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Australian Energy Market Operator
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Sent by: email to ISP@aemo.com.au

Draft 2020 Integrated System Plan

Major Energy Users Inc (MEU) is pleased to provide its thoughts in response to the draft 2020 Integrated System Plan (ISP) released by AEMO. The MEU recognises the importance of the ISP as a tool for identifying transmission network needs to meet the growth of the NEM and the way new supply side options are added to the market and where these new assets and load are located.

The MEU was established by very large energy using firms to represent their interests in the energy markets. As most of the members are located regionally and are the largest employers in these regions, the MEU is required by its members to ensure that its views also accommodate the needs of their suppliers and employees in those regional areas. 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 (GMRG, ACCC, AEMO, AEMC, AER and regional regulators) and with governments.

The MEU points out that the views in this submission are those of end users of electricity and no attempt has been made to provide views that might be in the interests of other stakeholder groups.

The members of the MEU are very concerned about the high prices extant in the supply of electricity and about the reliability of this supply as both are essential elements to ensure that each member can continue to derive benefits from the very large investments they have made in their facilities and which have a high dependence on the supply of reliable but low cost electricity.

The MEU is a member of several the AEMO reference groups and as such has a reasonable understanding of the issues facing AEMO as it carries out its

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responsibilities for the gas and electricity markets and, specifically, how AEMO has gone about the development of the 2020 ISP.

Some general observations

As an overarching observation, the MEU recognises that the influx of many smaller generators into the NEM and the large proportion of intermittent generation in the overall mix, does lead to a conclusion that greater interconnection between the NEM states is an essential element of the overall NEM development. This greater interconnection should reflect the benefits of locational diversity to overall improve the reliability of supply to all end users while, at the same time, providing for a large proportion of lower cost generation to be connected and so drive down the price of electricity.

As a result, the MEU agrees with the AEMO conclusions that there is a need over the next few years for greater electricity transfer capacities between Queensland and NSW, between NSW and Snowy region, and between Victoria and NSW to accommodate this change in generation mix. Further, the MEU recognises that generation installed at the edges of the shared network (where renewable resources are greatest) does need to be able to readily connect to the shared network and so limit any constraints on their generation. The National Electricity Rules already recognise this and reflect that such generation has the responsibility to pay for its own connection. However, the ISP implies that these connection costs will be added to the Regulated Asset Base (RAB) of the transmission networks and the MEU does not consider consumers should be levied with costs that rightly belong to generators.

Whilst the MEU recognises that the change in the generation mix has resulted in new generation being added to the NEM much more quickly than in the past, the MEU points out that network assets have a long life (>40 years) while the new generation being added is seen to have a shorter life, an average possibly as short as ~25 years¹. This introduces a concerning dichotomy in that decisions to incorporate new generation have to reflect that the transmission assets allowing this to occur will still have many years remaining of technical life after the new generation has been retired – effectively these transmission assets will become stranded. So, the need for increasing the speed of providing new augmentation needs to be balanced against the reality that the network assets could still be a burden on consumers after the outputs from the new generation disappear.

The MEU recognises that AEMO has carried out a lot of work to develop the ISP, so much so, that it is challenging for stakeholders to be able to investigate every element of the information provided by AEMO and to readily accept its conclusions.

¹ For example, the MEU notes that AEMO assumes that Li-ion batteries have a life of perhaps 15 years “2019 forecasting and planning scenarios, inputs and assumptions” p41

Despite the significant amounts of information provided in the ISP and the conclusions reached by AEMO, the MEU has identified a number of shortcomings in the draft 2020 ISP and is not necessarily convinced of the size or timing proposed by AEMO for the proposed augmentations or if there is a business case to support the AEMO plans for each.

The MEU notes the ISP effectively reflects that the AER has approved the proposed connection between SA and NSW (the EnergyConnect project) and the VNI and QNI upgrades and VicWest project are about to be lodged with the AER for its approval. The ISP proposes as new projects the VNIWest project and HumeLink to enhance greater transfer capacity between NSW and Victoria and NSW and Snowy region.

