

30/09/2020

Ms Merryn York
Acting Chair
Australian Energy Market Commission
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SYDNEY NSW 2000

Email: Merryn.York@aemc.gov.au

Dear Ms York

Rule Change Proposal – Making ISP Projects Financeable

The Australian Energy Market Operator's (AEMO) Integrated System Plan (ISP) identifies an optimal path for the development of the transmission system to provide reliable, secure and affordable electricity to electricity consumers across the National Electricity Market.

As the provider of transmission services in New South Wales and parts of the Australian Capital Territory, we are pleased to be able to contribute to the energy transition through the delivery of these ISP projects, which are critical to ensure the power system meets its security and reliability requirements, at the least cost to consumers.

In the course of our assessment of Project Energy Connect (PEC), we have identified there are features of the regulatory framework that have significant implications for the financeability of large scale projects with long asset lives. This issue has not been apparent before and has emerged as a direct result of the unprecedented capital investment required in order to deliver the ISP projects.

We have been working closely with the Australian Energy Regulator (AER) and other stakeholders through the course of this year to find an appropriate solution that facilitates the timely and efficient delivery of ISP projects and reduces the barrier to attracting capital in a manner that does not increase the costs to consumers. This dialogue has concluded that the financeability issue is unable to be resolved within the existing regulatory framework and a rule change is the most efficient solution.

The financeability issue results from the interaction of the regulatory concepts and revenue modelling that defers revenue recovery through two mechanisms: indexation of the Regulatory Asset Base; and delay of the recovery of revenue for depreciation to when the investment is commissioned rather than incurred. The unintended consequence of these two concepts on a project the size of PEC is that the cash flows are insufficient to support 60% debt funding at a BBB+ credit rating (or indeed an investment grade credit rating at all) for an extended period of time. The implications of this are that the returns for these projects are well below what the AER considers will attract investment in a benchmark efficient entity under the Rate of Return Instrument (RORI) and a transmission network service providers' revenue determination.

We are seeking a rule change in the form of a participant derogation from the NER to remove these two regulatory concepts on TransGrid's share of the ISP projects, that have either not commenced or have not been completed through the contingent project process at the date of this request.

Importantly, the rule change does not seek to change the total amount of revenue recovered (in present value terms) for the ISP projects - the rule change is solely designed to ensure that the timing of revenue is aligned with the efficient financing costs of the projects.

We are seeking this rule change request be considered as urgent because it is required to enable us to establish finance for the ISP projects in time to ensure they are delivered consistent with maximising benefits to customers, and in line with the expectations of the South Australian Government (for PEC), the NSW and Federal Governments (for HumeLink), and AEMO for the ISP overall. These timelines would require an investment decision by no later than January 2021 for PEC to be in place by 2022 and late 2021 for HumeLink to be in place in time for the completion of Snowy 2.0 in 2025.

We would like to note that even if the AEMC were to approve this rule change, TransGrid will still not achieve the returns under the RORI and the TNSP's current revenue determination. This is due to aspects of the regulatory framework that we are not seeking to address as part of this rule change request. TransGrid is actively engaging with the AER on these issues as part of the current consultation processes on their review of treatment of inflation and the development of the 2022 RORI.

Nevertheless, TransGrid has proposed the rule change in good faith in order to enable the ISP projects to be financed and delivered to support the requirements of the energy system in transition and the energy policies of the Federal and State Governments.

We look forward to working with the Commission as it progresses this rule change request and thank the Commission staff for their early and constructive engagement with TransGrid on the issues outlined in this request.

Yours sincerely



Paul Italiano
Chief Executive Officer



TransGrid

National Electricity Rules change proposal – 30 September 2020

Making ISP projects financeable - Participant
Derogation

Contents

Executive Summary	3
1. Current arrangements.....	9
1.1 Background.....	9
1.2 Current arrangements	11
1.2.1 RAB indexation	11
1.2.2 When capital expenditure goes into the RAB for the purpose of calculating depreciation	11
1.3 Related regulatory projects.....	11
1.4 Stakeholder engagement	12
1.5 Additional information provided as part of this rule change request	12
2. Issues with the current framework.....	13
2.1 The current framework defers revenue recovery into the future	13
2.2 The ISP projects cannot be financed by the AER’s benchmark efficient entity	14
2.3 Impact of investing in the ISP projects under the current arrangements	16
2.4 Incenta’s view	16
2.5 How the issue has been addressed in other jurisdictions	17
3. Proposed changes and rationale.....	19
3.1 Proposed changes.....	19
3.2 Rationale for the proposed changes	20
3.2.1 Our view	20
3.2.2 Supporting expert advice from Incenta.....	22
3.3 Other options considered	24
3.4 Rationale for a TransGrid derogation	25
4. Costs and benefits of the rule change	26
4.1 Impact on the transmission component of consumers bills	26
4.2 Net market benefits from the ISP projects	26
4.3 Administrative costs to TransGrid and the AER of implementing the changes	27
5. Assessment against the NEO	28
5.1 The rule making test	28
5.2 Assessment against the NEO.....	28
5.3 Assessment against the revenue and pricing principles in the NEL	29
6. Why the rule change is urgent	31
7. Contact details.....	32

Executive Summary

TransGrid is the operator and manager of the high voltage transmission network connecting electricity generators, distributors and major end users in New South Wales (**NSW**) and the Australian Capital Territory. Our network is also interconnected to Queensland and Victoria, and is instrumental to an electricity system that facilitates reliable, competitive and affordable electricity supply for consumers. Our responsibility is to operate and manage the transmission network safely, securely and efficiently in the long-term interests of consumers.

