AusNet Transmission Group Pty Ltd

Transmission Revenue Review 2017-2022

Appendix 3A: Stakeholder Engagement Forums – Summaries

Submitted: 30 October 2015

First Stakeholder Forum Summary

Transmission Revenue Reset 2017-22

26 March 2015

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1. Overview and Summary

The first stakeholder forum for AusNet Services' 2017 Transmission Revenue Reset was held on 26 March 2015. This document summarises the session through capturing the questions and answers and the feedback received. Some answers documented here include additional information to that provided at the session.

The slide pack presented at the session is attached.

Forum objective

The purpose of this forum was to outline the context for developing the revenue proposal and allow stakeholders an early opportunity to provide feedback on some specific topics. This was designed to meet the overarching objective of TRR stakeholder engagement which is to:

> *Aligning the revenue proposal with consumer preferences where possible. Ensure consumers understand how their preferences are reflected in the revenue proposal (including through the VCR) and, where this has not been possible, why this is the case.*

Session Overview

A brief overview of the session's content is below. The attached slide pack and speaking notes provide more details on this.

- **Welcome and introduction –** Alistair Parker, General Manager Asset Management, opened the forum with a discussion on safety and introduced key attendees from AusNet Services, AEMO and the independent regulatory expert.
- **Who we are and what we do** – this covered the key activities of AusNet Services and the distinction between the responsibilities of AEMO and AusNet Services in relation to Victoria's transmission network.
- **Stakeholder engagement –** this covered how AusNet Services has responded to feedback provided in the previous TRR and our approach to stakeholder engagement in the current TRR.
- **Benchmarking –** a number of benchmarking metrics were presented, both at the category (or partial productivity) level and the overall Total Factor Productivity level. The sensitivity of results to the AER's preferred Total Factor Productivity model specification was shown.
- **Drivers of change –** major exogenous changes impacting the development of the revenue proposal were outlined. These include lower demand forecasts, the change in the Value of Customer Reliability and lower interest rates.
- **Responding to change –** the ways in which these changes affect forecast capex were described. These include the role of the VCR and demand forecasts in the economic justification of projects. The initial expenditure forecasts (capex and opex) were presented.
- **Consultation on key issues –** the following issues currently being considered by AusNet Services were discussed:
  - a proposed opex step change for condition monitoring of conductors; and
  - accelerated depreciation.
- **Close –** Tom Hallam, Manager Economic Regulation, closed the forum and set out the next steps of the TRR engagement process.

Attendees

This was attended by 16 stakeholders from the following organisations:

- AEMO
- Jemena
- Alternative Technologies Association (ATA)
- Uniting Care
- Origin Energy
- GDF Suez
- AGL
- ElectraNet
- Energy Australia
- Energy Safe Victoria (ESV)
- Consumer Challenge Panel

An independent regulatory expert was also present to facilitate discussion.

2. Summary of Discussion

A summary of the questions asked during each section of the forum and responses to these is provided below.

2.1 Who we are and what we do

Q1. Please provide further clarification of the differences in the roles of AusNet Services and AEMO.

AEMO's responsibilities relating to Victorian transmission include:

- Planning and competitively procuring augmentation (i.e. increases in capacity) of the shared network;
- Administering transmission pricing

AusNet Services is responsible for:

- Owning, operating and maintaining the shared transmission network; and
- Planning asset replacements.

The Victorian transmission arrangements are unique in the National Electricity Market. They impact AusNet Services' revenue proposal in the following ways:

- It will not include forecast capex required for network growth.
- AEMO provides the scopes of the projects included in AusNet Services' Network Capability Parameter Action Plan (NCIPAP) and estimates the net benefits of these.

Q2. Do the TRR stakeholder engagement activities cover the plans of both organisations, or does it focus on AusNet Services?

While the TRR stakeholder engagement activities focus on the development of AusNet Services' revenue proposal, we are aware that stakeholders are interested in plans for Victoria's transmission network as a whole.

For this reason, AEMO staff are here today and plan to attend our future TRR stakeholder forums. AusNet Services also participates in consultation processes undertaken by AEMO. Where stakeholders require further clarity on the distinct roles of AEMO and AusNet Services we can provide this.

2.2 Benchmarking

Q1. Which types of customers are included in the customer numbers used in the benchmarking metrics presented?

All end-user electricity consumers are included in the customer numbers used in the transmission benchmarking metrics. Therefore these comprise all customers of the distribution networks, plus customers directly connected to the transmission network.

Q2. Do differences in the scope of services provided by different transmission networks influence Total Factor Productivity outcomes?

The split in responsibilities for the transmission network in Victoria do not impact the Total Factor Productivity results in so much as the physicals (line length, capacity, energy delivered, etc.) are for all of Victoria. However, AusNet Services performance does not include AEMO's costs for planning and procuring augmentation (opex and capex) but these would be unlikely to be material.

Q3. Are the results for the opex (partial productivity) measures affected by the different operating environments of the networks, such as the differences in terrain?

Slide 15 (see attached slide pack) includes a number of opex benchmarks, normalised by customer density and line length. These normalisers control for the differences between networks in relation to customer density and size of network and it is evident that AusNet Services performs strongly regardless of the choice of normaliser.

However differences in the terrain covered by the networks is a valid environmental factor which should be taken into account in interpreting the productivity results.

Q4. Which TFP model have we used to present our results and why?

The TFP results presented in the slides use the AER's preferred model specification. This is the model developed and applied by the AER.

In addition, sensitivity analysis has been carried out and the transmission networks' rankings under alternative model specifications are set out on slide 21. This shows that the benchmarking results are extremely sensitive to model specification, reflecting the relative immaturity of total factor productivity benchmarking of transmission networks in Australia.

Q5. Has AusNet Services built an internal TFP model to test the opex and capex forecasts?

