

25 November 2016

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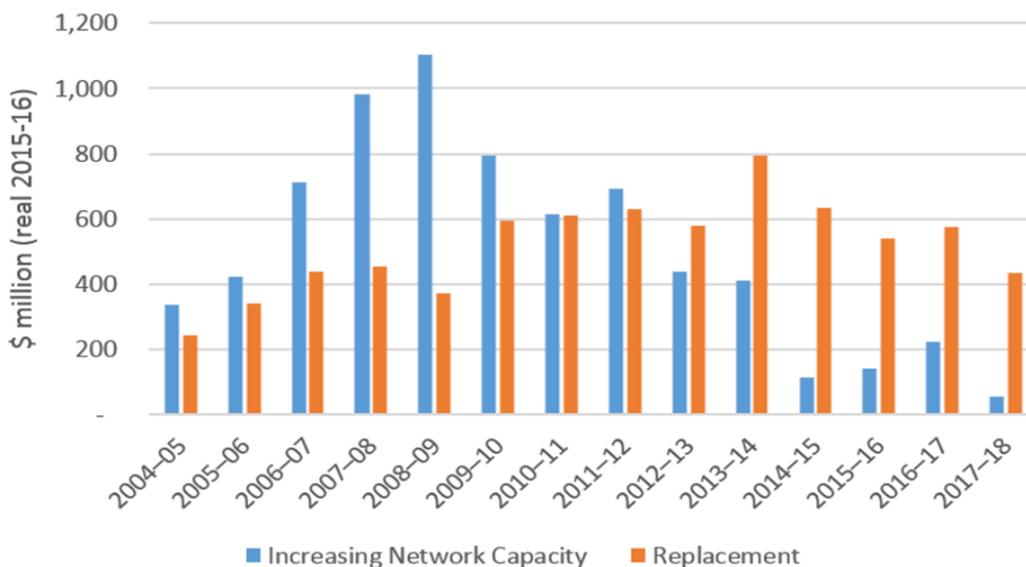
Dear Mr Pierce

### Replacement expenditure rule change

Thank you for the opportunity to provide comments on the replacement expenditure rule change consultation paper. AEMO has a close interest in these issues as a result of our National Transmission Planner role and our Victorian declared network functions.

The economic regulation arrangements in the National Electricity Rules are currently designed to give much greater scrutiny to augmentation expenditure than replacement expenditure (replex). These arrangements have become outdated as a result of changing network investment requirements. Figure 1 shows how replacement expenditure accounts for an increasing share of overall network capex as demand growth has slowed. Going forward, we expect low levels of augmentation expenditure to continue. Where augmentation is required, it is likely to be to reinforce specific regional requirements driven by changing location of generation and changing patterns of demand. Overall growth predictions are low, suggesting that when augmentation is required in one area this is offset by lower network requirements in other areas.

**Figure 1 NEM transmission capex, augmentation vs replacement**



Source: AER, AEMO analysis

In addition, opportunities for credible alternatives to like for like replacement are increasing due to emerging technologies, changing demand patterns and more active consumer behaviour.

These changes give rise to a strong case in favour of reforms which make the network businesses' replacement expenditure decisions more transparent and focussed on future needs. Accordingly, AEMO supports the AER's rule change proposal.

Attachment 1 sets out our response to the questions raised in the consultation paper. In particular, we address the issues that arise in Victorian transmission, where the TNSP role is split between AEMO, as the transmission planner and procurer, and the relevant declared transmission system operator (DTSO) (primarily AusNet Services). Our submission proposes a way forward that aligns with the existing allocation of roles between ourselves and the relevant DTSO.

We hope that you find these comments helpful. We would welcome the opportunity to work with the AEMC to ensure that Australia's future energy needs are met in an efficient manner. If you would like to discuss any of the issues raised, please contact Jess Hunt on 08 8201 7315.

Yours sincerely,



David Swift  
**Executive General Manager, Corporate Development**

## Attachment 1 – Answers to consultation questions

### Question 1

- a) Are non-network solutions a viable alternative to replacing network assets on a like-for-like basis?
- b) How does this differ from the potential for a non-network solution to provide a viable alternative to augmenting the network?

The case for replacing assets which have reached the end of their useful life is relatively straightforward in circumstances where demand inexorably rises. In an uncertain demand environment, however, it may not be necessary to replace assets on a like for like basis.

