for many years (most recently under the Transmission Access Reform, formerly called CoGaTI) – there has been widespread stakeholder concern expressed about the AEMC preferred option (locational marginal pricing and financial transmission rights – LMP/FTR) as not meeting the needs of the market. Despite this opposition, the AEMC has persisted with developing the concept.

What is clearly absent from both the AEMC assessments and to a degree the ESB discussions, is that transmission should only be built to serve a need and that the beneficiary of the transmission asset should pay for it. There is an appetite for generators to fund their own transmission access on the understanding that they have “ownership” of the asset, and they have the ability to trade the rights in the future.

Rules should encourage VRE generation building or funding their own transmission investments by recognising three fundamental issues:

1. A new generator needs to have certainty as to the costs they will incur and the timing of the transmission access before they make a final investment decision.
2. The investment (or commitment to funding the asset) must provide firm access to the market for the new generator.
3. The generator funding the transmission assets must be allocated a tradeable property right to that access.

In addition, if consumers have any exposure to the costs for providing the new assets, there is also a need for ensuring consumers are not exposed to risks of over-building, under-utilisation or stranding of transmission assets when these new network assets are provided.

Other than the connection fee option for transmission access, the other options outlined in the ESB Options Paper do not meet these fundamental requirements. The MEU considers that the ESB should further examine options to implement a connection fee approach for new generator and storage getting access to the shared network. In this regard, the MEU has noted a number of concepts have been recently proposed, provided during the ESB “deep dives” and in earlier submissions to ESB and AEMC papers.

What is concerning about the assessments of the options is that the “positives and the negatives” of each option have been based on assuming the positives and negatives are equal in impact. What was not done was to assess whether a negative/positive in one option has less of an impact than the negative/positive in another option. This means that, in assessing each option, the negatives (even multiple negatives) in one option might have had only a minor impact compared to a major negative of another option. Thus, a weighting of the attributes of the positives and negatives needs to be implemented to identify the optimal option.

Renewable Energy Zones (REZs)

The MEU supports the concept of developing Renewable Energy Zones (REZs) but with this is a question of who pays and who takes the risk that the REZ will not be fully utilised.

The options paper provides some direction as to the mechanisms that might be used to develop the REZs, some even with the concept that the VRE generators might contribute to the cost of the transmission augmentations. What needs to be addressed is the fundamental question of “who pays”. The MEU accepts that ultimately consumers end up paying for the ability for VRE to get their product to market, but it is how this payment is made that is critical. If consumers pay “upfront” there is no driver for the VRE generators to optimise the costs of their locational decision. The MEU considers that to deliver the most efficient outcome for VRE location, is that the rules need to be modified to require “beneficiary pays” rather than “consumer pays”.

The discussion on the rule change proposal to have distributed energy resources (particularly PV rooftop solar) incurring a charge for exporting their product into the distribution network has some merit and the arguments used to support such a solution needs to be applied to VRE connecting to the transmission network⁷.

The options proposed for managing REZ development still assume that consumers will take primary responsibility for funding the augmentations leaving it up to VRE generators as to whether they will implement actions of their own as this might deliver a lower cost option for the VRE generator or even whether they will “join” the REZ or not. This places significant risk on consumers that the assets they fund might be under-utilised or even stranded, even if the VRE generators are required to pay a charge later.

So, while the MEU tends to support the principles behind the options proposed, it is concerned that the processes proposed to implement these tend to impose on consumers costs and risks they are not able to manage but which the VRE generators do have the ability to manage. The NEM rules are predicated on allocating the risks (and costs) to the party best able to manage the risk, yet this principle seems to have become lost in the development of the options.

What is also unclear is if there has been any assessment as to whether the proposed approach to REZ planning and congestion management has examined for any effect this might have on the RRO. It is pointed out that while retailers under the RRO must contract with providers, generators have the choice not to contract with retailers. The introduction of system access solutions and the provision of the LMP/FTR process will impact on generator’s decisions for location, ability to deliver the output contracted and the cost for providing this certainty. If generators are unsure as to what costs they might incur in the future due to the costs of gaining and holding access, then they will either not contract or will contract for RRO at prices sufficiently high they will not face the costs of future changes. The MEU considers that this is an issue that must be formally investigated in depth.

As noted above, VRE generators require some certainty of the costs they are likely to incur, the MEU has been a consistent supporter of generators paying a connection fee rather than any model that could result in future and unexpected costs being incurred or imposed on the VRE generators. This concern especially applies to the planned LMP/FTR approach proposed by the AEMC which the MEU has long opposed⁸.

Large project financeability

The MEU provided input to the AEMC financeability of rule change (for large, regulated transmission projects) and supported its proposal to implement a review of financing of large transmission projects. In its response the MEU to the rule change, the MEU indicated that the cost of Project EnergyConnect (PEC) rose by over 60% between the PADR level (the last time any stakeholder was formally able

⁷ See comments in section Integrating DER and flexible demand above.

⁸ The MEU supported the concept of the Optional Firm Access developed in 2015.

to provide input) and the final cost proposal at the contingent project application stage. The MEU pointed out to the AEMC that there was no competition to the proponents (ElectraNet and TransGrid) for the development of PEC and that if the total project had been available for competitive tendering (ie making them contestable) then the issue of financeability might not have arisen. The MEU supports a review of very large project delivery and of its financeability.