We have not developed an internal TFP model, and plan to apply the AER's model to test our expenditure forecasts.

Q6. Why does AusNet Services perform strongly on the partial productivity measures but less well in TFP?

AusNet Services performs strongly across a range of partial productivity measures, but ranks third out of the five transmission networks in the NEM for overall MTFP in the AER's preferred model specification. This highlights the need to continue testing the AER's preferred TFP model specification, which is in its infancy. We look forward to working further with the AER on this issue.

While it is difficult to draw conclusions from the networks' TFP rankings, AusNet Services considers that the model provides useful insights into the change in networks' productivity over time. AusNet Services is the only network exhibiting an improving productivity trend over the period.

Q7. Do you have any concerns over the quality of the RIN data used in the AER's benchmarking models?

Because historic data was required in the RINs, best estimates were required to be made by networks to provide the data in a timely manner. However our systems are not designed to capture particular asset or cost data according to RIN requirements so there is still progress to be made to get our reporting to be provide as accurate data as possible. We also hope that over time there will be greater consistency of the data across networks.

Q8. Have you considered the use of international data for benchmarking?

We would support the use of international comparators in the benchmarking analysis where it is for comparable firms and used appropriately. This would require comparable data sets to be available and it this is a challenge for transmission networks given their size and nature.

2.2 Responding to Change

Q1. How far ahead do you plan major stations capex projects?

AusNet Services has a 10 year plan for major stations rebuilds. However, the exact timing of planned projects will be refined closer to the rebuild timing. Latest demand forecasts and the timing of other asset replacement projects will be considered when commencing a rebuild.

Q2. At what point in a project's development can it be delayed?

A major stations project can be delayed at any point before it has progressed to detailed design stage without incurring significant costs. Detailed design typically takes a year and is immediately followed by the construction phase. Long lead time items such as power transformers are often ordered during the design phase so, if a project were to be delayed during the design phase, there are sunk costs associated with both the design and equipment.

However, developments that may affect the economic timing of a project can be efficiently taken into account at any point before construction commences. For example, a large amount of planning and design work has been undertaken for the WMTS rebuild, but recent changes to demand forecasts and the Value of Customer Reliability have indicated that it is not efficient to progress with WMTS under the previous timeframes, despite the costs incurred to date. AusNet Services has quickly responded to these changes which will lower future transmission prices for customers.

Q3. How does the Value of Customer Reliability used by AusNet Services compare to the values used by other TNSPs in the Regulatory Investment Test for Transmission (RIT-T)?

AusNet Services incorporates the latest VCR independently estimated by AEMO in its replacement capex plans.

However, other VCR estimates have been applied in the past. Before the 2014 VCR update, AusNet Services applied the Victorian VCR estimated by VenCorp, AEMO's predecessor, in 2008. The AEMC also estimated a VCR for NSW in 2012. This was a significantly higher value than the VenCorp VCR. Historically, these values have been taken into account by TNSPs in assessing proposed capex plans.

Both the Vencorp based VCR and the AEMC's 2012 value are materially higher than the latest AEMO VCR value that has been applied by AusNet Services to its current plans.

Q4. Is there a risk that the major projects planned for the 2017-22 regulatory period will be deferred?

AusNet Services' capex program is refined over time to reflect emerging priorities, including changes in asset condition. Therefore some planned projects may be deferred and others accelerated to efficiently address network priorities.

This is consistent with the way that the regulatory framework operates. The AER's determines the efficient aggregate capex allowance, rather than an allowance for each individual project. While the allowance is often set with regard to an aggregation of specific project allowances, this does not mean that networks are required to spend this capex on these specific projects.

Q5. Is overall network risk increasing due to capex deferrals?

Deferring replacement capex as a result of the fall in the Value of Customer Reliability and demand forecasts will increase the average lives of AusNet Services' assets. On average, older assets have an increased risk of failure. Therefore overall network risk is expected to increase as a result of capex deferrals.

This is an efficient outcome given the fall in the Value of Customer Reliability, which indicates that customers are willing to pay less for the reliability than has been provided in the past. This implies that customers are happy to bear an associated increase in network risk.

Note that AusNet Services takes into account safety and environmental risk, in addition to reliability risk, when planning asset replacements. Therefore in some cases the change in the VCR would not lead to capex deferrals where this capex is required to manage safety and/or environmental risk.

Q6. Given that the VCR is such a strong driver of AusNet Services' capex forecast, the expected unserved energy must be high to drive a capex forecast of this magnitude.

The VCR is used to cost the expected unserved energy that would result from an asset failure. This allows us to compare the expected cost of a failure with the cost of replacing the asset. The probability of a failure is also an input into this calculation.

If the expected cost of failure exceeds the cost of replacement, it is economic to undertake the project.

As parts of the transmission network have some built-in redundancy, an asset failure will not always result in unserved energy. However, it will increase the probability that an additional failure on another part of the network will result in unserved energy. This indirect effect is taken into account in the economic analysis.

Q7. What is the $ impact of safety expenditure on the capex program/ customer bill?

This will be covered at our next forum.

Q8. How do you measure the efficiency of your safety capex?

This will be covered at our next forum.

2.4 Consultation on Key Issues

Q1. Why does AusNet Services plan to ask the AER again for additional opex to embed the use of SAIP in its condition monitoring practices? What has changed since last time? Did AusNet Services appeal the AER's previous decision on this matter?

The AER considered that the overall opex allowance provided was sufficient to enable SAIP to be embedded into AusNet Services' routine maintenance. This was based on a flawed assessment which assumed that expenditure on routine and condition based maintenance on lines could be spent on SAIP instead. However, we do not expect a significant reduction in the need for routine and/or condition-based overhead lines maintenance as a result of embedding SAIP as a routine condition monitoring practice.