The MEU considers that the proposed increased transfer capacity between Tasmania and Victoria to serve the proposed “Battery of the Nation” is more contentious and the MEU notes that AEMO is only recommending to develop Marinus Link to a point of “shovel ready” at this stage.

What is also important to note is that in total, ISP group 1 projects (ie ISP actionable projects and those already committed) will cost about \$6 Bn² to provide. As these group 1 projects are to be implemented over the next few years, it is appropriate to put their value into context, as the total RAB values for all transmission assets is perhaps \$21 Bn. So, the group 1 projects alone will increase the transmission RAB by ~30% (and perhaps as high as 50%) in a very short time frame³ and add considerably to the annual payments by consumers to TNSPs. This means that great care is necessary to ensure that the proposed augmentations are not only necessary, but there is a clear net benefit to the consumers that will pay for them.

The MEU considers there are a number of shortcomings in the draft 2020 ISP that need to be addressed so that consumers are satisfied the proposed projects provide the best outcome for consumers

The importance of an independent review

The purpose of making the ISP actionable is to institute a faster process for implementing apparently needed augmentation of the transmission network. As the MEU pointed out to the ESB in its response to the proposed “ISP rules”

“... moving to a faster process as implied by the draft decision, could [result] in considerable harm to consumers through overinvestment.”

² and potentially double this amount if all projects match their high cost estimates

³ The MEU remembers, only too well, a decade ago AEMO forecast significant increases in demand and consumption in the NEM. This forecast coupled with some governments arbitrarily increasing distribution network reliability standards led to a massive expansion in capacity of distribution networks which has subsequently resulted in significant underutilisation of assets, which consumers will pay for, for many years to come.

Speeding up the ISP process by excluding a review by the AER of ISP projects (as the draft ISP rules propose) imposes on AEMO an obligation to limit any potential error that could result in future under-utilisation (or even worse, stranding) of these new transmission assets.

At the very heart of the ISP is an assumption that consumers will bear the risk of the of the investments made under the ISP. As the new network investments will be added to the network RABs, consumers are expected to accept and ultimately pay for the augmentations proposed under the ISP yet the assumptions made about new supply side investments are not within the power of AEMO to enforce as the investments will be made by third parties. The risk for consumers is plain – they pay for the augmentations while AEMO hopes that the supply side will invest where, when and what in order to reflect the AEMO assumptions in the ISP. The MEU considers that when the costs of the augmentations are so high and so long lived, it is essential that there be some independent review of the AEMO inputs, assumptions and outcomes as an inappropriate outcome will be a continuing cost to consumers for decades.

The recent review of the EnergyConnect project by the AER shows the importance of the RIT-T process and an independent assessment of large capital projects.

In its review of the proposal, the AER highlighted two very salient issues with the proposal which were the critical inputs and assumptions related to:

-) SA gas plant usage and operation
-) System security requirements

In addition, the AER highlighted other aspects regarding the reasonableness of other key inputs and assumptions with regard to:

-) Plant operating parameters (especially of the three gas fired generators)
-) Gas plant retirements and entry of large-scale storage
-) Assumptions about fuel costs
-) Avoided transmission costs
-) Costing of the proposal
-) Terminal costing

The AER also observed that as a result of its questioning of the Project Assessment Completion Report (PACR), the project proponents needed to make a number of corrections to their model.

What is most important about the AER review is that, in addition to AER internal assessments of the proposal, the AER sought external advice as part of its review to assess the reasonableness of some inputs and assumptions. It is concerning that the AER, acting as an independent assessor of the project found a need to significantly reduce the likely benefits of the project; the impact of this benefit reduction was amplified by its assessment of the risk of errors in the capital costing approach used for the proposal. The impact of both of these was to highlight that the project might be a marginal investment rather than the strong one stated by the PACR.

