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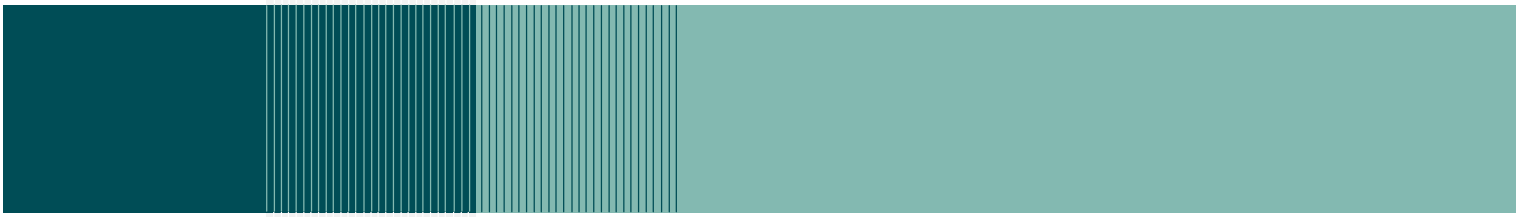
Depreciation of Replacement Assets

A Report to the AER on behalf of TransGrid



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1. Introduction

The Australian Energy Regulator (AER) released its TransGrid transmission determination 2009-10 to 2013-14 draft decision on 31 October 2008 ("Draft Decision"). The Draft Decision rejected TransGrid's proposed depreciation schedules as the AER:

> "[was not] *satisfied with the need to split the standard asset lives between augmentation and replacement asset categories and has decided not to accept the standard asset lives proposed for the replacement asset category of asset classes."*

Consequently, the Draft Decision requires TransGrid to remove the distinction between augmentation and replacement capital expenditure and to use the standard lives proposed for augmentation capital expenditure across both categories of expenditure. TransGrid has engaged NERA to assess whether the proposed depreciation schedules for forecast capital expenditure conform with the requirements of the National Electricity Rules (NER).

The remainder of this report is structured as follows:

- section 2 sets out the relevant clauses in the NER that pertain to depreciation, the arguments contained in TransGrid's initial revenue proposal and the AER's draft determination;
- section 3 assesses TransGrid's proposed standard asset lives of forecast augmentation capital expenditure against the requirements of the NER; and
- section 4 concludes.

2. Background

Clause 6A.6.3 of the NER sets out the following principles for determining a TNSPs regulatory depreciation:

- the TNSP is to propose depreciation schedules in its revenue application - 6A.6.3(a)(2)(i);
- the proposed depreciation schedules must comply with the following principles:[1]
  - each asset (or category of assets) is to be depreciated over its economic life – 6A.6.3(b)(1);
  - the depreciation profile must reflect the nature of the assets or category of assets – 6A.6.3(b)(1); and
  - each asset is to be depreciated only once, ie, the sum of the value of depreciation over the economic life of that asset (in real terms) is to equal to the initial value at which the asset entered the RAB – 6A.6.3(b)(2).
- provided that the depreciation schedules proposed by the TNSP conform with the requirements set out in the NER, the AER is to use these schedules to calculate the depreciation for the TNSP - 6A.6.3(a)(2)(i); and
- if the proposed depreciation schedules do not conform with the NER requirements, the TNSP's depreciation should be calculate on the basis of the depreciation schedules developed by the AER - 6A.6.3(a)(2)(ii).

TransGrid's revenue application proposed depreciation schedules that feature twelve different categories of new capital expenditure over the 2009-10 to 2013-14 regulatory period. Eight asset categories relate to different classes of augmentation investment, while four asset categories cover different types replacement investment.

The regulatory standard lives of augmentation assets are aligned with the accounting and tax lives used by TransGrid. Augmentation asset lives are based on industry standards, are broadly in line with those applied by similar organisations to TransGrid and equate to the period that the assets are expected to provide economic benefits.

Where an asset represents a component within a larger unit, TransGrid has depreciated the asset over the shorter of the asset's useful life and the larger unit's useful life. This treatment is consistent with the requirements of the Australian Accounting Standard AASB 116.

Pursuant to this requirement, TransGrid calculated the regulatory standard life of replacement assets (ie, replacement components of larger units) by:

- calculating the remaining life of the following existing asset classes over the 2009/10 to 2013/14 regulatory control period:
  - lines;

[1] Note that subclause 6A.6.3(b)(3) relates to the treatment of depreciation in the roll forward and so does not have a role in the determination of depreciation schedules for forecast capital expenditure.