There may be scope to replace network assets with a cheaper alternative, or to utilise operational solutions or rely on a non-network option instead.

There is no intrinsic difference between network assets built in order to meet an augmentation need and network assets built in order to replace an existing asset. Changing demand patterns mean that there is no reason to treat augex differently to repex. There should be no automatic presumption that an asset that is reaching the end of its life continues to be required in its current form into the future.

We acknowledge that in some cases, ageing network assets are deeply embedded within the network and there is no viable alternative to replacing the asset on a like for like basis. We agree that it is appropriate to exempt replacement projects from regulatory investment test provisions in these circumstances, so long as there is a rigorous and transparent process for determining which projects are exempted.

### Question 2

- a) Are the current annual planning reporting requirements in the NER relevant and likely to be useful for replacement expenditure?
- b) If any, where are the gaps in the current annual planning reporting requirements in the NER for replacement expenditure?

Proponents of non-network options require significant lead times to develop robust and fully formed proposals that meet the system security and reliability standards required by network businesses. By the time the network business initiates a regulatory investment test process, it is often too late to undertake the necessary groundwork required to develop a non-network option.

Annual Planning Reports (APRs) have a key role in disseminating transparent and timely information about upcoming investment opportunities. Together, the APR and RIT are intended to provide interested parties a continuum of information over time on future network investment needs. In the absence of such information, innovative alternatives to network investment are unlikely to emerge. At present, the APRs published by NSPs have a mixed record in terms of making relevant information available on a timely basis. NSPs have interpreted their obligations in a range of different ways, and the information published often lacks the practical details required in order for commercial parties to seriously pursue non-network options.

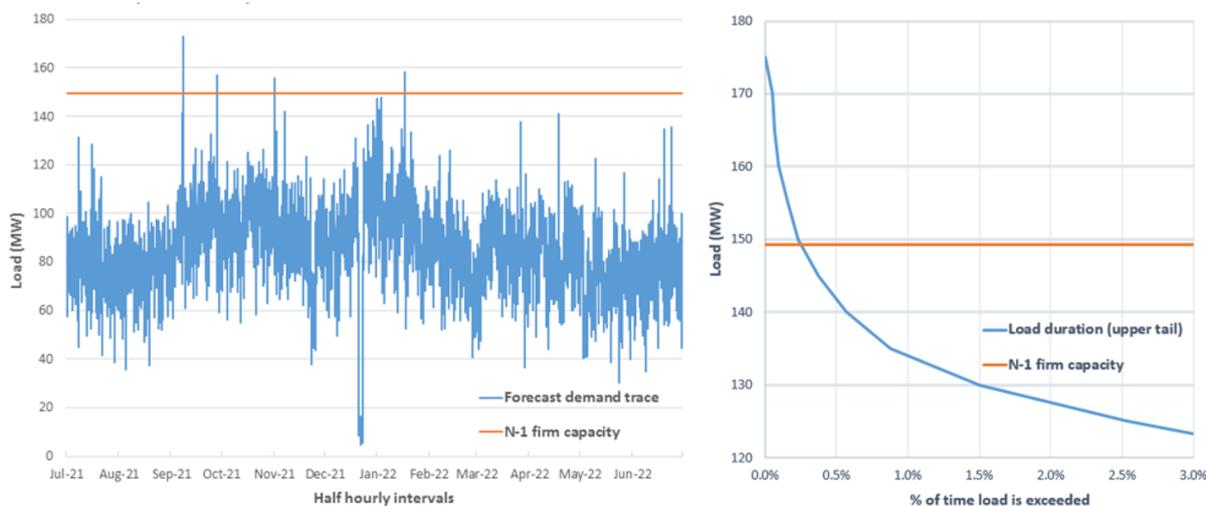
At present, APRs must include the following information for proposed asset replacements:

- a description of the project, including location, purpose and timing
- any alternative network options or non-network options under consideration, and
- the estimated capital cost of the project.<sup>1</sup>

This information is helpful but insufficient for the purposes of a potential investor in a non-network option. For instance, in order to be able to form a view on the scope for alternatives to network investment, the following additional information is required:

- A forecast demand trace - or summary statistics such as a duration curve - that sets out the expected frequency and duration of systems limitations (see Figure 2). For proponents of non-network options such as a demand management service provider, this information is key to assessing the likely costs of meeting the system limitation.
- The composition of load within the part of the network affected by the constraint. This information is likely to have major implications for the potential solutions available. For instance, an embedded generation solution might be more feasible in a predominantly commercial feeder where peak demand tends to occur in the middle of the day.
- Required response times. Network businesses may have flexibility within their reliability obligations to meet a standard within a specified timeframe. For instance, South Australian transmission reliability standards are defined on an “N equivalent” basis – the TNSP might be obliged to ensure that the reliability standard at a given connection point meets N-1 standard within an hour.<sup>2</sup> The non-network option needs to be capable of meeting the required standard, taking into account any other relevant aspects of the network’s capability.