As an increase in opex to embed SAIP was not provided for in the previous review, AusNet Services has not fully embedded this into our routine practices. However, we maintain that this technology has long-run consumer benefits. If we include this step change in our revenue proposal, we will address the reasons for the AER's previous decision relating to this step change.

AusNet Services did not appeal the AER's previous decision. Note that this matter fell below the materially threshold required to be met for an appeal to proceed.

Q2. Is there expected to be an offsetting reduction in other aspects of lines condition monitoring as a result of embedding SAIP?

AusNet Services will consider this as it continues to develop its revenue proposal. In the previous review, some potential savings were identified. We will consider whether these would still apply.

Q3. Accelerating depreciation appears counter-intuitive given AusNet Services is considering extending asset life through condition monitoring.

AusNet Services' consideration of accelerating depreciation is driven by the possibility that transmission assets could become less heavily utilised in the future, rather than a change to the actual physical lives of these assets. This would not necessarily result in a change in the assumed asset life when calculating depreciation, but a different depreciation profile over the assumed life. In addition, the present value of depreciation to both AusNet Services and customers would be unaffected.

Under the AER's depreciation methodology assets are depreciated over an assumed 'standard life' which is applied to all assets in a particular category. The actual physical life of a specific asset is not an explicit input into the regulatory depreciation calculation – therefore the depreciation profile would not be affected by extending the life of a particular asset.

Extending the lives of existing assets as an alternative to replacement (including through bolstering our condition monitoring practices) is driven by the lower present value costs of these deferrals. The cost of replacing 500kV conductors is extremely high, and the benefit of deferral by even a single year is significant.

While accelerated depreciation may appear to be at odds with extending asset lives, the following points confirm that this is not the case:

- The methodology applied to calculate regulatory depreciation is not directly linked to the actual life of a specific asset to the depreciation allowance (i.e. the depreciation allowance is identical whether the asset lasts for 45 years or 50 years).
- Reducing the present value cost of the use of the transmission network for electricity consumers is an efficient response to uncertainty over the utilisation of transmission assets in future. Extending the life of existing assets is one way to do this.

Q4. What is the benefit of accelerated depreciation for customers?

- Accelerating regulatory depreciation may contribute towards inter-generational equity. This means that current and future electricity consumers should pay for the cost of providing transmission services proportionate to their use of these services.
- A more detailed explanation of this issue will be set out in the forthcoming accelerated depreciation consultation paper.

3. Summary of Feedback

Feedback forms were provided to the attendees. This section presents a brief summary of the feedback provided through these forms.

3.1 How effective was this forum in meeting each objective?

Objective	Average Score (out of 5)
Outlining our transmission revenue proposal	4.0
Gathering stakeholder feedback	3.9
Building understanding of AusNet Services	4.1

Key: 1 = Highly ineffective, 2 = Ineffective, 3 = Neutral, 4 = Effective, 5 = Highly effective

3.2 Do you have any suggestions for improving future forums (format, structure etc)?

Several attendees suggested that the session needed to be longer, and more time for discussion and questions was required.

One attendee flagged that it would have been useful for more consumer advocates for small customers to attend.

3.3 Do you have any suggestions for improving the content of the presentation?

The following suggestions for improving the presentations' content were provided:

- All graphs should have keys so they are easier to understand;
- Less material on benchmarking could have been presented, with more detail provided on expenditure forecasts;
- A summary of the submission could have been provided as a handout; and
- The level of detail was appropriate for this forum but more detail at future forums would be helpful.

3.4 Regarding the content of this forum, please indicate areas that you found a) helpful, and b) not helpful?

Attendees found the following areas of the forum helpful or unhelpful:

a) Helpful

Attendees considered that most areas of the forum were helpful, and in particular:

- Background and context information, including the impact of the VCR and demand forecasts;
- The discussions; and
- Benchmarking.

One attendee commented that the regulatory expert and staff from AusNet Services were helpful.

b) Not helpful

Attendees commented that the following parts of the forum were unhelpful:

- The use of acronyms in some parts;
- Excluding AEMO costs in some parts of the benchmarking discussion; and
- Limited time for discussion and feedback.

3.5 Are there any topics or issues you would like to know more about?

Stakeholders indicated they would like to know more about the following topics:

- Rate of return;
- Approach to setting the Regulated Asset Base;
- Cost of safety;
- Approach to long-term planning;
- Expenditure forecasting;
- Total factor productivity;
- Specific changes in expenditure forecasts compared to the last review;
- Price impact for customers; and
- Impact on reliability.

Some stakeholders indicated that there were no topics that they wanted to know more about at this stage.

4. Next Steps

AusNet Services will consider the discussion and feedback provided in this forum when planning the second forum and developing our revenue proposal. We will explain how this feedback has, and will, be taken into account as part of our forthcoming engagement activities.

The next TRR stakeholder forum will be held on 28 May at 2.30pm.

Stakeholders are invited to request an individual meeting if they would like to discuss particular aspects of AusNet Services' revenue proposal. Please email us at TRR2017@ausnetservices.com.au .

Attachment 1 – Slide pack and speaking notes

Second Stakeholder Forum

Summary

Transmission Revenue Reset 2017-22

28 May 2015

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1. Overview and Summary

The second stakeholder forum for AusNet Services' 2017 Transmission Revenue Reset was held on 28 May 2015. This document summarises the session through capturing the questions and answers and the feedback received. Some answers documented here include additional information to that provided at the session.

The slide pack presented at the session is attached.