- substations; and
- secondary systems;

§ setting the notional asset life for replacement capital expenditure in a given regulatory year equal to the remaining life of existing similar assets; and

§ ensuring that the expected standard asset life for replacement assets is equal to the weighted average notional asset life of expected replacement assets over the 2009/10 to 2013/14 regulatory control period.

This approach acknowledges that replacement assets are attached to existing asset units that have, on average, a useful life equal to the remaining life of all similar existing assets. Where the cost of salvaging a replacement component outweighs the value of the refurbishing asset it is prudent to scrap the asset. Consequently, the expected life of replacement assets that are expected to be scrapped is equal to the remaining useful life of the existing asset unit.

The asset categories and associated lives proposed by TransGrid are set out in Table 2.1 below.

Table 2.1
2009/10 to 2013/14 Asset Categories and Standard Asset Lives

Asset Category	Asset Life
Asset Lives Applicable to New Assets (Augmentation)	
Transmission Lines & Cables	50 years
Substations	40 years
Secondary Systems	35 years
Communications	35 years
Land & Easement	n/a
Business Information Technology	4 years
Support the Business – Minor Plant	8 years
Motor Vehicles & Mobile Plant	8 years
Asset Lives Applicable to Replacement Assets	
Transmission Lines & Cables	26 years
Substations	30 years
Secondary Systems	30 years
Communications	12 years
Land & Easement	n/a

Source: Figure 12.1 of TransGrid's revenue application, page 111.

TransGrid's proposed schedules depreciate assets assigned to each of these asset categories on a real straight-line basis over the expected life of each asset category. The proposed depreciation profile is unchanged from that applied to TransGrid in the current regulatory period.

The most significant change to TransGrid's current depreciation schedules is that the proposed schedules contain separate asset categories for augmentation and replacement capital expenditure. Furthermore, the proposed standard life for replacement capital expenditure is shorter than used for augmentation expenditure.

The AER in its Draft Decision has accepted the following elements of TransGrid's depreciation schedules:

- the use of real straight-line depreciation;
- the remaining lives for past capital expenditure; and
- the standard lives of forecast network and non-network augmentation capital expenditure.

However, the AER has rejected the proposed split of augmentation and replacement capital expenditure. The AER's concerns are:[2]

- that there was no need to split the standard asset lives between augmentation and replacement asset categories;
- the standard life of new replacement assets proposed by TransGrid is inconsistent with the standard lives applied by other network service providers; and
- the economic life of large replacement assets (ie, transformer or switchgear) should equal their technical life. In the event that a new large replacement asset is located in a substation with a remaining life less than the technical life of the large replacement asset, it would not be scrapped. Instead, it would be placed back in service or used as a spare.

For these reasons the AER:[3]

> *"… is not satisfied with the need to split the standard asset lives between augmentation and replacement asset categories and has decided not to accept the standard asset lives proposed for the replacement asset category of asset classes. TransGrid's proposed replacement forecast capex will therefore need to be reallocated to the augmentation category of asset classes for the purpose of calculating regulatory depreciation in the PTRM."*

[2] AER, TransGrid transmission determination 2009-10 to 2013-14: Draft decision, 31 October 2008, page 160.

[3] AER, TransGrid transmission determination 2009-10 to 2013-14: Draft decision, 31 October 2008, page 160.

3. Replacement Assets

The AER has raised the following three issues with the depreciation schedules proposed by TransGrid:

- the need to split forecast capital expenditure into augmentation and replacement categories;
- the calculation of standard lives of replacement capital expenditure by reference to the remaining life of the existing assets with which the new assets are located; and
- the treatment of replacement assets that may be relocated and refurbished.

Each of the AER's issues is discussed in greater detail in the following sections.

3.1. Augmentation/Replacement Asset Categories

The Draft Decision states that the AER was not satisfied with the need to split forecast capital expenditure between augmentation and replacement categories.[4] However, clause 6A.6.3(a)(2) of the NER clearly envisages that it is the prerogative of the TNSP to nominate the asset categories.