There has been no independent review of the draft 2020 ISP to affirm (or otherwise) that the inputs and assumptions used by AEMO are appropriate or that the outcomes deliver an optimal approach for the consumers that will pay for them. The MEU sees that an independent review is an essential step on two counts:

1. As a matter of good practice, recognising that the output of the ISP will lead to new investment of > \$6 Bn (see comments above), AEMO should be seeking an independent review of its work, looking to establish if it has made any errors or misjudgements that would result in a change to its preferred development of the NEM transmission network.
2. The impact of the proposed investments under the ISP will impose considerable costs over the next 40+ years. As the ISP has the imprimatur of acceptance without any subsequent RIT-T assessment by the AER, not to carry out any independent assessment exposes consumers who will fund the increases to the regulated asset bases of the TNSPs to massive increases in the amounts they pay annually for the transmission network but not might get the benefits forecast.

The MEU considers that AEMO must not only take into consideration the outcomes and recommendations of past AER reviews (RIT-Ts) that have been undertaken of major investments in the NEM, but specifically consider the AER review of EnergyConnect.

Implicit in this MEU assessment, is AEMO should implement an independent review of its 2020 ISP development as well as future ISP developments.

There is information not provided

The developments of the costs and benefits of the various proposed transmission options are not clear and need some degree of independent verification.

Forecasting of future demand and consumption

The MEU has been an active member of the Forecasting Reference Group (FRG) and has been consistently critical of the degree of conservatism embedded in the AEMO forecasting process. While the MEU accepts that some conservatism is appropriate it has questioned apparent excessive conservatism that AEMO has applied to its forecasts. This conservatism applies to both forecasting demand and consumption, but also the timing and size impacts of potential changes in the supply chain mix and demand side participation.

There is no sensitivity testing to assess the impacts of excessively conservative forecasts within each scenario. With this in mind, the MEU considers that there needs to be some modelling to assess whether the optimal approach is still the best approach should the forecasts of future consumption, demand, generation mix/timing/size and DSP involvement prove to be conservative.

Capital costs of the proposals

The draft ISP (page 26) states that the capital costs have been:

“...refined in consultation with transmission network service providers (TNSPs) through joint planning and extensive power system engineering.”

The MEU points out that the capital costs range over more than +/- 30%. For example, the capital costs for VNIWest option 7 range from a low of \$1,300 m to a high of \$2,410 m which is nearly twice the low estimate. As the AER highlighted in its assessment of EnergyConnect, such a wide range of possible costs can throw doubt on the commercial viability of the project from a consumer point of view, especially where the estimated benefits are relatively low.

The MEU points out that the process for estimating the capital costs is not clear in the documentation and the assumption is that stakeholders will accept that AEMO and the TNSPs have prepared the costing to reflect the reality of these. What is absent is any independent assessment that the costs proposed are realistic and within acceptable margins of error.

Calculation of benefits

A critical element of the RIT-T process is clarity of the development of the benefits that an investment will deliver. As the AER found with the EnergyConnect project, the benefits can be overstated. This is even more important as there has never been an ex post review of the benefits calculated for any major network investment to demonstrate the forecast

benefits were actually being achieved. While the MEU accepts that once a commitment has been made for an augmentation, an ex post review will not change the specific development, but what an ex post review can do is to provide confidence (or otherwise) that the assessment of benefits was appropriate and if not, provide information and guidance to help refine future calculations of benefits.

For the 2020 ISP, there is a table of benefits (capex avoided, fuel cost saving, FOM, VOM, DSP, REZ) for the optimal solution under the various scenarios but there is no development of where these numbers come from or how they were calculated. Of particular concern are the amounts “saved” from fuel changes which are a significant element of the total benefits. The MEU comments that the AER decision on the EnergyConnect proposal raised serious concerns about such fuel cost savings and discounted the EnergyConnect benefits considerably as a result.