Forum objective

The purpose of this forum was to outline the context for developing the revenue proposal and allow stakeholders an early opportunity to provide feedback on some specific topics. This was designed to meet the overarching objective of TRR stakeholder engagement which is to:

> *Align the revenue proposal with consumer preferences where possible. Ensure consumers understand how their preferences are reflected in the revenue proposal (including through the VCR) and, where this has not been possible, why this is the case.*

Session Overview

A brief overview of the session's content is below. The attached slide pack and speaking notes provide more details on this.

- **Welcome and introduction –** Tom Hallam, Manager Economic Regulation opened the forum with a discussion on safety and introduced key attendees from AusNet Services, AEMO and the independent regulatory expert.
- **Stakeholder engagement update –** this provided an update on our timeframes for stakeholder engagement, identified matters we should not be consulting on and discussed how AusNet Services has responded to feedback provided in the previous TRR forum held in March.
- **Value of Customer Reliability –** the meaning of the VCR – the dollar value of how much customers are willing to pay for reliable electricity supply – was discussed, as well as how the VCR is calculated and used by transmission network planners to inform investment decisions.
- **West Melbourne Terminal Station (WMTS) –** changes to circumstances surrounding the WMTS rebuild since the last TRR were discussed (e.g. improved availability of land, lower VCR, reduced demand forecasts etc.), as well as how these changes have influenced the WMTS project we intend to propose at this TRR.
- **Latest TRR forecasts –** the latest forecasts of revenue, prices and expenditure were presented.
- **Consultation on key issues –** the following issues currently being considered by AusNet Services were discussed:
  - Price/reliability trade-offs; and
  - Accelerated depreciation.
- **Close –** Tom Hallam, Manager Economic Regulation, closed the forum and set out the next steps of the TRR engagement process.

Attendees

The forum was attended by 20 stakeholders from the following organisations:

- AEMO
- AGL
- Alternative Technologies Association
- CitiPower
- ECODEV
- ElectraNet
- Energy Australia
- EnerNOC
- Energy Safe Victoria
- Energy Users Association of Australia
- Jemena
- United Energy
- Victorian Farmers Federation.

An independent regulatory expert from KPMG was also present to facilitate discussion.

2. Summary of Discussion

A summary of the questions asked during each section of the forum and responses to these is provided below.

2.2 Value of Customer Reliability

AEMO gave a presentation on its recent Value of Customer Reliability (VCR) survey. The responses below were mainly provided by AEMO, except those which refer to AusNet Services.

Q1. Where is VCR measured on the electricity network given transmission is one element of the network (i.e. together with distribution)?

There is no one single VCR reliability measure across the electricity transmission and the individual distribution networks. Different parts of each network will have a different VCR, depending on the load composition, with different rates being used for the different customer classes such as residential, commercial, industrial and agricultural. When assessing the economics of an individual project, planners use a VCR that reflects the load composition at the particular connection point or part of the network that is being assessed.

Q2. Does AEMO apply the VCR? And how does AusNet Services use the VCR?

AEMO applies the VCR in its transmission network planning processes to assess whether a transmission network augmentation project is economically justified. This involves comparing the reliability benefits for customers against the project costs; the project is economically justified if the benefits exceed the costs.

AusNet Services uses the VCR in a similar way when determining the most economic asset replacement option and timing of transmission replacement projects.

Q3. How significant were the VCR changes between AEMO's 2014 VCR review and the last review in 2007?

The changes were significant for agricultural and commercial customers (reductions from $110-150/kWh to $44-48/kWh). The change in the VCR for industrial customers was minimal. Residential values also remained similar between the two reviews, and are also consistent with international studies.

Q4. What types of businesses were surveyed relative to the 2007 review?

Similar types of businesses were surveyed from across the NEM, but not necessarily the same businesses. This is because the 2014 survey was a national survey, whereas the 2007 survey was a Victorian study only. The 2014 survey was also conducted in a different manner to the previous survey, using a survey-based choice modelling and contingent valuation approach[1] to derive residential and business customers VCR values. Due to their unique load characteristics, direct connect customers were surveyed separately using a direct cost measurement approach.

[1] Contingent valuation is a survey-based economic technique for the valuation of non-market resources, such as environmental preservation or the impact of contamination.

Q5. Does the VCR cover planned and unplanned outages? If just unplanned, does it assist with scheduling planned outages?

Only unplanned outages are included in the scope of the VCR. AEMO attempts to ensure that no load shedding occurs when scheduling planned outages.

Q6. Were a range of agricultural businesses included in the survey? The significant reduction in agricultural VCR between the two reviews is surprising.

A range of agricultural businesses were included in both surveys, however because of the aggregated nature of the results AEMO is not able to determine which individual businesses or sectors within the agricultural industry have changes with respect to VCR.

Drivers identified by AEMO for the reduction in agricultural VCR include increased electricity costs since 2007–08 and the implementation of energy efficiency savings by businesses in these sectors.

Q7. What is the size of the impact of the reduction in the VCR on the capex forecasts of both AEMO and AusNet Services?

The lower VCR coupled with a reduction in demand forecasts resulted in AEMO reassessing its investment plan and deferring a number of augmentation projects.

For AusNet Services, the lower VCR is an input into the economic analysis undertaken to determine the economic timing of replacement projects. This analysis considers the impact of the proposed project on reliability as well as on safety and environmental risk. Therefore the investment decision is affected by other factors in addition to the VCR.

However, as a general rule, the change in the VCR has deferred major stations rebuilds by two to three years. The impact on the magnitude of the capex forecast was presented at the March forum.

Q8. Should the average VCR be used for transmission planning, or just the direct connect value, given the majority of reliability loss occurs on the distribution network? I am concerned the current approach of using the average places too high of a value on transmission network reliability.

The VCR used for transmission planning should reflect the full range of customers that are affected by load shedding, which is not limited to direct connect customers. Accordingly, AEMO and AusNet Services planners use a locational VCR that reflects the load composition and the type of customers that would be impacted by load shedding in the absence of the project.