The intention for TNSPs to nominate depreciation schedules (and therefore the asset categories) was stated by the Australian Energy Market Commission (AEMC) when it developed the transmission revenue principles:[5]

> *"The Commission also considers that the discretion to propose depreciation schedules appropriately lies with the TNSPs rather than the regulator, as it is the TNSPs that have the best knowledge of the condition and the likely utilisation of their assets."*

Although the asset categories proposed by TransGrid differ from those adopted by other network service providers, the AER must assess the proposed depreciation schedules against the NER requirements, as set out in 6A.6.3(b), ie:

- the schedules must depreciate using a profile that reflects the *nature* of the assets or category of assets over the *economic life* of that asset or category of assets;
- each asset is to be depreciated only once, ie, the sum of the value of depreciation over the economic life of that asset (in real terms) is to equal initial value at which the asset entered the RAB; and
- the method of depreciation used in the roll forward of asset values to the end of a regulatory period must be consistent with that used to determine regulatory revenues during that period.[6]

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[4] AER, TransGrid transmission determination 2009-10 to 2013-14: Draft decision, 31 October 2008, page 160.

[5] AEMC, National Electricity Amendment (Economic Regulation of Transmission Services (Rule) 2006 No. 18, 16 November 2006, page 79.

Clause 6A.6.3(b) of the NER does not require that a TNSP justify its choice of asset categories, rather it requires the AER to assess whether the TNSP's depreciation schedules conform with the NER requirements.

Since the AER in its Draft Decision has accepted TransGrid's proposal to depreciate assets on a real straight-line basis the proposed depreciation schedules must comply with the NER requirements that:

- the profile of the depreciation reflects the *nature* of the assets or category of assets; and
- each asset is depreciated only once, ie, the sum of the value of depreciation over the economic life of that asset (in real terms) is to equal initial value at which the asset entered the RAB.

Consequently, the AER can only reject the TransGrid's proposed depreciation schedules if it is concerned that the schedules do not conform to the requirement that assets be depreciated over their *economic life*. That is, the proposed standard lives for forecast replacement capital expenditure is too short and does not reflect the expected economic life of these assets.

This issue is discussed in greater detail in the following sections.

3.2. Economic Life of Replacement Assets

The purpose of depreciation is that it systematically allocates the cost of an asset over the period that the asset provides useful services to consumers. In other words, the depreciation schedule matches the timing of the costs of purchasing an asset to the length of period over which benefits are provided by that asset. Consequently, over time those consumers that benefit from the services provided by an asset are required to contribute to the assets purchase costs.

This concept is articulated in clause 6A.6.3(b)(1) of the NER which requires that the period over which regulatory depreciation is allowed is equal to the *economic life* of the assets or category of assets. In other words, the asset should be depreciated over the period that it provides useful transmission services.

In the Draft Decision the AER states that:[7]

> *"Regulatory practice has been to assign a regulatory life (Standard and remaining) to each category of assets that equals its expected economic or technical life. Generally, regulatory, economic and technical lives of an asset coincide."*

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[6] This requirement only applies to the roll forward of regulatory assets to the beginning of a regulatory period, rather than for the proposed depreciation schedules.

[7] AER, TransGrid transmission determination 2009-10 to 2013-14: Draft decision, 31 October 2008, page 157.

However, this approach is inconsistent with the NER requirements which state that the regulatory life should reflect the economic life of an asset. The difference between economic life and technical life of an asset has been articulated in a number of regulatory forums. For example, the Australian Competition and Consumer Commission (ACCC) in its 1999 draft statement of regulatory principles stated that:[8]

> *"Perhaps more significantly, the useful economic life of an asset may have very little to do with the feasible technical life of the equipment. It may be more dependent on the period over which the services it provides will be needed."*

There are a number of situations where the useful economic life of an asset would be less than that asset's technical life, such as:

- where the technological advancement results in the obsolescence of an asset. For example, the introduction of the digital mobile network resulted in the obsolescence of a large number of analogue mobile phones before the end of their technical life;
- where the costs of operating and maintaining an existing asset exceed the costs of replacing it with a new asset;
- where changes in demand require that the asset be upgraded before the end of its technical life. For example, the economic life of infrastructure that is designed to service a resource (eg, a gas field or generator) would match the limited life of the resource; and
- the economic life of refurbishing an asset would equal the remaining life of the refurbished asset.

In each of these examples the period in which the asset is utilised by consumers is shorter than the technical life of the asset. If in these circumstances the asset is depreciated over the technical life of the asset rather than its useful economic life, then customers will be required to pay for the asset in later periods even though it is no longer providing any useful services to them.