**Figure 2 Example of a demand trace and a load duration curve**



It is likely that there are other examples not listed here. AEMO supports increased transparency around network asset retirement and derating decisions, and the AER’s

<sup>1</sup> NER 5.12.2(c)(7) and NER Schedule 5.8(g).

<sup>2</sup> ESCOSA, Electricity Transmission Code Review - Final decision, September 2016.

proposal to develop a guideline setting out how NSPs report on these decisions in their APRs (see our response to Question 7 below).

**Question 5**

- a) Is it appropriate that the scope of the new reporting requirements include planned asset de-ratings as well as planned retirements?
- b) To what extent does this add to the administrative burden for NSPs?

Yes, on grounds that planned asset de-ratings affect the capability of the network. This information is relevant to a range of stakeholders including potential connection applicants and proponents of non-network options. Additional transparency also promotes accountability and robust decision making.

If the de-rating does not create an investment need then the associated reporting should not be as detailed as for proposed investments. This information could take the form of a table included as an attachment to the APR. We would expect the network businesses to have this information already. Accordingly, we consider that the administrative burden associated with this requirement is not disproportionate to the potential costs of inefficient replacements.

**Question 6**

- a) Should all assets be reported on by NSPs in their annual planning report or are only certain asset types relevant?
- b) What types of asset should be subject to reporting requirements by NSPs and what should not?

Replacement and renewal works can be divided into single site-specific projects and programs of work occurring over multiple sites. Single site-specific projects relating to primary network assets (substations and lines) should be reported on by NSPs in their APRs. AEMO analysis has indicated that such work comprises over 60 percent of the total cost of TNSPs proposed replacement and renewal programs.

There may be certain types of assets which do not have ready substitutes at this time. For instance, certain types of SCADA, protection and control infrastructure needs to be interoperable with existing infrastructure. Work over multiple sites involving blanket replacement of equipment of a similar age across the network (e.g. substation battery replacement programs) can be to address duty of care or safety drivers (e.g. fire protection upgrades) and may not have a range of materially different alternative options. There is also a need for a materiality threshold to avoid a disproportionate administrative burden.

However, in a dynamic technological environment these considerations may change over time. Accordingly we support a dynamic framework that can evolve as circumstance change.

**Question 7**

- a) Is the proposed AER network retirement reporting guideline the appropriate means of requiring NSPs to report on certain asset types and not others or would an alternative mechanism be more appropriate?
- b) If an AER guideline is appropriate, what should it contain and how should the AER be guided in its development?
- c) In addition, what would be the appropriate process to make and review an AER guideline?

As demonstrated by the existing Rules provisions relating to APRs, there is a risk that a prescriptive list of information requirements will become out of date. Giving the AER discretion to develop a guidelines, and make adjustments over time, will help to future-proof the framework in a changing technological landscape.

We support the AER's proposal for the factors it should take into account in developing the guideline, namely:

- the ability of the network business to provide the information on a network asset type in the APR and whether the costs of providing this information is greater than the likely benefits of the information being published in the APR
- whether a decision to retire a particular network asset type would be made individually or as part of a broader asset replacement program
- for a particular network asset type, whether there are likely to be alternatives to like for like replacement
- the principles of prudence and efficiency and the substitution possibilities between operating and capital expenditure
- differences between transmission and distribution.

The decision to de-rate or retire an asset should not be independent of the broader needs of the transmission or distribution system including the decision to replace an asset. Rather, network retirement decisions should consider the impact on the network, and all options available (and associated costs and timing) to meet any ongoing network needs. In some cases, it may be efficient to rely on an ageing asset (through ongoing maintenance and refurbishment), in combination with arrangements to maintain supply in the event the asset fails, until such time it is more economical to replace it.