Australia is in the midst of an energy transition and the energy system is evolving at a rapid pace. A significant recent change to the regulatory framework has been rules providing for the development of the Integrated System Plan (**ISP**) and the actioning of this Plan by the Australian Energy Market Operator (**AEMO**). AEMO considers that major transmission projects on the optimal development path (**ISP projects**) are critical to enable the energy market transition and ensure the power system meets its security and reliability requirements, at the least cost to consumers.

The ISP projects in NSW include Project EnergyConnect (**PEC**)¹, HumeLink² and the upgrade to the Victoria New South Wales Interconnector (**VNI**) and require an unprecedented level of capital investment. TransGrid understands the importance of ensuring that the ISP projects proceed for the benefit of consumers and we are committed to making the required investment in the energy system, subject to resolving the financeability issue outlined below.

1. The financeability issue

In the course of our assessment of PEC (as part of the Contingent Project Application (**CPA**) development), we have identified there are features of the regulatory framework that have significant implications for the financeability of large scale projects with long asset lives, such as PEC. This issue has not been apparent before and has emerged as a direct result of the unprecedented capital investment required in order to deliver the ISP projects mentioned above.

The financeability issue is due to the regulatory framework deferring revenue recovery for capital investment costs until later in the asset's life.

The deferral of revenue recovery under the current rules results in a multi-decade period at the start of the assets life where the revenue allowance for large projects like PEC, will fall substantially short of covering the efficient costs of financing the project during that period³. Naturally, this mismatch creates a barrier to securing the capital necessary to finance the project and as a result denying consumers the benefits of the projects concerned.

The regulatory returns set out in TransGrid's current determination and also the 2018 Rate of Return Instrument (**RORI**) are intended to provide a revenue allowance to enable the recovery of efficient financing costs over the life of the asset. These include an assumption of 60% debt funding, a level of financial risk commensurate with a strong investment grade credit rating (Standard & Poor's BBB+⁴), and a return to equity investors assuming 40% equity funding.

Our analysis confirms that cash flows from PEC (and many other ISP projects) will be insufficient to support 60% debt funding at a BBB+ credit rating (or indeed an investment grade credit rating at all) for an extended

¹ A 330KV interconnector between Wagga Wagga in NSW and Robertson in South Australia.

² An interconnection project to support the Australian Government's hydroelectric development know as Snowy 2.0.

³ The efficient cost of financing investment in regulated networks is determined by the Australian Energy Regulator (**AER**) in determinations and under its Rate of Return Instrument 2018.

⁴ Equivalent to a Moody's credit rating of Baa1.

period of time. This has two implications, each of which creates a significant barrier to securing the funding necessary to proceed with the project and substantially undermines the incentive to invest. Either:

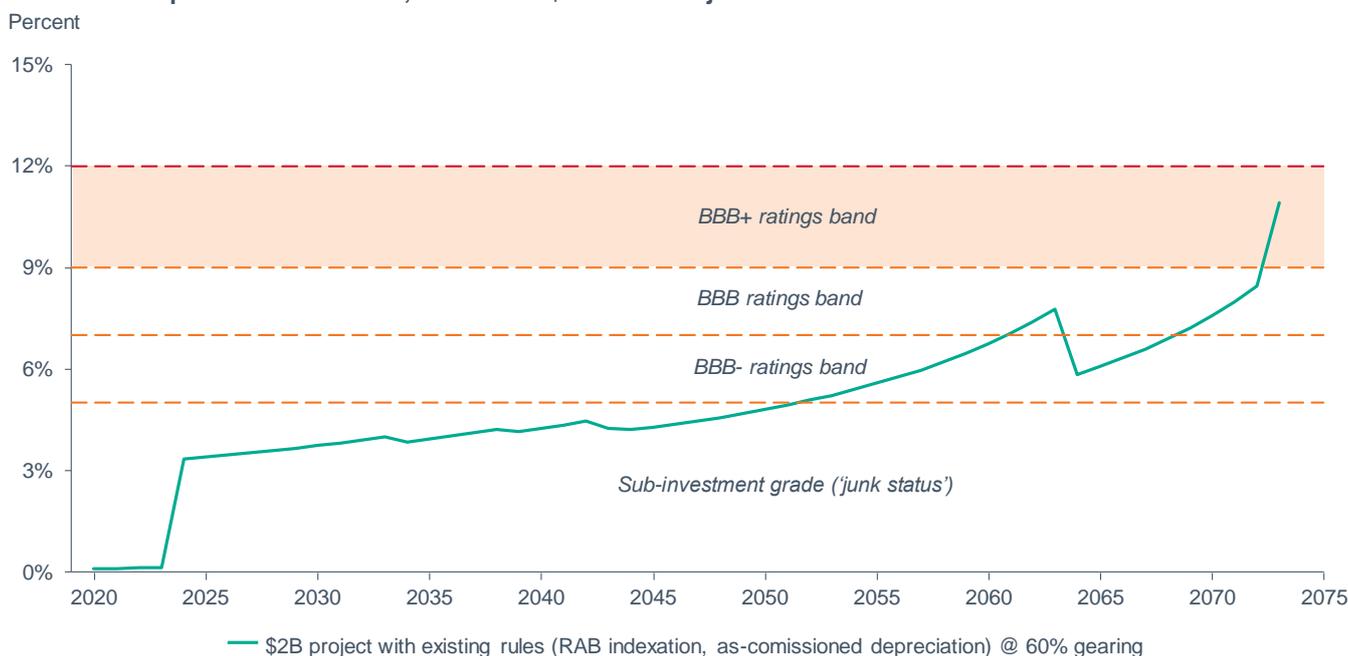
- > the project would require equity funding substantially in excess of the 40% ratio provided for in the revenue allowance, resulting in an uneconomic return to equity investors and lower than the equity returns to those set out in the AER’s RORI (the return on additional equity would be at the regulated cost of debt); or
- > the project could seek to proceed with 60% debt funding but this could only occur on a sub-investment grade (‘junk’) basis resulting in debt funding costs substantially in excess of those compensated for in the revenue allowance, causing serious adverse impacts to financial resilience increasing the risks borne by equity holders to significantly above the level contemplated in the AER’s RORI. Further, the shortfall between compensated debt costs and those incurred at sub-investment grade would have to be borne by equity holders reducing returns to equity holders below those set out in AER’s RORI.