Differences between the useful life of an asset and an asset's technical life are common in the provision of electricity transmission services. It is often economically efficient (in that it minimises the long term cost of providing the service, in present value terms) for assets that are bundled together to be replaced at the same time. As a consequence, the economic life of some assets will be less than their technical life.

This is especially the case where an asset is installed as a component of a larger existing asset, rather than as part of a new development, ie, replacement assets. Where assets are a component of a larger asset unit it is foreseeable that the component will be removed and scrapped when the rest of the large asset unit come to the end of its standard life. Consequently, the economic life of the replacement asset equates to the expected remaining life of the existing asset unit, even when the technical life of the replacement asset is greater.

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[8] ACCC, *Statement of Principles for the regulation of Transmission Revenues: Draft*, 27 May 1999, page 46.

Almost all assets that are removed by a TNSP before the end of their technical life are not redeployed. Instead, these assets are scrapped and disposed of for little or no value. The exception is large substation assets (ie, transformers and switchgear) that may be refurbished by the TNSP and either redeployed to another part of the network or held as a spare. The issue of refurbished assets is discussed in the following section.

Where an asset that is a component of a larger asset unit is not expected to be refurbished, its economic life should be determined by reference to the remaining life of the larger asset unit (or category of assets). TransGrid's proposed standard lives for replacement assets reflect their economic life as it matches the expected period that the asset will provide transmission services to consumers.

This approach to the standard life of assets is consistent with the Australian Accounting Standards Board requirements governing depreciation, ie:[9]

> *"Depreciation is the systematic allocation of the depreciable amount of an asset over its useful life."*

It is also consistent with the Australian Tax Office (ATO) requirement that taxpayers who make their own estimate of the effective life of an asset must take into account:[10]

- *how long you expect the plant to be used irrespective of who uses it*
- *how you expect to use it and*
- *whether you would be likely to scrap it before the end of its useful life.*

In our opinion, the depreciation of replacement assets over the remaining economic life of a larger asset unit is consistent with the NER requirements, when they are expected to be scrapped when the larger asset unit is decommissioned, as the replacement assets are depreciated over their economic life.

[9] AASB 116 " Property, Plant and Equipment"

[10] ATO, Guide to depreciation 2000-01, page 7.

3.3. Refurbished Assets

In its Draft Decision the AER correctly pointed out that it would be unreasonable for some large substation assets, such as transformers and switchgear, to be scrapped when the co-located substation reaches the end of its remaining economic life. Rather, these large assets would likely be refurbished and continue to provide transmission services either as a spare or installed in a new location.

Since these assets would be expected to be refurbished and re-located, the economic life of these assets would not be limited by the remaining life of the larger asset unit in which they are located. Consequently, the economic life of replacement assets that can be expected to be refurbished should be equal to a new development.

Consequently, motor vehicles are depreciated over the whole period that they are expected to provide useful economic services.

In our opinion, those replacement assets that can reasonably be expected to be refurbished should be removed from the replacement asset category as their economic life is not limited to the remaining life of the larger asset unit with which they are located. Instead, these assets should be depreciated over the same economic life as new developments. A possible simple adjustment would be for TransGrid to include assets that are likely to be refurbished into one of the eight 'augmentation' asset categories.

4. Conclusion

The NER requires a TNSP to propose depreciation schedules that conform with the requirements set out in clause A6.6.3(b) of the NER, ie:

- each asset (or category of assets) is to be depreciated over its economic life;
- the profile of the depreciation must reflect the nature of the assets or category of assets;
- each asset is to be depreciated only once, ie, the sum of the value of depreciation over the economic life of that asset (in real terms) is to equal initial value at which the asset entered the RAB; and
- the method of depreciation used in the roll forward of asset values to the end of a regulatory period must be consistent with that used to determine regulatory revenues during that period.

In the Draft Decision the AER determined that TransGrid's revenue application conformed with all the requirements of clause 6A.6.3(b) except for the proposed standard lives of replacement assets. In our opinion, TransGrid's proposed standard lives for replacement assets meets the requirement to depreciate assets (or category of assets) over the economic live of that asset (or category of asset).

Replacement assets that are a component of larger asset units have an economic life equal to the remaining life of the larger asset unit if they are scrapped when the larger unit is decommissioned. With respect to these assets the AER is incorrect to require that the regulatory standard lives equal to a new development. However, those replacement assets that are likely to be refurbished and not scrapped when the larger unit is decommissioned should be included in one of the eight 'augmentation' asset categories and depreciated over their technical lives.