Q9. What is a direct connect customer?

A direct connect customer is a customer that is connected directly to the transmission network. These are typically large industrial customers that consume substantial amounts of energy, such as metals (production and processing), wood pulp and paper, mining, water (pumping and desalination), oil refining and liquefied natural gas (LNG).

Q10. What is the relationship, if any, between the VCR and the "value of lost load" measure used in the electricity wholesale market?

The value of lost load is used to set a maximum spot price in the wholesale electricity market. The VCR is an estimate of the aggregate amount that customers place on the reliable supply of electricity. While these measures both relate to the value placed on reliability, they do not measure the same thing and are used for different purposes.

2.2 West Melbourne Terminal Station

Q1. If the West Melbourne Terminal Station (WMTS) rebuild project is facing land constraints, how was the current terminal station built given that the same land constraints would have existed at that time?

A brownfield project such as the WMTS rebuild requires additional land to allow supply to be maintained during construction relative to a greenfield project. These requirements and the proposed East West Link created land constraints that meant an Air Insulated Switchgear (AIS) rebuild was not feasible. Accordingly, a Gas Insulated Switchgear (GIS) rebuild, which has a smaller footprint, was proposed at the time of the last transmission determination.

However, since that time, AusNet Services has secured a long term lease for a strip of additional land adjacent to the WMTS. At the time of the previous review AusNet Services' ability to access this land was not confirmed. In addition, the East West Link project has been cancelled, which enables AusNet Services to utilise land which was previously required during the construction period of the East West Link project.

These changes allow AusNet Services to propose an AIS rebuild at the forthcoming review.

Q2. What is the difference between Air Insulated Switchgear (AIS) and Gas Insulated Switchgear (GIS)?

GIS is typically housed inside buildings and has a much smaller footprint than conventional AIS, but is normally more expensive. However, GIS has a number of benefits, including reduced site requirements.

Q3. What is the difference in lifespan between AIS and GIS?

We would expect a lifespan of approximately 45 years for both types of technologies.

Q4. When do you expect AusNet Services' 22 kV transmission and CitiPower's 22 kV sub-transmission assets at WMTS to be retired?

CitiPower has to undertake some network upgrades to enable the retirement of both AusNet Services and CitiPower's 22 kV assets at WMTS. AusNet Services understands that CitiPower has proposed these upgrades in their EDPR submission.

It is envisaged that the 22 kV assets at WMTS will be retired in stages, and in coordination with CitiPower's network upgrade projects, which will facilitate the transfer of load from WMTS 22 kV to both WMTS 66 kV and Brunswick 66 kV. Note that the proposed redevelopment of WMTS is not dependent on the timing of the retirement of the 22 kV assets.

Q5. In the AER's TransGrid decision, the AER commissioned a report on the costs and benefits of rebuilding a station versus replacing individual components (e.g. switchgear). Does AusNet Services undertake similar analysis when planning station rebuild and asset replacement projects?

AusNet Services explores a range of options when planning to replace assets or rebuild stations, including carrying out staged and selective replacement of assets. We determine the most economic replacement option for each station by considering the estimated cost for each option as well as the project benefits achieved in the following areas: reduction in operation and maintenance cost, reduction in safety risk, reduction in environmental risk, reduction in supply risk and reduction in collateral plant damage risk.

A full rebuild was determined to be the most economical solution at WMTS due to the age and poor condition of the majority of the assets.

The project to replace deteriorated 330/22 kV transformers at South Morang Terminal Station (SMTS) is an example where AusNet Services used staged or selective replacement of assets and deferred the replacement of the second transformer. The economic assessment for this project showed that it is more economical to stage the replacement of the two transformers rather than replacing both transformers in one integrated project.

2.3 Latest TRR forecasts

Q1. How much of the capex forecast is to meet forecast increases in demand?

In Victoria, AEMO is responsible for planning demand driven, or augmentation, transmission capital expenditure. Accordingly, AusNet Services capex forecast does not include any augmentation expenditure.

However, forecast demand is an input into our analysis to determine the economic timing for our replacement projects.

Q2. How does the WACC assumption implicit in your forecasts compare with the EDPR WACC assumption?

Our latest forecasts assume the same WACC as that proposed in our distribution price review of 7.19%. This is lower than the WACC approved for the current 2014-17 transmission regulatory control period of 7.87%.

2.4 Consultation on Key Issues

Price/reliability trade-offs

Q1. Is the level of Expected Unserved Energy (EUS) presented for Springvale Terminal Station (SVTS) over and above the "normal" level of EUS expected across the NEM?

Yes. The EUS shown on this chart would only occur in the event of an outage at this station, and is thus incremental to the "normal" level of EUS that occurs across the NEM.

Q2. What timing is assumed for the SVTS replacement project in the capex forecast?

The middle option – 2020/21.

Q3. How many projects of this nature (i.e. asset replacement projects) are included in the capex forecast? And what share of the forecast do they account for?

Approximately 10 terminal station asset replacement projects have commenced, or will commence in the forecast period, and have thus been included in the capex forecast. These projects account for around half of the network capex forecast, which excludes non-network expenditure such as IT, motor vehicles and leases.

Q4. Are these projects subject to a Regulatory investment test for transmission (RIT-T)?

No. A RIT-T is only carried out for augmentation projects, whereas these are asset replacement projects. However, we still undertake economic analysis of potential replacement projects that applies similar cost/benefit principles to a RIT-T.

Q5. Would you expect higher risk and lower reliability as you defer projects?

As projects are deferred, the consequence of failure stays the same, but the probability of failure increases. However, because customers value reliability less (reflecting the lower VCR), the dollar value of this risk is unchanged.

Q6. Given the distribution network contributes most of the unreliability experienced by customers, should AusNet Services be investing in reliability on the transmission network?