Figure 1, below illustrates the problem. It shows the main credit metric (funds from operations relative to net debt, often referred to as FFO/Net Debt) that is used by credit rating agencies to assess the level of financial risk in a project with a given level of debt funding, and thereby determine its credit rating. The analysis presents the results for a \$2 billion greenfield project (a project substantially the same as PEC) where capital expenditure is 60% debt funded (the **Notional Project**).

Figure 1 demonstrates FFO to Net Debt for the Notional Project (which directly reflects the profile of the revenue allowance) is insufficient to achieve even a baseline investment grade credit rating (BBB-) for more than 20 years. The benchmark credit rating of BBB+ is not achieved at any point in the project’s life.

Figure 1

Funds from Operations / Net Debt, Illustrative \$2 Billion Project



These financeability issues are not simply a function of the returns determined by the AER as set out in the RORI – higher returns under the RORI would improve the situation but would not, of itself, solve this problem. The issue results from the interaction of the regulatory concepts and revenue modelling that defers revenue recovery through two mechanisms: indexation of the Regulatory Asset Base (RAB); and delay of the recovery of revenue for depreciation until the investment is commissioned rather than when capital expenditure incurred. These issues are explained in more detail at section 2 of this executive summary.

The financeability issues can be mitigated by removing these features (the majority of the impact by removing RAB indexation). Figure 2, below, shows analysis for the Notional Project, but with RAB indexation removed and depreciation shown on an 'as incurred' basis (i.e., commencing from when capital expenditure occurs).

Figure 2

Funds from Operations / Net Debt, Illustrative \$2 Billion Project

Percent

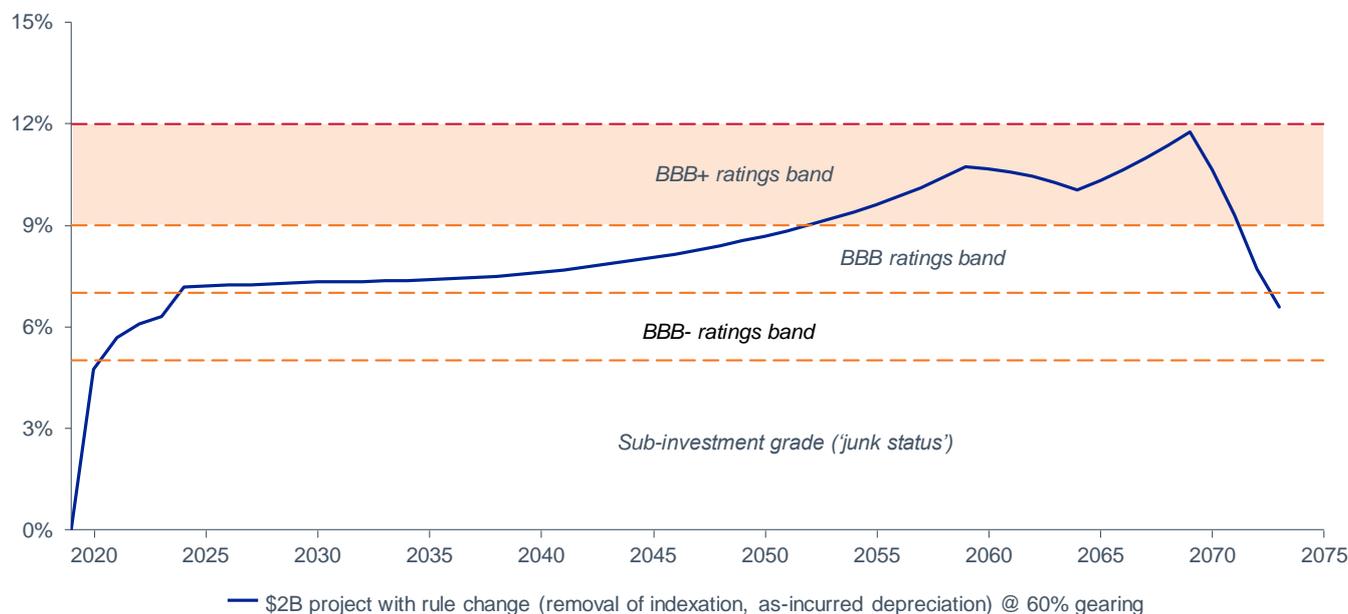


Figure 2 shows that, even with the proposed changes, the Notional Project is unlikely to achieve the benchmark credit rating of BBB+ until quite late in its life. However, it could, with prudent capital management, nonetheless achieve an investment grade rating sufficiently early to overcome the barrier to securing the capital necessary to proceed with the project.