Further, there is no explanation as to what the benefits for alternative proposals were and where the cost/benefit of these alternative proposals sat in relation to the optimal approach. The MEU points out that perhaps these discarded proposals may have a lower capital cost and when assessed in relation to the risks to consumers, stakeholders might have a different view to AEMO as to which proposals result in the best outcome for consumers.

Least regrets approach

The draft ISP assesses some “least regrets” actions (appendix 5, section 5.5), (viz, no acceleration compared to a number of options which might benefit from acceleration) and concludes that at least VNIWest should be accelerated by a year and that perhaps Marinus should be made “shovel ready”, but not as an “actionable ISP project”.

While the table prepared valuing the “least regrets” provides some indication as to why AEMO has selected acceleration of certain projects, there is little clarity on the source of the costings, how they were calculated or what they reflect (eg the average of sensitivities calculated for each scenario, what weighting has been put on each calculation, etc). By not providing this information, stakeholders are unable to assess whether they agree with AEMO on the proposed outcomes of this assessment and so stakeholders are little better off than not having the “least regrets” table at all!

The table of “least regrets” excludes any assessment whether:

-) some delay in any of the projects might be appropriate. A “least regret” process must look at both sides, acceleration and delay. For example, a delay in a project might be the preferred outcome under the slow change scenario

-) staging of a project would be preferable noting that staging allows an ability to vary a project as inputs change. The MEU notes that AEMO has recognised the value of staging for the Marinus Project (ie to “shovel ready” stage) but the MEU considers that there are other projects where staging should be considered such as the Wagga to Yass element of the proposed HumeLink.

Generation mix

The MEU notes that the costing for various generation options is quite extensive and is in part provided by an external party. The draft ISP forecasts the generation mix in each state for each of the different scenarios but there is little information as where in each state the generation identified will locate, especially in relation to the various REZs – some REZs are better serviced by the optimal approach but not others. There is little information which provides substantiation for the generation mix identified.

The MEU points out that there is an inherent assumption that the optimal approach will deliver the best outcome for consumers whereas the decision to invest in new generation is made by individual firms which decide on the location that best meets their needs, what the competition is doing, the size and type of each generation option and when the generation will be brought into service. These decisions have a major impact on the cost of each generation option and therefore the size and location of the transmission assets to determine the optimal approach.

Despite this, AEMO has made assumptions as to when, where and how much this new generation will occur for each scenario. There is no sensitivity analysis provided regarding these decisions.

The draft ISP provides a map with the “best” locations for different types of renewable generation and depicts them as renewable energy zones (REZ). The MEU has a view that while agreeing with AEMO on the location of these, there is no certainty that the zones will be used by investors for new generation, that the zones will be used to their maximum potential, the “capacity” of each and when this “capacity” might be achieved. The AEMO assumptions will have a major bearing on the final “optimal approach” but there is no clarity on how AEMO reached its conclusions and made its assumptions for each REZ.

Cost allocation

There is little doubt that the costs of the actionable ISP projects will be a cost to consumers as the capital invested by the TNSPs in the project implementation will be added to the RAB of each TNSP.

What the draft ISP highlights is that there will be a considerable benefit provided to many generators as a result of the actionable ISP projects as the location of the REZs has had a considerable influence on the development of these actionable ISP projects.

Already the MEU has seen that the VicWest project (included as a group 1 project in the 2018 ISP and now a committed project in the 2020 ISP) is essentially a project to allow generators in northwest Victoria access to the shared network – this project has had its RIT-T process completed and if approved by the AER the costs will be added to the RAB of the Victorian TNSP. Implicit in the rules is that generators should be responsible for their own connections to the shared network, yet the actionable ISP projects are more about enabling generators get a better access to the shared network at consumer expense than it is about providing a direct benefit for consumers.