When assessing the economic merits of a particular transmission project, we compare the investment required with the project benefits, including reliability impacts. While these reliability impacts are of a different nature to distribution – transmission outages, while less common, typically have more significant and widespread consequences – they are captured in our assessment framework. Only those where the reliability benefits outweigh the cost will proceed.

Q7. Have you considered modifying the VCR to reflect infrastructure in the area? e.g. Monash hospital

While the VCR calculated for each terminal station takes into account the mix of customers, it does not make adjustments for specific customers that may have unique reliability needs. Customers such as hospitals or industrial plants typically have private arrangements with the relevant transmission or distribution network and/or a backup supply to maintain supply in the event of an outage. In addition, AEMO plans a hierarchy of outages to protect these customers from load shedding, should a reliability incident occur.

Q8. Given the flat risk curve, do you intend to defer as much capex as possible and push existing assets as far as possible without compromising safety?

Yes. A flattening risk curve is generally a consequence of the reduction in the VCR and demand forecasts. These changes have tended to reduce the net economic benefits of full rebuild projects, resulting in a deferral of their economic timing. This means that, where safety is compromised, existing assets will remain in place for longer. While this reduces forecast capex, an increase in opex will be required to maintain these older assets.

Accelerated depreciation

Q1. Does accelerated depreciation increase the amount of depreciation being recovered?

No. Accelerated depreciation brings forward depreciation charges, but does not change the total amount of depreciation (in present value terms) that is recovered over the life of the asset.

Q2. What is the WACC assumption used in your modelling and why did you adopt this assumption?

The modelling assumes the WACC gradually increases to a long-run average rate of around 8.5% by 2022. This approach was adopted to demonstrate that it may be timely to apply accelerated depreciation now when the cost of capital is low, which may in turn help manage price impacts when interest rates increase in future periods.

Q3. Can you please explain what the risk is to AusNet Services of decreasing asset utilisation?

The current regulatory regime protects network businesses from utilisation risk. This protection has the effect of lowering the required WACC because networks are perceived by investors as safe investments.

Q4. Can you describe intergenerational equity and the representation of future generations further?

While considerable uncertainty exists with respect to future utilisation of electricity network assets, a decision to not recover a higher proportion of costs from today's customers is likely to require significantly higher electricity prices in the future to enable sufficient recovery of revenue from a potentially smaller customer base. As alternative energy solutions become more economic, it is likely that current customers will account for a greater proportion of the use of existing network assets than future generations. There is a strong argument on equity grounds that the revenue recovered from current generations should be commensurate with their use.

Q5. Why should consumers pay for any depreciation of existing assets?

Investment decisions that have funded the current asset base were made on the basis that the cost recovery protection currently provided by the regulatory regime would be maintained. Preventing networks from recovering depreciation charges would in effect be removing this protection and would create investment uncertainty in the sector.

If a degree of utilisation risk was to be borne by networks, a commensurate adjustment to the WACC may be required to reflect this.

Q6. Are there any other electricity networks, including distribution networks, which are considering accelerated depreciation?

Other electricity networks are also exploring the issue, but are yet to explicitly propose accelerated depreciation as a means of addressing utilisation risk.

Q7. Have investors expressed concerns with respect to utilisation risk?

Currently not given the regulatory framework protects networks from this risk, but investors do enquire about the potential impact of disruptive technologies on the future recovery of investment.

Q8. If you apply accelerated depreciation by reducing asset lives, is there a risk that businesses will be incentivised to replace assets more quickly?

The prudency and efficiency of asset replacement projects is determined by evaluating the net economic benefits offered by the project. Projects are only justified if they will yield positive net economic benefits.

While depreciation charges associated with a particular asset may be recovered by reducing its economic/technical life, its physical condition may still be rated highly despite being fully depreciated. In this case, there are unlikely to be economic grounds to justify the replacement of this asset.

Q9. Is AusNet Services being consistent in its approach to addressing utilisation asset risk by considering accelerated depreciation and also proposing an opex step change to extend the life of existing assets?

We recognise the importance of being consistent in our approach to addressing utilisation risk. Constraining growth in the asset base by limiting capex by extending the physical lives of existing assets may require increased maintenance expenditure, referred to as a capex-opex trade-off. This is complementary to accelerating the depreciation allowance, as both measures focus on managing the size of the regulated asset base.

Q10. Are you proposing a depreciation schedule that's fixed or one that could be adjusted if other cost drivers change (e.g. a WACC increase)?

We are yet to finalise our depreciation proposal. However, any future change in our depreciation approach will only be made if there are considered to be compelling reasons for making such a change. Changes in other cost drivers, and therefore the impact on price, will be taken into account should future changes be considered.

It is important to note that, under the regulatory framework, the present value of the depreciation charges for each asset is equal, regardless of changes that are made to the approach.

3. Summary of Feedback

Feedback forms were provided to the attendees. This section presents a brief summary of the feedback provided through these forms.

3.1 How effective was this forum in meeting each objective?

Objective	Average Score (out of 5)
Updating on the development of our transmission revenue proposal	3.9
Highlighting drivers of investment	3.6
Gathering stakeholder feedback on key trade-offs	4.0

Key: 1 = Highly ineffective, 2 = Ineffective, 3 = Neutral, 4 = Effective, 5 = Highly effective

3.2 Do you have any suggestions for improving future forums (format, structure etc)?

One stakeholder indicated that the use of an independent facilitator was beneficial to drawing out questions on the issues discussed. Another suggested that more representation from consumer advocates would improve the forum, which could be facilitated by potentially providing financial assistance to reduce attendance costs. A number of stakeholders considered the format to be appropriate, highlighting the range of speakers as a positive.