It is important to note that this solution removes barriers to securing capital without increasing the overall regulated return or the transmission costs to be recovered over the life of the project (in present value terms).

We are therefore seeking a rule change in the form of a participant derogation to remove these features from the calculation of TransGrid revenues that arise from ISP projects. This change would yield a revenue profile that is neutral in present value terms at the AER’s RORI, but enables efficient financing of the projects which will result in consumers accessing the benefits set out in the ISP.

2. Features of the current regulatory framework that cause this issue

There are two design features of the current regulatory framework which defer revenue recovery and create a mismatch between when costs are incurred and when revenue is recovered:

- > The provision of compensation for inflation through **CPI indexation** of the RAB, which involves a deduction of forecast CPI indexation from the revenue calculation; and
- > Recovery of revenue for **depreciation** not commencing until projects are commissioned.

Compensation for inflation through indexation

Under the National Energy Rules (**NER**), compensation for inflation is intended to be provided through indexing the RAB. This approach effectively defers compensation for inflation to the later years of the investment through revenues being reduced by a forecast of the CPI indexation, on the expectation that it will

be recovered in later years (in effect, a negative adjustment to the depreciation allowance). For PEC, under the current rules, an amount of negative depreciation would be deducted from the revenue allowance in the 2018-2023 regulatory period (and in the immediately following regulatory periods). The effect of this rule change is to remove this negative depreciation, thereby allowing a positive amount for depreciation (return of capital).⁵

In the case of a business-as-usual (**BAU**) project or investment that is of a modest scale, this 'indexed RAB' revenue profile does not create significant cash flow issues because the RAB of a typical transmission network service provider (**TNSP**) is made up of assets of varying economic lives and vintages. This diversity means that the negative cash flow impact of RAB indexation on newer RAB assets is offset by the positive impact of indexation on cash flows associated with older assets.

However, for projects of a significantly larger size and comprised of assets with relatively longer asset lives, such as the ISP projects, the negative cash flow impacts of indexation are very significant and result in revenue that is insufficient to support the financing requirements of a benchmark efficient entity, as illustrated above. The issue is exacerbated where multiple major ISP projects are undertaken simultaneously, which is the situation TransGrid is likely to be in over the next ten years.

Depreciation for capital expenditure

Currently, the AER requires depreciation of capital expenditure (the return of capital) to be recovered by TNSPs once the relevant assets are commissioned⁶ ('as-commissioned' depreciation). This requirement creates a delay to the recovery of revenue from the time the investment is made until the time the asset is finally commissioned and in service. For an investment like PEC, this means that many hundreds of millions of dollars is invested before any revenue for depreciation is received.

The cumulative effect

The cumulative effect of these two features of the current regulatory framework is that cash flow from the projects is insufficient to achieve the benchmark credit rating or gearing, thereby creating a significant barrier to securing the capital necessary to proceed with the type of projects set out in the ISP.

We have been working closely with the AER and other stakeholders through the course of this year to find an appropriate solution that facilitates the timely and efficient delivery of ISP projects and reduces the barrier to securing capital in a manner that does not increase the costs to customers. This dialogue has concluded that the issue is unable to be resolved within the existing regulatory framework, and a rule change is the most efficient solution.

3. Rule change requested

In order to more closely align the timing of revenue recovery with the incurrence of efficient financing costs, and make ISP projects financeable, we propose the following changes to the NER:

- > Remove indexation of the RAB for TransGrid's investment in ISP projects; and
- > Require that depreciation be calculated on an 'as incurred' basis for TransGrid's share of the ISP projects.

⁵ Post tax revenue model in TransGrid's contingent project application for PEC.

⁶ Under the *roll forward model* and *post-tax revenue model* developed by the AER under the NER.

We are seeking a participant derogation from the NER⁷ to contain the change so that it only applies to TransGrid and only to ISP projects that have either not commenced or have not been completed through the CPA process⁸ at the date of this request⁹. This will ensure the issue is addressed in an expeditious manner in order to progress PEC and HumeLink within the timelines that are most likely to maximise benefits to consumers. Further, at this time, only TransGrid is being required to undertake this scale of investment. If this issue were to arise for other TNSPs at some point in the future, a broader consideration of this issue is not prejudiced in any way by this rule change.

We note that similar approaches to those proposed in this rule change request have been adopted in other jurisdictions, including for Transpower¹⁰ in New Zealand. In the case of Transpower, which faced a similar step change in required transmission investment, the New Zealand Commerce Commission allowed for the value of assets for Transpower to be rolled forward without indexation.¹¹

We have considered and analysed other approaches to addressing the timing of revenue recovery, such as accelerating depreciation or shortening asset lives. However, these approaches are less transparent, are less simply implemented and retain significantly more uncertainty in application.