AEMO have stated that they are required to look at the market benefits for their augmentation options and that the issue of cost allocation is an issue for the AEMC which, amongst other things, is looking to its Coordination of Generation and Transmission Infrastructure (CoGaTI) program to address this concern⁴. The MEU disagrees with AEMO that the AEMC CoGaTI program as structured will address this concern as consumers will get no relief where consumers have already funded an augmentation.

In this regard, the Marinus project provides the clearest example of the MEU concern. Victorian and Tasmanian consumers do not see value in increased interconnection between Tasmania and Victoria as both states are provided with adequate sources of generation. In contrast, generators in Tasmania will see significant benefit from access to a “free” interconnection with the mainland as this will provide a source of new business for them.

The MEU is of the view that the draft ISP should explain in much more detail who are the direct beneficiaries⁵ (generators or consumers) of the proposed augmentations rather than leaving the issue unaddressed.

Consultation process in the future

The MEU notes that the proposed changes to the Electricity Law and Rules will embed the ISP as having a higher value than the preceding National Transmission Network planning role AEMO had in that the ISP will be given an imprimatur that its

⁴ For example, in the AEMC Consultation Paper for the CoGaTI program, the AEMC states (page (i)) “*Building transmission to benefit generators means that generators should pay for this transmission investment.*”

⁵ The MEU accepts that ultimately generators will add the cost of the augmentation to their bills so consumers will ultimately pay, but passing the cost to generators will influence generator locational choices and so result in an overall lower cost to consumers

outcomes will not require a review by the AER which applies to all other augmentations under the RIT-T process.

The MEU points out that the current AEMO stakeholder consultation processes lie very much at the “inform” level of the IAP2 engagement spectrum, as in its various forums AEMO selects most if not all topics for discussion and allows little time for stakeholders to comment on and debate the issues. Equally, the MEU does consider that AEMO devotes considerable resources into preparing presentations on the topics it wants to discuss and providing the forums for these presentations to stakeholders.

In the future, the MEU considers that AEMO must dramatically change its approach to stakeholder engagement in the ISP development process. In particular, the MEU points out that:

-) most stakeholders, especially consumer representatives, have very limited resources to be able to provide the engagement needed⁶ to ensure confidence in consumers there is little doubt that the ISP has delivered the very best outcome “in the long-term interests of consumers”
-) there must be sufficient time to enable debate on issues
-) AEMO must ensure that those stakeholders involved in the engagement process are knowledgeable and can provide informed input to the deliberations
-) AEMO must be more responsive to stakeholder input than it currently shows by demonstrating how they have listened and acted in stakeholder input

With this in mind, the MEU considers that AEMO has to develop a consumer engagement process that not only addresses the reality that consumer resources for engagement in the ISP process are very limited, but implements a plan to enable deep and meaningful involvement of consumers who are sufficiently knowledgeable for be able to make informed judgements in the ISP process.

Conclusions

There is no doubt that the draft ISP is a document with significant amounts of information and the AEMO team that developed it should be congratulated on doing as much as they have.

However, the documentation is deficient in a number of aspects when seen as a proposal to commit very large amounts of money which consumers will have to pay

⁶ Noting that the ISP will have little or no formal evaluation (such as that provided by the AER under the RIT-T process) other than through stakeholder engagement

back to the TNSPs over the next 40+ years. With this in mind, the MEU considers that further work is needed on the document as noted in the different sections above and for the outcomes of this additional work to be detailed clearly so that consumers can be assured that there is a clear benefit to those that will fund the augmentations.

In particular, the MEU considers that there needs to independent oversight of the selection of the optimal approach and of the costs and benefits that come from the optimal approach.

While too late for the 2020 ISP, AEMO must immediately commence development of a stakeholder engagement process which will ensure that future ISPs will have, and be seen to have, detailed and appropriate stakeholder engagement at each stage so that consumers more widely can be confident that the outcome has “the long term interest of consumers” at its very core.

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

Yours faithfully

A handwritten signature in black ink, appearing to read "David Headberry". The signature is written in a cursive style with a long horizontal stroke at the end.

David Headberry
Public Officer