3.3 Do you have any suggestions for improving the content of the presentation?

One stakeholder suggested that more simplified financial analysis was needed. Another attendee noted that the discussion on investment drivers focussed too heavily on the impact of the VCR on replacement, rather than other drivers such as safety.

3.4 Regarding the content of this forum, please indicate areas that you found a) helpful, and b) not helpful?

Attendees found the following areas of the forum helpful or unhelpful:

a) Helpful

- Outlining the drivers of the WMTS project and other capital expenditure (e.g. asset replacement projects);
- Update on our TRR forecasts; and
- Price/reliability trade-off case study.

b) Not helpful

Attendees did not identify any areas as being unhelpful.

3.5 Are there any topics or issues you would like to know more about?

One stakeholder flagged they would like to know more about the basis for investment decisions, while another identified trade-offs as an area they wished to know more about. Most stakeholders indicated that there were no topics that they wanted to know more about at this stage.

4. Next Steps

AusNet Services will consider the discussion and feedback provided in this forum when planning the next forum and developing our revenue proposal. We will explain how this feedback has, and will, be taken into account as part of our forthcoming engagement activities.

The next TRR stakeholder forum will be held in early October 2015.

Stakeholders are invited to request an individual meeting if they would like to discuss particular aspects of AusNet Services' revenue proposal. Please email us at TRR2017@ausnetservices.com.au .

Attachment 1 – Slide pack and speaking notes

Third Stakeholder Forum: Summary

Transmission Revenue Reset 2017-22

12 October 2015

Contents

1. Summary

On 12 October 2015 AusNet Services ran a third stakeholder forum titled “Responding to Change” as part of its 2017 Transmission Revenue Reset stakeholder engagement program.

This document summarises the subjects covered, the questions raised by participants and the feedback received. Some of the answers provided in this document include additional information that was not provided during the session.

The forum presentation with speaking notes is available on AusNet Services’ webpage.

1.1 Forum objective

The purpose of this the TRR stakeholder forum was to present a summary of 2017 TRR revenue proposal.

This forum was designed to meet the TRR stakeholder engagement objective of ensuring that consumers understand how their preferences are reflected in the revenue proposal (including through the VCR) and, where this has not been possible, explaining why this is the case.

Stakeholder feedback from this forum would not influence the TRR proposal due to its proximity to submission, but would be used to inform other stakeholder activity. Previous to this forum, stakeholders were provided with a number of opportunities to influence the TRR proposal. These included the first and second stakeholder forums, individual meetings with AusNet Services and a consultation paper on accelerated depreciation.

1.2 Session Overview

A brief overview of the session’s content is included below. The attached presentation provides more detail.

- **Welcome and introduction.** Alistair Parker, General Manager, Asset Management, opened the forum. Alistair introduced the theme (“Responding to change”) and outlined the agenda. He then presented the safety topic of ‘reducing transmission system incidents’ with particular reference to the results of AusNet Services’ targeted transmission network safety programs and, the strong relationship between reliability and safety in certain transmission assets.
- **Stakeholder engagement.** Alistair Parker also provided an update on the progress of the TRR and an overview of the stakeholder engagement program delivered to date. This completed part one of the forum.
- **Future trends in transmission.** Charles Popple, Executive Advisor, Industry Development, discussed future trends and factors related to the transmission network. Charles covered aspects such as the falling cost and increasing efficiency of solar photovoltaic cells, the impact of ‘big data’, and electric vehicles on network operations. He also examined possible future network aspects such as mini grids and digital communications.
- **Summary of TRR proposal**. Presented by Charlotte Coster, Principal Economist. The proposal summary consisted of three sections. The first section covered historical and continued price stability in Victoria. The second section covered changes that impacted on the 2017 TRR - these included the lower Value of Customer Reliability, reduced consumption and lower demand forecasts. The third section summarised the proposal from the perspective of revenue building blocks. Specific stakeholder comments and feedback were included in relevant sections.

- **Discussion and conclusion.** Tom Hallam, Manager of Regulation and Network Strategy facilitated a discussion among participants, addressed the issue of confidentiality related to parts of the TRR proposal, and closed the forum.

1.3 Attendees

The forum was attended by 14 stakeholders from the following organisations:

- AEMO
- CitiPower
- Department of Economic Development, Jobs, Transport and Resources (DEDJTR)
- ElectraNet
- Energy Australia
- EnerNOC
- Jemena
- Kildonan
- United Energy
- Consumer Challenge Panel

2. Discussion and Questions

A summary of the questions asked during each section of the forum and responses to these is provided below.

2.1 Value of Customer Reliability

Q1. What are the specific impacts of the reduced VCR on reliability?

The Value of Customer Reliability (VCR) is independently estimated by AEMO and is an input into AusNet Services' asset replacement planning process. The VCR significantly decreased following a review in November 2014 and the reduced value has changed the economic timing of replacement projects, resulting in project deferrals.

The impact on reliability is highly dependent on location and timing. The reduction in the VCR will only impact on reliability in the forecast period where asset replacement projects that were scheduled to proceed in this timeframe have been deferred as a result of this change.

As a general rule, the change in the VCR has deferred major stations rebuilds by two to three years. In the years immediately before the deferred rebuild proceeds, the assets will be older than would otherwise have been the case. During this period, the risk of an outage at these locations will gradually increase. However, the increased risk will be relatively modest. There is a trade-off between reliability and price. Therefore the benefit of deferring capital projects is lower prices. Lower reliability and lower prices are consistent with the signals on consumers' preferences seen through the reduction in the VCR.

2.2 Opex

Q1. What does the "responding to increasing security threats" opex step change involve?

These costs, which together account for 2.6% of controllable opex, relate to the following two opex step changes:

i. New emergency response arrangements (0.20% of controllable opex).