Importantly, the rule change does not seek to change the total amount of revenue recovered for the ISP projects. As discussed above, **the rule change is solely designed to ensure that the timing of revenue is aligned with the efficient financing costs of the projects.**

4. Urgent rule

We consider that this rule change request is an urgent rule under section 87 of the National Electricity Law (NEL) and should be considered by the AEMC under the expedited pathway under section 96 of the NEL. The rule change request is urgent because it is required to enable us to establish finance for the ISP projects in time to ensure they are delivered consistent with maximising benefits to customers, and in line with the expectations of the South Australian Government (for PEC), the NSW and Federal Governments (for HumeLink), and AEMO for the ISP overall. These timelines would require an investment decision by no later than January 2021 for PEC to be in place by 2022 and late 2021 for HumeLink to be in place in time for the completion of Snowy 2.0 in 2025.

These projects have been deemed by AEMO as critical to the security and reliability of the national electricity system and the inability to finance (and therefore deliver them to the requested timeframes) will place risk on the system. Further information on why this rule change request meets the test for urgent treatment under the NEL is provided in section 7 of this request.

5. Impact on consumers

The change to the timing of revenue recovery does not increase costs to customers over the life of the project, as the same amount of revenue will be recovered on a present value basis. Nor does it increase the regulated return provided under the existing TransGrid revenue determination or the RORI. The change to timing reduces the deferral of revenue to improve the ability to access efficient finance.

⁷ A participant derogation may be requested under section 91(5) of the National Electricity Law.

⁸ Under clause 6A.8.2 of the NER.

⁹ The contingent project process under clause 6A.8.2 of the NER will have commenced on two ISP projects (PEC and VNI Minor) before the AEMC makes its determination on this rule change request.

¹⁰ NZ's government-owned transmission business.

¹¹ Commerce Commission, Input Methodologies (Transpower): Reasons Paper, December 2010, pp. 30–31.

The transmission charges to distribution network service providers and consequently retailers will increase marginally compared to no change. However, the ISP projects are designed to deliver lower total bills to customers over time.

We estimate that the application of the proposed rule change to PEC will result in consumers paying, on average, an additional \$3 per household per year in transmission charges for the remaining years of TransGrid's current regulatory period because of the rule change.

However, the rule change will facilitate investment in ISP projects that would otherwise not be financeable. The benefits to consumers of having the ISP projects in place have been identified to be significantly greater than the increase in transmission charges by AEMO.¹² FTI, the consultant that has reviewed the costs and benefits for us of PEC, estimates that the net cost saving to a household in NSW arising as a result of PEC would, on average, be between \$58.40 and \$63.90 per year¹³.

¹² AEMO, *2020 Integrated System Plan*, July 2020, pp. 97.

¹³ The report from FTI accompanies this rule change request.

1. Current arrangements

This Chapter provides background to the rule change request. It also sets out the current arrangements in the regulatory framework relating to this rule change request and related regulatory projects that are currently being undertaken by market bodies. Finally, it sets out the stakeholder consultation that we have undertaken on the rule change request.

1.1 Background

A significant recent change to the regulatory framework has been rules providing for the development by the AEMO of the ISP and the actioning of this Plan. AEMO describes the projects it has identified as being in the optimal development path in the ISP as “nationally significant and essential investments in the electricity system to ensure the system meets its security and reliability requirements with the least cost and lowest regret to consumers”.¹⁴ In the final 2020 ISP, AEMO also describes the projects as “essential actions to optimise consumer benefits as Australia experiences what is acknowledged to be the world’s fastest energy transition.”¹⁵

The ISP projects in NSW include Project EnergyConnect (**PEC**)¹⁶, HumeLink¹⁷ and the upgrade to the Victoria New South Wales Interconnector (**VNI**) and require an unprecedented level of capital investment. TransGrid understands the importance of ensuring that the ISP projects proceed for the benefit of consumers and we are committed to making the required investment in the energy system, subject to resolving the financeability issue outlined below.

Figure 1 below sets out our forecasts of ISP and business as usual capital expenditure to 2035. Subject to our proposed changes to the regulatory framework, we expect to spend \$9-10 billion on greenfield capital investments over the next ten years to deliver our share of the ISP projects. To put this into context, our RAB at the start of the current regulatory control period was approximately \$6.4 billion.