The Rules consultation procedures set out an appropriate process for developing and amending the guideline. This process is already applied by the AER and AEMO in relation to a range of instruments.

**Question 10**

Will extending the regulatory investment tests to replacement capital expenditure benefit energy market stakeholders, including non-network service providers, network service providers and the AER, and why?

We note that the key test is whether or not the proposed changes meet the National Electricity Objective (NEO). We believe that the NEO is met because the current regulatory

framework, which focusses on augex, is no longer fit for purpose in an environment where other forms of expenditure comprise the large majority of network capex.

The case for replacing assets which have reached the end of their useful life is relatively straightforward in circumstances where demand inexorably rises. In an uncertain demand environment, however, it may not be necessary to replace assets on a like for like basis. It may be possible to replace the old asset with something smaller or with a non-network option.

In addition, opportunities for credible alternatives to like for like replacement are increasing due to emerging technologies, changing demand patterns and more active consumer behaviour. Compared to traditional solutions involving the construction and ongoing maintenance of long-lived network assets, non-network alternatives are increasingly able to be implemented more quickly, and adjusted incrementally, in response to changing demand conditions. Cost-effective solutions (such as control and protection schemes, demand-side participation, and generation support) may also provide greater flexibility in network operation.

There would be benefits associated with reforms which make the network businesses' replacement expenditure decisions more transparent and focussed on future needs. Extending the regulatory investment test to repex promotes the long term interests of consumers by ensuring that these investments are subject to a robust decision making framework that includes consideration of efficient non-network options.

Question 11

Should the regulatory investment tests also apply to maintenance and refurbishment expenditure or should these categories of expenditure continue to be exempt from the tests?

The regulatory investment tests are designed to apply to large capital projects and it is not clear that this process would be beneficial in all circumstances. It is also not clear how the costs associated some types of network expenditure would be treated for the purposes of the regulatory investment test, for instance a large number of small projects within a renewal or replacement program across multiple sites

That said, if a project meets the cost threshold, and there are viable alternatives to the project, then the network business should undergo a cost benefit analysis to determine the most efficient solution. We note that there are a range of exclusions that limit the network businesses' obligation to undertake a RIT under the current framework. These exclusions would apply to replacement expenditure projects.

Question 12

Should the cost thresholds for asset replacement projects be the same as cost thresholds for network augmentation projects?

Yes. It may also be necessary to draft the definitions in a way that ensures that NSPs do not split projects into smaller chunks in order to fall below the RIT cost threshold.

Question 13

Is it appropriate for a regulatory investment test to not be required where an NSP considers a like-for-like replacement of the asset is the only option to address the problem?

Question 14

- a) Is the proposed requirement for NSPs to publish an exemption report where there is no alternative to like-for-like replacement appropriate?
- b) Do the benefits of this mechanism outweigh the administrative costs that it may impose?
- c) Is there an alternative mechanism which would be more appropriate?

It is appropriate to exempt NSPs from the obligation to undertake a RIT if there is no alternative to a like-for-like investment, so long as there is a rigorous and transparent process associated with the decision. The requirement to publish a preliminary exemption report is a reasonable solution. We agree that third parties should have the opportunity to query the NSP's decision if they consider that there is an alternative option.

Networks should be obliged to report in their APRs on whether a proposed investment is likely to be exempted from the obligation to conduct a RIT-T or RIT-D. This approach would give stakeholders that disagree with the NSPs' assessment enough time to raise questions with the NSP or, if necessary, raise a dispute.

Question 15

- a) What information should NSPs be required to provide in an exemption report?
- b) Is it appropriate that an NSP has to provide a summary of an exemption report to AEMO within five business days and to interested parties, on request, within three business days?
- c) Do stakeholders agree that AEMO must publish the exemption report on its website within three business days?

Question 16

- a) Is it appropriate that parties can raise a formal dispute with the AER on the conclusions of an exemption report published by an NSP?
- b) Is 30 business days, as proposed, the appropriate timeframe for allowing interested parties to raise a dispute with the AER?
- c) Is 31 business days after publication of an exemption report the appropriate timeframe for an NSP to wait to undertake a like-for-like replacement where no dispute is raised?
- d) If an exemption report is determined by the AER to be non-compliant, should the NER explicitly exclude an NSP from being relying on the report to carry out a like-for-like replacement?

