AusNet Transmission Group Pty Ltd

Transmission Revenue Review 2017-2022

Revised Revenue Proposal

Appendix 5A: The Diminishing Value Approach

Submitted: 21 September 2016

Appendix 5A: The Diminishing Value Approach

As discussed in section 5.2 of the Revised Revenue Proposal, the Draft Decision rejected the application of diminishing value (DV) depreciation to new assets as it considered this approach did not reflect the nature of the assets over their economic lives.

This appendix provides comments on the analysis presented in the Draft Decision, and responds to a number of concerns raised by the AER and the Consumer Challenge Panel in relation to the DV approach set out in the Revenue Proposal.

These comments have been provided to ensure there continues to be robust debate on the economic merits on the use of accelerated depeciation as a response to potential changes in the utilisation of electricity networks.

1.1 Draft Decision

The Draft Decision rejected the application of DV depreciation to new assets as it considered this approach did not reflect the nature of these assets over their economic lives. The AER rejected the DV depreciation approach proposed by AusNet Services for the following reasons:[1]

- *The proposed profile of depreciation under the DV method does not reflect the nature of the assets over their economic lives. This is based on our assessment of expected utilisation trends. The initial doubling of depreciation through the use of a multiple in the DV calculation is arbitrary and not consistent with our assessment of expected utilisation trends for new assets.*
- *The DV method employed by AusNet Services results in a residual value at the end of the asset's economic life. This means the sum of the real value of the depreciation attributable to new assets is not equivalent to the value at which those assets were first included in the RAB.*
- *AusNet Services has not provided evidence to support a different forecast utilisation of new and existing assets. We consider the type of asset and the purpose for which is needed, rather than whether it is new or existing, will determine utilisation. Further, overall demand trends are likely to impact both new and existing assets to a similar degree. This means that two separate depreciation approaches (that result in substantially different depreciation profiles) cannot both reflect the nature of the assets based on such a distinction as new and existing. We consider the SL method meets the requirements of the NER for both new and existing assets based on our assessment of expected utilisation.*
- *AusNet Services has not demonstrated how the objectives of the NER (in particular the long run interests of consumers) are promoted by the DV method of depreciation. We consider this method will lead to inefficient use and management (such as early replacement) of the assets. The higher prices under the DV method could encourage lower utilisation creating a self-fulfilling outcome that would not be efficient.*

1.2 Response to Draft Decision

DV compared to SL depreciation

The AER considered that because of the short-term price increase under DV, it does not prevent falling utilisation and could actually encourage lower utilisation due to prices being higher than they would otherwise be under the SL method of depreciation.

AusNet Services considers that any short-term price increases would not reduce utilisation because disruptive technologies are currently not economic compared to the grid alternative.

[1] AER, *AusNet Services Draft Decision*, Attachment 5 – Regulatory depreciation, July 2016, p. 14.

This period was described as a "window of opportunity" in theoretical research conducted on the implications of competition and technological change for economic depreciation for a regulated firm. This research found that regulators are averse to taking action during such a period, and that this is inappropriate given the nature and rate of technological change.[2] Also known as 'regulatory lag,' this concept of regulation failing to keep speed with industry change is not new.

The Commerce Commission of New Zealand (CCNZ) recently set a regulatory precedent for accelerated depreciation, approving a 15% reduction to remaining lives for all assets as a precautionary measure to respond to a changing energy landscape. In making this decision, the CCNZ defined the problem presented by emerging technologies as follows:[3]

> *"Increasing deployment of emerging technologies potentially changes the risk to EDBs' ability to fully recover their invested capital, under existing physical asset lives assumptions set out in the IMs. These new technologies enable greater deployment of distributed generation or greater distributed electricity storage. Such technologies may enable:*
>
> - *More consumers to generate and store their own electricity; and/or*
> - *New competitors to enter the market and bypass distributors' networks*
>
> *As a result, an EDB's network may be used by fewer consumers and the EDB may not be able to fully recover the costs of its historic investment from its remaining consumers"*

The CCNZ considered a maximum reduction to remaining lives of 15% would:[4]

- Allow NSPs the option of a more rapid time profile of capital recovery as a precautionary measure to address increasing uncertainty regarding the risk of partial capital recovery
- Mitigate the risk of potential future price shocks for consumers, which would likely be required to if (and when) the downside risk of partial capital recovery becomes more likely.