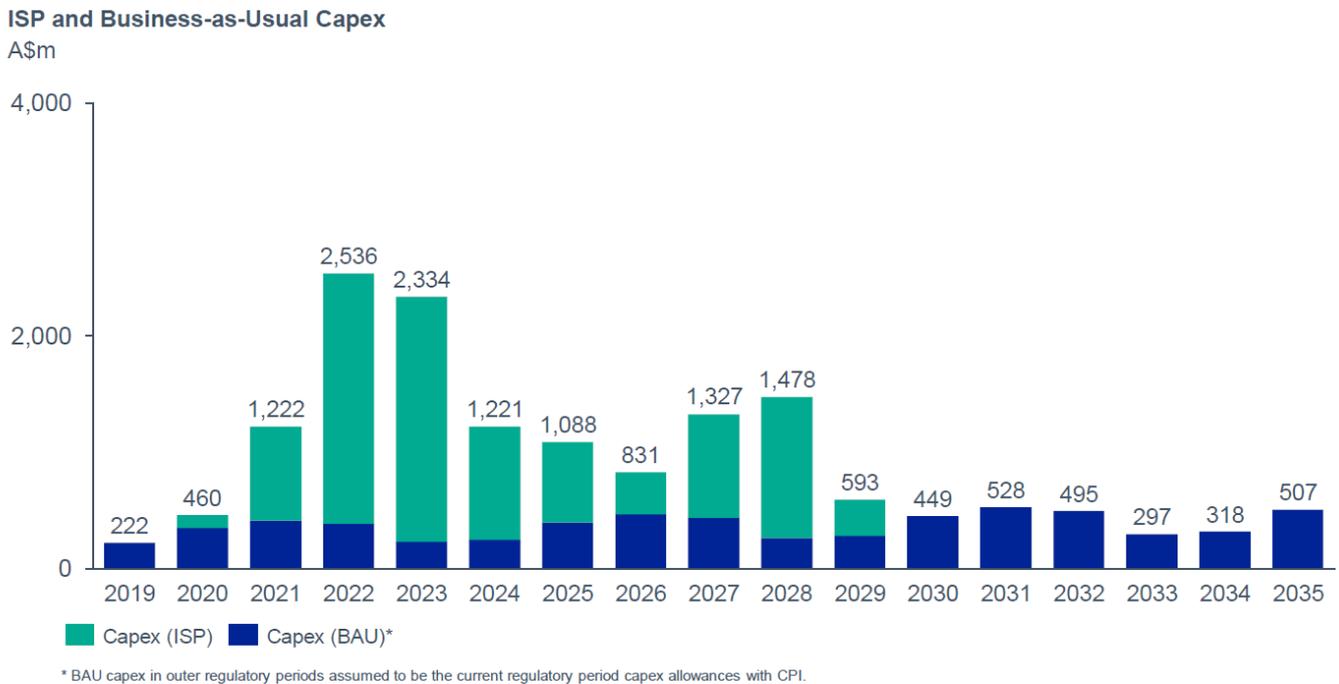
¹⁴ AEMO, Draft 2020 ISP, 12 December 2019, p. 6.

¹⁵ AEMO, 2020 Integrated System Plan, July 2020, p. 8.

¹⁶ A 330KV interconnector between Wagga Wagga in NSW and Robertson in South Australia.

¹⁷ An interconnection project to support the Australian Government’s hydroelectric development known as Snowy 2.0.

Figure 1: Forecast of our ISP and business as usual capital expenditure to 2035



In the course of our assessment of PEC (as part of the Contingent Project Application (**CPA**) development), we have identified there are features of the regulatory framework that have significant implications for the financeability of large scale projects with long asset lives, such as PEC. This issue has not been apparent before and has emerged as a direct result of the unprecedented capital investment required in order to deliver the ISP projects mentioned above.

The financeability issue is due to the regulatory framework deferring revenue recovery for capital investment until later in the asset’s life.

There are two design features of the current regulatory framework which defer revenue recovery and create a mismatch between when costs are incurred and when revenue is recovered:

- > The provision of compensation for inflation through CPI **indexation** of the RAB which requires a deduction of forecast CPI indexation from the revenue calculation; and
- > Recovery of revenue for **depreciation** not commencing until projects are commissioned.

Each of these design features in the NER is set out in more detail in section 1.2. The issues that these design features create is explained in Chapter 2.

We have been working closely with the AER and other stakeholders through the course of this year to find an appropriate solution that facilitates the timely and efficient delivery of ISP projects and reduces the barrier to securing capital in a manner that does not increase the costs to customers. This dialogue has concluded that the issue is unable to be resolved within the existing regulatory framework and a rule change is the most efficient solution.

Resolving this issue will allow us to proceed to a final investment decision on PEC, subject to the AER’s approval of our prudent and efficient expenditure forecasts, and the resultant changes in our revenues and prices that are reflected in our CPA.

1.2 Current arrangements

This section sets out the current arrangements to index the RAB and the timing of when capital expenditure goes into the RAB for the purpose of calculating depreciation.

1.2.1 RAB indexation

The current regulatory framework is designed to return the cost of efficient investment over the life of the assets – a principle often referred to as Financial Capital Maintenance. This principle is applied within the regulatory framework in the NER using an approach that indexes the RAB for inflation.

Under the NER, a TNSP is required to:

- > Index its regulatory asset base (RAB) by the consumer price index (**CPI**) at the start of each regulatory control period.
- > Make a negative adjustment to its tariffs (via depreciation) to prevent double compensation for inflation.

This approach in the NER results in a reduction in cash inflows from revenue in the initial years of the project's operations and a theoretical compensatory increase in later years. Indexing of the RAB does not impact on the amount consumers pay in present value terms for the use of the assets over their life. It only delays the recovery of revenue.

The current approach was established in an environment of increasing energy demand per customer from the network. While the amount of energy consumed is still increasing in the current environment, overall the average consumption per customer is now decreasing. Reasons for the decline in average residential consumption include an increase in localised solar penetration, more energy efficient appliances and more energy efficient building standards.

The current approach is well understood by investors for BAU capital investment. This rule change application is not seeking to change the current approach for our existing RAB.

1.2.2 When capital expenditure goes into the RAB for the purpose of calculating depreciation

The timing of revenue recovery is also determined by whether depreciation for capital expenditure is recovered 'as commissioned' or 'as incurred'. The AER currently requires depreciation of capital expenditure to be recovered by TNSPs once the relevant assets are commissioned. The AER requires this approach through the roll forward model and post-tax revenue model that it develops under the NER and applies to TNSPs as part of their revenue determinations.

1.3 Related regulatory projects

We identify the following regulatory projects which are relevant to investment in the ISP projects:

- > The AER is considering whether the existing incentive-based revenue determination framework can deliver efficient outcomes for consumers when applied to large transmission projects, or whether amendments to the existing framework or an alternative regulatory approach might deliver better outcomes and intends to consult with stakeholders on the issues once their thinking is further developed.¹⁸ We will actively engage in the AER's proposed consultation process.