We support the AER's proposal that the exemption report should

- largely mirror the information requirements for the preliminary consultation reports required under the RIT-T or RIT-D, and

- outline the identified need and explain why the NSP considers that there are no viable alternative options to like-for-like replacement.

We agree that the proposed timeframes and process for publishing and raising a dispute with respect to an NSP's exemption report are appropriate. They are consistent with the provisions that apply to other RIT-T and RIT-D documents.

Question 17

- a) Would AEMO or AusNet Services be the most appropriate body to report on the proposed additional annual reporting requirements at the transmission level in Victoria and why?
- b) Would AEMO or AusNet Services be the most appropriate body to apply the RIT-T for replacement expenditure in Victoria and why?

The rule change proposal raises particular issues in Victorian transmission, where the TNSP role is split between AEMO and the relevant DTSO.

AusNet Services owns and maintains the majority of the declared shared transmission network in Victoria. In its capacity as Victorian transmission planner, AEMO is responsible for planning and procuring new transmission capacity and for connecting generators and customers to the declared shared transmission network – this includes augmentation RIT-Ts. These obligations are as required under Section 50C (1) of National Electricity Law (NEL) and Chapter 5 of the NER. AEMO and AusNet are also party to an existing Network Agreement for the provision of electricity network services for the performance of AEMO's declared network functions.

Based on the allocation of roles within the current framework, AEMO considers that AusNet is best placed to determine when and which assets may need to be replaced. Accordingly, we propose that AusNet is responsible for both the additional reporting requirements and for conducting the repex RIT-Ts.

However, there is a role for AEMO in reviewing AusNet's or any other DTSO's proposals to ensure that they are consistent with AEMO's long term plans for the declared shared transmission network. AEMO already provides advice to AusNet on whether details of their proposed renewal projects (e.g. plan ratings, station layouts) are consistent with AEMO's long term plans. AEMO would also have a role in advising AusNet with respect to ongoing transmission network needs.

Our proposed allocation of roles is designed to ensure that the new functions reside with the party best placed to do the job. If AusNet becomes responsible for repex RIT-Ts, it will be important to ensure that arrangements are in place to maintain a co-ordinated approach to Victorian transmission planning. AEMO and AusNet are working together to consider how the proposed Rule could apply in practice.

Question 18

- a) Are the additional changes proposed by the AER appropriate and useful to stakeholders?
- b) What compliance burden would arise for NSPs?
- c) As these requirements currently apply in a limited way in the NER, how useful have they been to date?

The additional changes proposed by the AER are:

- NSPs must notify any affected registered participants and AEMO of any limitations arising from planned asset retirements or de-ratings;
- TNSPs must provide information on their asset management approach in their APRs; and
- When there has been a material change in circumstances since the publication of a project assessment conclusions report and the preferred option is no longer the preferred option, TNSPs must reapply the RIT-T before proceeding with the preferred option identified in the RIT-T unless otherwise determined by the AER.

We agree with the proposal that NSPs must notify any affected registered participants and AEMO of any limitations arising from planned asset retirements or de-ratings. As the NSP will conduct this analysis as part of its retirement or de-rating decision, the additional compliance burden is unlikely to be large.

Consistent with the approach outlined in our response to Question 17, the obligation on TNSPs to provide information on their asset management approach in their APRs would lie with AusNet Services in Victoria.

Finally, we agree that when there has been a material change in circumstances since the publication of a project assessment conclusions report and the preferred option is no longer the most efficient option, then it is desirable that the TNSPs reconsiders their approach.

However, given the long lead times associated with the RIT-T process, there is a risk that if the TNSP is required to start again at the beginning, changing circumstances may mean that it becomes very difficult for the TNSP to finalise its decision. We therefore propose that the TNSP is only required to repeat those elements of the RIT-T process which are materially affected by the change in circumstance. For instance, if the change in circumstance means that the only material impact is that a previously considered option becomes the preferred option, then the TNSP should not need to repeat the preliminary stages of the RIT-T process.

Question 19

What transitional arrangements should be put in place to allow NSPs and the AER to be able to comply with the proposed rule if it were to be made?

If the AEMC makes its final rule change determination in mid-2017, then the requirements relating to APRs could take effect for the following round of APRs in 2018.

Similarly, the Rules relating to repex RIT-Ts could apply to investment decisions made after 30 June 2018. In this case, NSPs may decide to initiate their RIT-T processes before 30 June 2018.