ESB posed questions

The MEU notes that the ESB has sought answers to many questions in its options paper. On reviewing the questions asked, it would appear that many, if not most, are more focused on answers that would lead to the further detail to start the refining process for the options posed in the paper.

While most of the questions are quite sensible as seeking information to develop the detail for development of the solution, the MEU has a concern that premature decisions might be made on the basis of the answers provided. There are a number of the questions that are posed that the MEU has responded to in earlier responses to ESB papers (eg REZs), to various AEMC rule changes and other papers (eg CoGaTI and Transmission Access Reform) and in forums held by the ESB and the AEMC. It would seem that many of the questions in the options Paper are a re-prosecution of these earlier papers and forums.

Summary of the MEU views expressed in this response:

Introductory comments and observations

- The MEU sees this Options Paper more as a collection of ideas for changing the National Electricity Market. There is discussion about the benefits and detriments for each idea on a qualitative basis but without identifying that there will be a net benefit to consumers as is required by the National Electricity Objective
- The MEU is concerned that introduction of more “out of market” services has the potential to erode the purpose of the market and trend back towards the determinative approaches used prior to the advent of the NEM
- Improving the reliability of supply in the wholesale market will increase costs considerably yet have a marginal impact as seen by consumers at the end of the supply chain which sees a much greater loss of supply caused within distribution networks.
- The market is responding to the changes in the generation mix, implying there is no need for change to the structure and the rules.
- Excessively conservative forecasts have led to an assumption that the reliability in the NEM is, and will be in the future, far worse than actually occurs. This has led to unnecessary government intervention.

- The market is working so let it be, including the market processes such as the Regulatory Investment Test

Resource adequacy and generator retirement

- Consumers generally are content with existing levels of reliability and do not want to pay more for improved reliability.
- Generally, the MEU supports the process for managing the exiting of large generators but does not support governments intervening by adding new generation that is not identified as needed by the market.
- MTPASA should be extended fully to 3 years to assist in information provision.
- However, the MEU is not convinced that the market is not managing the entry of new generation as it is needed.
- The current RRO is untested as to whether it will provide the planned outcome, but the indications are that it is leading to an appropriate response. Because of this the MEU considers that the current RRO should be included as the preferred option
- The MEU considers that the removal of the T-3 trigger in the modified RRO increases risks and does not enhance the existing RRO. If the modified RRO is introduced, it needs to be supported by fully extending MTPASA to a 3-year outlook.
- The PRRO is not supported and if introduced it would increase costs, complexity, risks, administration and require major changes to other elements of the market such as the reliability standard and the settings to ensure that increased costs do not get out of hand.

Essential services, scheduling and ahead mechanisms

- The proposal for managing system strength is likely to cause increased costs and risks for consumers, along with risks of under-utilisation or stranding of transmission assets.
- The Operating reserve is not supported as modelling demonstrates that it is not needed, and it will increase costs through reducing competition in other parts of the market and its costs could be higher than the Value of Customer Reliability
- The MEU agrees that if there is a clear need to enhance management of dispatch and supports the system security mechanism in preference to the unit commitment process on the basis that a market service is preferred to a contracting model with pass through of costs.

Integrating DER and flexible demand

- The MEU supports the greater integration of the demand side of the market but points out that demand response will always be peripheral to the activities of end users and so its provision will be limited to periods when most needed.
- Demand response mechanisms need to be simple and low risk for end users otherwise DR will not be provided.

- Consistency is needed between distribution and transmission networks as to what costs generation will incur to allow the export.

Transmission and access

- The MEU considers that the direct beneficiary of a transmission investment should pay for that investment.
- VRE generation needs stronger signals to locate closer to the shared network. To achieve this the rules need to impose on VRE generators the costs of connection to the shared network as part of their investment decision.
- VRE generation needs to have three requirements regarding its access – to know what costs it will incur before making an investment decision, to know they will have access as a result of their investment in the network and to have a tradeable right to the investment they pay for. Neither CoGaTI nor the Transmission Access Reform (LMP/FTR) model deliver these essential inputs
- Because of these, the MEU supports the connection fee approach as it meets the needs of VRE investors and limits the involvement of consumers.
- The MEU supports the concept of renewable energy zones but does not support that consumers should fund the transmission assets that serve the VRE at these locations.
- There has been no assessment as to whether there is an impact on the RRO of the decision on how to allocate access under the TAR for VRE generators
- Financeability of large generation projects has been raised as an issue, although the AEMC has addressed this in a recent rule change. However, what this rule change process has identified is that perhaps another solution is to require these large projects to be subject to constestability rather than being automatically awarded to regional TNSPs.

The MEU is happy to discuss the issues further with you if needed or if you feel that any expansion on the above comments is necessary. If so, please contact the undersigned at davidheadberry@bigpond.com or 0417 397 056

Yours faithfully

David Headberry
Public Officer

Appendix A

IN the text above, there are charts showing 10PoE and 90PoE demand forecasts and actual peak demands for NSW. The following charts show the same detail for Victoria.