¹⁸ AER submission to the AEMC's Electricity Network Economic Regulatory Framework review, July 2020.

- > On 7 April 2020, the AER initiated a review of the treatment of inflation in the regulatory framework which considers the method for estimating expected inflation.¹⁹ We made a submission on the AER's review on 3 August 2020.²⁰
- > The AER has commenced its review of the rate of rate of return instrument 2022 for network service providers. The AER expects the active phase of this review will commence in the middle of 2021.²¹
- > AEMO recently published its final 2020 ISP which sets out the optimal development path for the NEM including actionable and future ISP projects.²²
- > On 25 August 2020, the AER published final guidelines to make the ISP actionable including cost benefit analysis guidelines which set out the requirements that AEMO has to follow in developing the ISP and for TNSPs when assessing actionable ISP projects.²³

1.4 Stakeholder engagement

The timing of revenue recovery issue was first raised with key stakeholders such as our Advisory Council²⁴, the ESB and the Federal Minister in January 2020. Since then, we have:

- > Been continuing direct discussions with the AER Board and relevant AER staff on this issue.
- > Engaged with consumers and other stakeholders including members of our Advisory Council, Major Energy Users Inc., Clean Energy Council, Energy Networks Australia and other TNSPs.
- > Held discussions with the NSW, Federal and South Australian Governments.

1.5 Additional information provided as part of this rule change request

The following additional information is provided and attached to this rule change request:

- > Proposed rule drafting.
- > Report prepared for TransGrid by Incenta Economic Consulting (**Incenta**) on the issue and how it can be solved in a way that best promotes the national electricity objective (**NEO**).²⁵
- > Summary of results of revenue modelling that we have undertaken on the issue and options to solve it.
- > FTI report for TransGrid on the benefits of interconnectors.²⁶

¹⁹ AER, *Initiation notice – 2020 inflation review*, 7 April 2020.

²⁰ TransGrid, *Response to AER 2020 inflation review*, 3 August 2020.

²¹ AER, *Pathway to 2022 rate of return instrument – Position paper*, May 2020, p. 8.

²² AEMO, *2020 Integrated System Plan*, July 2020.

²³ AER website, www.aer.gov.au/networks-pipelines/guidelines-schemes-models-reviews/guidelines-to-make-the-integrated-system-plan-actionable, viewed 30 September 2020.

²⁴ Chaired by TransGrid, the Advisory Council is made up of the following member organisations: Australian Industry Group; City of Sydney; Energy Consumers Australia; Energy Users Association of Australia; Ethnic Communities Council NSW; Goldwind; Public Interest Advocacy Centre; Snowy Hydro; St Vincent de Paul Society; Tomago Aluminium; Tesla.

²⁵ Incenta, *Attracting Capital for ISP projects*, TransGrid, September 2020.

²⁶ FTI, *Assessing the benefit of interconnectors*, A report for TransGrid, 9 September 2020.

2. Issues with the current framework

This Chapter sets out the issues with the current regulatory framework and provides some examples as to how these issues have been addressed in other jurisdictions.

2.1 The current framework defers revenue recovery into the future

As set out in Chapter 1, there are two design features of the current regulatory framework which defer revenue recovery and create a mismatch between when costs are incurred and when revenue is recovered:

- > The provision of compensation for inflation through **CPI indexation** of the RAB which requires a deduction of forecast CPI indexation from the revenue calculation; and
- > Recovery of revenue for **depreciation** not commencing until projects are commissioned.

This section set outs the issues that arise as a result of each of these design features.

Compensation for inflation through indexation

Under the National Energy Rules (**NER**), compensation for inflation is intended to be provided through indexing the RAB. This approach effectively defers compensation for inflation to the later years of the investment through revenues being reduced by a forecast of the CPI indexation, on the expectation that it will be recovered in later years (in effect, a negative adjustment to the depreciation allowance). For PEC, under the current rules, an amount of negative depreciation would be deducted from the revenue allowance in the 2018-2023 regulatory period (and in the immediately following regulatory periods). The effect of this rule change is to remove this negative depreciation, thereby allowing a positive amount for depreciation (return of capital).²⁷

In the case of a business-as-usual (**BAU**) project or investment that is of a modest scale, this indexed RAB revenue profile does not create significant cash flow issues because the RAB of a typical TNSP is made up of assets of varying economic lives and age. This diversity means that the negative cash flow impact of RAB indexation on newer RAB assets is offset by the positive impact of indexation on cash flows associated with older assets.

However, for projects of a significantly larger size and comprised of assets with relatively longer asset lives, such as the ISP projects, the negative cash flow impacts of indexation are very significant and result in revenue that is insufficient to support the financing requirements of a benchmark efficient entity, as demonstrated in section 2.2. The issue is exacerbated where multiple major ISP projects are undertaken simultaneously, which is the situation TransGrid is likely to be in over the next ten years.

Depreciation for capital expenditure

Currently, the AER requires depreciation of capital expenditure (the return of capital) to be recovered by TNSPs once the relevant assets are commissioned²⁸ ('as-commissioned' depreciation). This requirement creates a delay to the recovery of revenue from the time the investment is made until the time the asset is finally commissioned and in service. For an investment like PEC, this means that many hundreds of millions of dollars is invested for several years before any revenue for depreciation is received.