The CCNZ's decision indicates there is regulatory precedent for adjusting depreciation profiles where doing so facilitates more desirable future price outcomes. While the driver of accelerated depreciation may differ between jurisdictions – for example, government policy changes may be specific to one jurisdiction – there are clearly economic grounds for diverging from straight-line depreciation, provided the alternative depreciation profile reflects the nature of the assets over their economic lives.

AusNet Services' proposal reflects this approach – taking action now will address the impact of asset cost in the future by smoothing out the depreciation costs over multiple regulatory periods. The alternative approach of waiting until asset closure has occurred is likely to distort future prices by condensing depreciation costs into a single regulatory period. Waiting for such an outcome to eventuate would be inconsistent with the preferences expressed by the AER in its Draft Decision.

Furthermore, the short-term price increases associated with AusNet Services' initial depreciation approach are unlikely to have a material impact on customer bills. However, waiting until utilisation falls substantially would have a material impact on bills as a more drastic adjustment would be required to be made to the depreciation schedules.

Implied utilisation under different depreciation methods

The AER found that AusNet Services' proposed DV method resulted in a terminal asset value of 12.9% of the initial asset's value. This issue could be dealt with relatively easily by replacing the DV method with the variable declining balance method, which applies declining balance for a certain period of the asset's life before switching to straight-line, thereby ensuring full recovery.

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[2] M Crew and P Kleindorfer, *Economic depreciation and the regulated firm under competition and technological change*, Journal of regulatory economics, Vol. 4, Iss. 1, March 1992, pp. 51–61.

[3] https://www.comcom.govt.nz/dmsdocument/14332

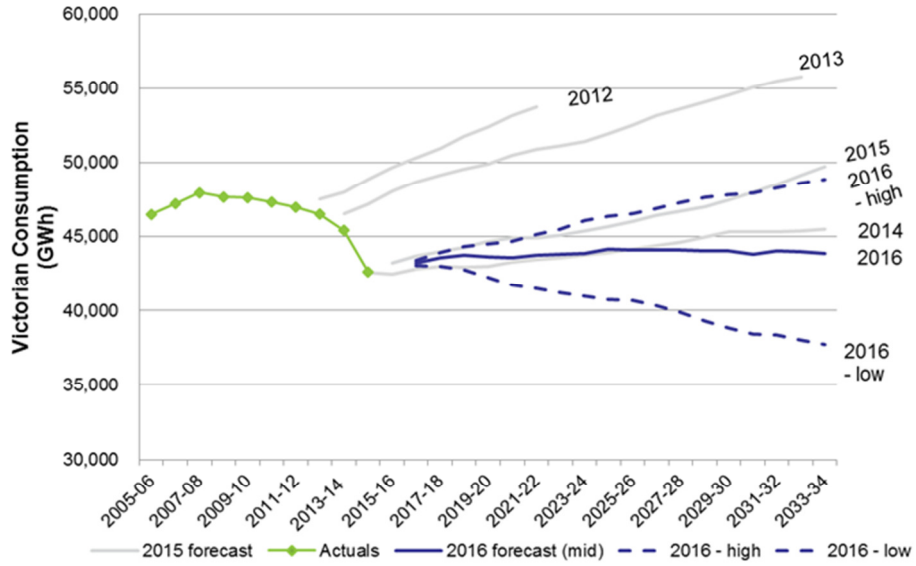
[4] https://www.comcom.govt.nz/dmsdocument/14332

Forecasts of future utilisation

The AER considered that there is not sufficient evidence to expect falling utilisation on AusNet Services' network and that it expects utilisation to increase into the future, although at a slower rate due to alternative technologies. The AER presented AEMO's 2015 National Energy Forecasting Report (NEFR) forecasts, which show increasing maximum demand out to 2035.

This view is not supported by the latest (2016) AEMO forecasts of energy throughput, which, for the first time, show flat consumption out to 2035, as shown by the following Figure. This figure also shows that successive AEMO forecasts have continued to present a lower forecast of energy throughput, as new information on the impact of disruptive technologies comes to light.

Figure 1: AEMO Victorian energy consumption forecasts



Source: AEMO, *2016 National Electricity Forecasting Report*, June 2016

The AER also considered that we had not clearly defined what utilisation means, suggesting throughput, maximum demand and customer numbers as potential measures of throughput. AusNet Services' proposal used energy throughput as the measure of utilisation.