AusNet Services is proposing expenditure to comply with the greater emergency management and response capacity required of it as a result of the recently established Emergency Management Victoria and The Office of The Inspector General of Emergency Management. These organisations were established through an amendment to the Emergency Management Act 2013. Complying with these changes will require additional expenditure for:

- Training purposes to ensure a sufficient number of staff are available for deployment to the State Control Centre during emergencies;
- Staff costs associated with on-call allowances and overtime to be paid during predicted deployments;
- Audit fees to undertake an annual (newly legislated) Risk Management Plan Audit; and
- Carrying out an annual emergency exercise that has been uplifted from a terrorism event to a more onerous "all hazards" type event.

ii. Establishment of IT security team (0.60% of controllable opex).

In March 2015, the Australian Securities and Investments Commission (ASIC) published its Cyber resilience: Health Check report, recommending a cyber-security framework for ASX-listed organisations.

AusNet Services is proposing expenditure to establish a dedicated security monitoring and response team to align its IT security program with the framework recommended by ASIC. Given the potential consequences of a successful cyber-security attack on its network and the expectations of ASIC,

AusNet Services considers that its proposed expenditure to adopt NICF-CSFCI reflects expenditure that a prudent and efficient network operator would incur.

2.3 Future network issues and trends

Q1. Have you considered how non-synchronous generation will affect the network in future periods?

AusNet Services recognises the potential challenges that may be imposed by the connection of significant levels of non-synchronous generation sources, such as solar photovoltaics, to the electricity networks.

Solar PV generation, for example, presents significant challenges for traditional protection schemes in the detection and clearance of faults, and the protection of the connected devices. The inverters that form part of solar PV systems can be sensitive to voltage deviation and can shut down in response to fluctuations on the networks. AusNet Services is currently investigating ways to deal with these challenges.

Traditionally, a way of addressing such problems was to impose constraints on the level of non-synchronous generation that could be connected to a network, but this will not be an appropriate response in the future.

However, while new technology is causing these challenges, there are also potential solutions available through the application of new technologies. These are detailed technical questions which expert engineers within AusNet Services are addressing.

Connection of renewables at the transmission level and the collective energy input from the distribution networks also creates new challenges for the control of the transmission network. AEMO is giving particular attention to these challenges as the percentage of renewable generation at certain times is very high in some jurisdictions.

For example there have already been periods in South Australia during which the entire demand was supplied by wind generation. This represents challenges in controlling the network due the unpredictability and volatility of such generation. Again the solutions may be partially found in innovation such as the deployment of batteries to manage volatility.

2.4 Accelerated depreciation

Q1. Has the AER adopted accelerated depreciation in other reviews?

AusNet Services is the first network company in Australia to propose the application of declining balance accelerated depreciation to new investments. This approach is driven by the uncertainty over future utilisation caused by emerging energy market trends.

Therefore accelerated depreciation has not been applied by the AER in other reviews.

3. Summary of Feedback

This section presents a brief summary of the feedback provided via feedback forms that attendees were asked to complete at the end of the session. The forms consisted of an effectiveness evaluation section and written response questions.

3.1 Effectiveness evaluation

Attendees were asked to rate the effectiveness of the forum I meeting its objectives, using a five point rating scale. i.e. 1 = Highly ineffective, 2 = Ineffective, 3 = Neutral, 4 = Effective, 5 = Highly effective.

The table below shows the forum was generally considered effective in achieving its objectives.

Objective	Average Score (out of 5)
Summarising the 2017 Transmission Revenue Proposal	4.0
Outlining how stakeholder feedback influenced the proposal	3.9

Attendees could also write a comment in this section. Only two comments were received from attendees who stated that they would have preferred more detail in the proposal summary, particularly related to the proposed capital works program,.

3.2 Written responses

Four 'written response' questions gave attendees the opportunity to suggest improvements, state what they found helpful or unhelpful and include subjects they would like more information about. Below is a summary of the general sentiment of attendees' responses to each question.

i. Do you have any suggestions for improving future forums (format, structure etc)?

Most attendees were satisfied with the format. Individual suggestions included more discussion of works programs and access to advance copies of the presentation.

ii. Do you have any suggestions for improving the content of the presentation?

There were very few responses to this section. One attendee suggested more time to discuss slides. Another suggested more information about the relationship between asset condition and the capex program.

iii. Regarding the content of this forum, please indicate areas that you found helpful/not helpful.

a) Helpful

- Changes that have occurred since last proposal.
- Approach to depreciation.
- Proposal summary
- Explanatory style
- Variety of speakers

b) Not helpful

Two comments were submitted. One attendee would have preferred more information on how the TRR capex program was influenced by change, while another felt that some of the information presented was already known to some attendees.

vi. Are there any topics or issues you would like to know more about?

All the responses to this question were requests for more information on specific areas. These included a breakdown of capex and opex by project, information on capex decisions related to asset condition and details related to costs of terminal station rebuilds.

iv. Would you like to comment on the types of information that AusNet Services will claim as confidential? Please include any feedback below.

One comment was submitted. An attendee was unclear about confidentiality related to a pass through and suggested that further information on confidentiality may assist stakeholder understanding.

4. Next Steps

During the presentation, it was made clear to attendees that the forum was designed to present the final proposal and input could not influence the TRR proposal given the tight timeframes. However, feedback provided was captured and will be considered by AusNet Services at a later stage of the process.

Attendees were informed that they would have another opportunity to engage with and influence the 2017 TRR through the AER's formal consultation procedures.

Feedback related to the format and structure of the forum, presentation, speakers and so forth will be taken into account when planning other forums and stakeholder engagement activities across the business.

Stakeholders are invited to request an individual meeting if they would like to discuss particular aspects of AusNet Services' revenue proposal. Please email us at TRR2017@ausnetservices.com.au .