The AER and the CCP agree that AusNet Services had not adequately demonstrated the link between emerging technologies and the risk to its transmission business. As discussed earlier in this chapter, the AER has set a high threshold for the evidence it requires before approving accelerated depreciation based on declining future utilisation.

The current body of evidence is not sufficiently developed, given the fast pace of change over the last few years, nor specific to AusNet Services' transmission network, to meet this threshold. By the time that industry is agreed that falling utilisation is a problem, it may be too late to avoid consumer price shocks. However, AusNet Services agrees with the AER that the current regulatory framework does not allow it to go uncompensated for assets that may become stranded.

The CCP also noted that the argument of falling utilisation had not been made by AusNet Services in relation to its recent distribution proposal or by any other Victorian distributor in their recent proposals.

AusNet Services does not consider that the merits of its Revenue Proposal are weakened by virtue of the fact that other networks are yet to propose accelerated depreciation as a response to falling utilisation. It is important that new regulatory issues are assessed and debated to ensure the regulatory framework adapts to reflect current circumstances and emerging developments, particularly given the five-year duration of regulatory periods.

Stranding risk

The AER did not consider that the current regulatory framework results in uncompensated stranding and therefore a risk to AusNet Services.

AusNet Services agrees with the AER's assessment of stranding risk under the NER. Importantly, the "regulatory compact" referred to in the Draft Decision benefits consumers through a lower rate of return than what would otherwise apply and, therefore, lower prices.

The DV percentage calculation

The AER considered that AusNet Services had not established the economic basis for choosing the DV multiple of 200% and that it would be coincidental if this rate resulted in a depreciation schedule that best matches expected changes in utilisation.

The choice of multiplier in AusNet Services' Revenue Proposal reflected an assessment of a DV rate that would balance the price impacts on current and future customers.

AusNet Services acknowledges that the most appropriate multiple is that which most closely matches the expected decline in utilisation. However, any DV rate is likely to be somewhat arbitrary, given the difficulties faced in precisely matching the rate with future utilisation in light of uncertainty surrounding future utilisation.

By targeting accelerated depreciation to specific assets where greater levels of certainty apply, the above issues are addressed under the Revised Revenue Proposal (discussed further in section 5.5).

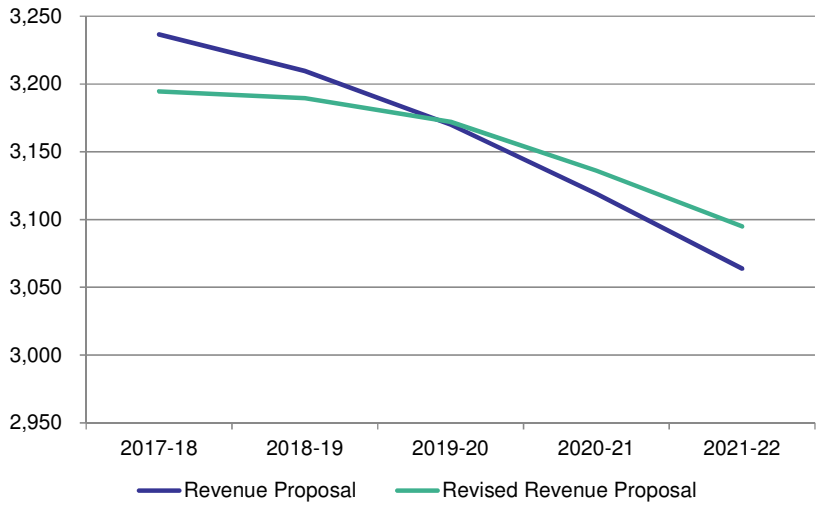
Size of the RAB

The AER considered AusNet Services' proposal was incorrect in stating that "RAB indexation results in depreciation charges that increase over time because they are based on an ever-increasing RAB value, back-ending depreciation charges."

The intent of AusNet Services' statement was that RAB indexation combined with straight-line depreciation results in the back-ending of depreciation charges, assuming a recurrent level of capital expenditure. In contrast, DV depreciation using the variable declining balance method (as discussed above) would reduce the RAB, even with increasing capital expenditure.

At any rate, AusNet Sevices' Revised Revenue Proposal continues to forecast a declining RAB, as a result of the modest capex forecast being proposed. AusNet Services notes that the RAB is forecast to decline at a faster rate under the depreciation approach applied in the Revenue Proposal.

Figure 2: Forecast RAB value ($m, real 2016-17)



Source: AusNet Services

AusNet Services' modelling of prices

The AER considered that the long-term price modelling included in AusNet Services' proposal may leave the business in poor financial position as its depreciation allowance and prices continually fall, which may incentivise early replacement of assets to increase the RAB and maintain prices.

AusNet Services does not consider the impact of its proposed depreciation approach would result in any unreasonable reduction in future revenues to the extent that its financial position would be compromised.

Furthermore, and as stated in the Revenue Proposal, the prudency and efficiency of future asset replacement projects will be determined by evaluating the net economic benefits offered by the project. Projects are only justified if they yield positive net economic benefits. As the depreciated value of assets is not an input into this analysis, the suggested incentive to replace assets earlier than is efficient would not exist.

The AER also provided analysis from Cambridge Economic Policy Associates (CEPA), which concluded that in the UK context, accelerated depreciation created cash flow constraints and created intergenerational equity issues where current consumers paid higher prices.

The prevailing historically low interest rates have reduced AusNet Services' cost of capital means it is timely to reduce the value of the asset base during the forthcoming period presents through accelerated depreciation.

Nonetheless, AusNet Services is cognisant of the price impacts its proposal has on its customers and, therefore, would ensure that any accelerated depreciation proposal balances the needs of both its current and future customers. The conclusion that accelerated depreciation creates intergenerational equity issues is an oversimplification. To be meaningful, such analysis needs to assess the price impacts of accelerated depreciation having regard to the interlinkages between the various building blocks.

Utilisation of new and existing assets

The AER considered that because any impact from disruptive technologies would affect both existing and new assets, AusNet Services' proposal to apply DV to new assets would result in a depreciation profile inconsistent with the nature of the assets over their economic lives.

The AER also considered that the type of asset and the purpose for which is needed, rather than whether it is new or existing, will determine utilisation. The AER was of the view that AusNet Services' proposal represents incorrect targeting of the perceived problem of falling utilisation.

AusNet Services accepts that the impact of disruptive technologies will likely impact both existing assets and new assets. However, new assets will be more exposed to these impacts because of the long economic lives of transmission assets. Furthermore, and as noted by the AER, by limiting accelerated depreciation to just new assets, the Revenue Proposal sought to take a conservative approach to addressing the impacts of disruptive technologies. Finally, this Revised Proposal includes accelerated depreciation targeted to specific assets, where the future need and purpose of these assets differs to that of the remaining RAB.

The AER noted that whether it should approve the construction of new assets in the face of falling utilisation is another consideration, highlighting concerns from the Energy Users Coalition of Victoria that there was an inconsistency in AusNet Services seeking both accelerated depreciation and increased capex.

As discussed above, AusNet Services applies a robust economic assessment framework when making asset replacement decisions. Projects are only justified if they will yield positive net economic benefits, having regard to the capital cost of the project and the safety and the reduced risk replacement will achieve.

AusNet Services notes that the capex forecast included in the Revenue Proposal is 8% below investment in the current regulatory period.

Concluding comments

AusNet Services acknowledges that forecasting the impact of disruptive technologies on network utilisation is a complex issue. AusNet Services accepts that some refinement is required to the approach put forward in its Revenue Proposal to ensure it meets the requirements of the NER.

However, the AER has set a high threshold for the evidence it requires before approving accelerated depreciation based on declining future utilisation. This position may limit the ability of network service providers to take measured steps to address potentially significant operating environment changes and in doing so, avoid potential future price shocks. In particular, the nature of disruptive technologies is such that uptake rates often differ materially from those previously anticipated.

Nonetheless, AusNet Services does not consider the level of confidence required by the AER can be provided in the current environment and, therefore, is not proposing to accelerate the depreciation of new assets.

AusNet Services agrees with the AER that there may be other more targeted approaches to dealing with specific issues which would promote customers' long term interests. In recognition of this, AusNet Services is proposing a more targeted approach that brings forward depreciation of specific assets that are expected to no longer be required due to changes in Victoria's generation mix.