The cumulative effect

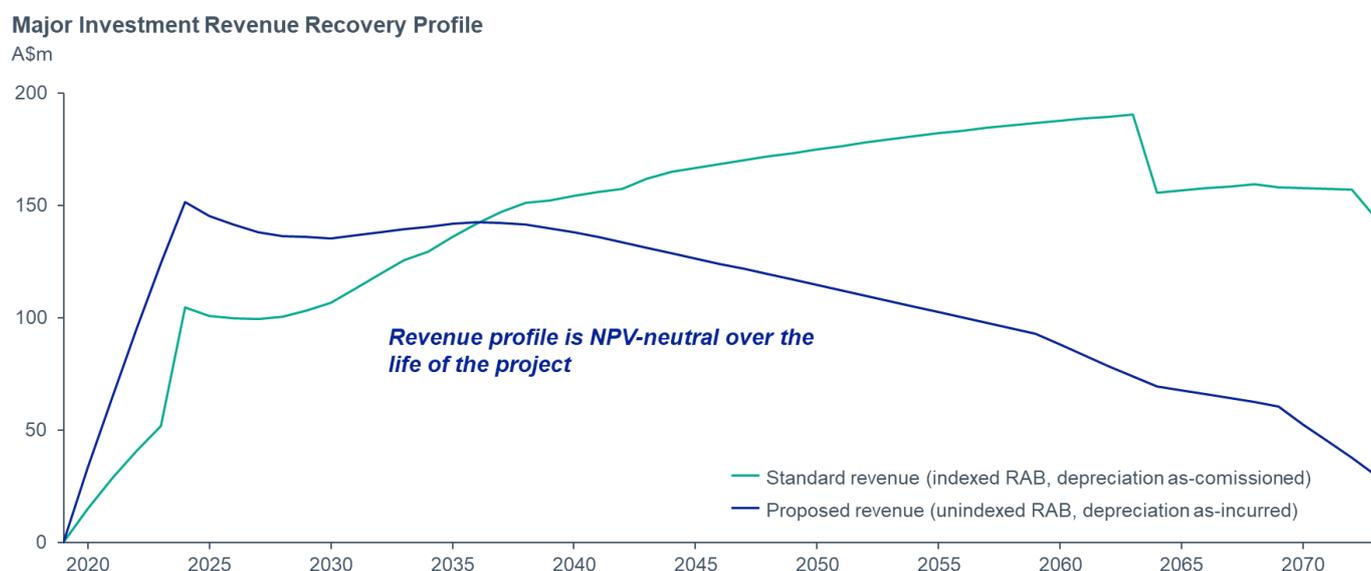
The revenue impact of the current arrangements is illustrated as an example in Figure 2. Figure 2 shows the capital-related revenues for a large stand-alone \$2 billion project, which is similar in size to TransGrid's ISP projects. It shows the revenues that would be received for the project under the current arrangements

²⁷ Post tax revenue model in TransGrid's contingent project application for PEC.

²⁸ Under the *roll forward model* and *post-tax revenue model* developed by the AER under the NER.

compared to if the RAB is not indexed and depreciation can be recovered once capital expenditure is incurred. It shows that the current arrangements in the NER defer the recovery of revenue for capital expenditure.

Figure 2: Illustrative impact of current and proposed arrangements on allowed revenues for a \$2 billion project



In particular:

- > Indexation of the RAB results in the pushing of revenue recovery to much later in the investment horizon compared to if the RAB is not indexed.
- > Allowing revenue for depreciation for capital expenditure to be recovered once the capital expenditure is commissioned creates a delay to the recovery of revenue from the time the investment is made until the time the asset is in service.

The cumulative effect of the two design features of the current regulatory framework is that cash flow from the projects is insufficient to achieve the benchmark credit rating or gearing, thereby creating a significant barrier to securing the capital necessary to proceed with the project. This is set out in more detail in section 2.2 below.

2.2 The ISP projects cannot be financed by the AER's benchmark efficient entity

The regulatory returns set out in TransGrid's current determination and also the 2018 Rate of Return Instrument (**RORI**) are intended to provide a revenue allowance to enable the recovery of efficient financing costs over the life of the asset. These include an assumption of 60% debt funding, a level of financial risk commensurate with a strong investment grade credit rating (Standard & Poor's BBB+²⁹), and a return to equity investors assuming 40% equity funding.

Our analysis confirms that cash flows from PEC (and many other ISP projects) will be insufficient to support 60% debt funding at a BBB+ credit rating (or indeed an investment grade credit rating at all) for an extended period of time. This has two implications, each of which creates a significant barrier to securing the funding necessary to proceed with the project and substantially undermines the incentive to invest. Either:

- > the project would require equity funding substantially in excess of the 40% ratio provided for in the revenue allowance, resulting in an uneconomic return to equity investors and lower than the equity

²⁹ Equivalent to a Moody's credit rating of Baa1.

returns to those set out in the AER’s RORI (the return on additional equity would be at the regulated cost of debt); or

- > the project could seek to proceed with 60% debt funding but this could only occur on a sub-investment grade (‘junk’) basis resulting in debt funding costs substantially in excess of those compensated for in the revenue allowance, causing serious adverse impacts to financial resilience increasing the risks borne by equity holders to significantly above the level contemplated in the AER’s RORI. Further, the shortfall between compensated debt costs and those incurred at sub-investment grade would have to be borne by equity holders reducing returns to equity holders below those set out in AER’s RORI.

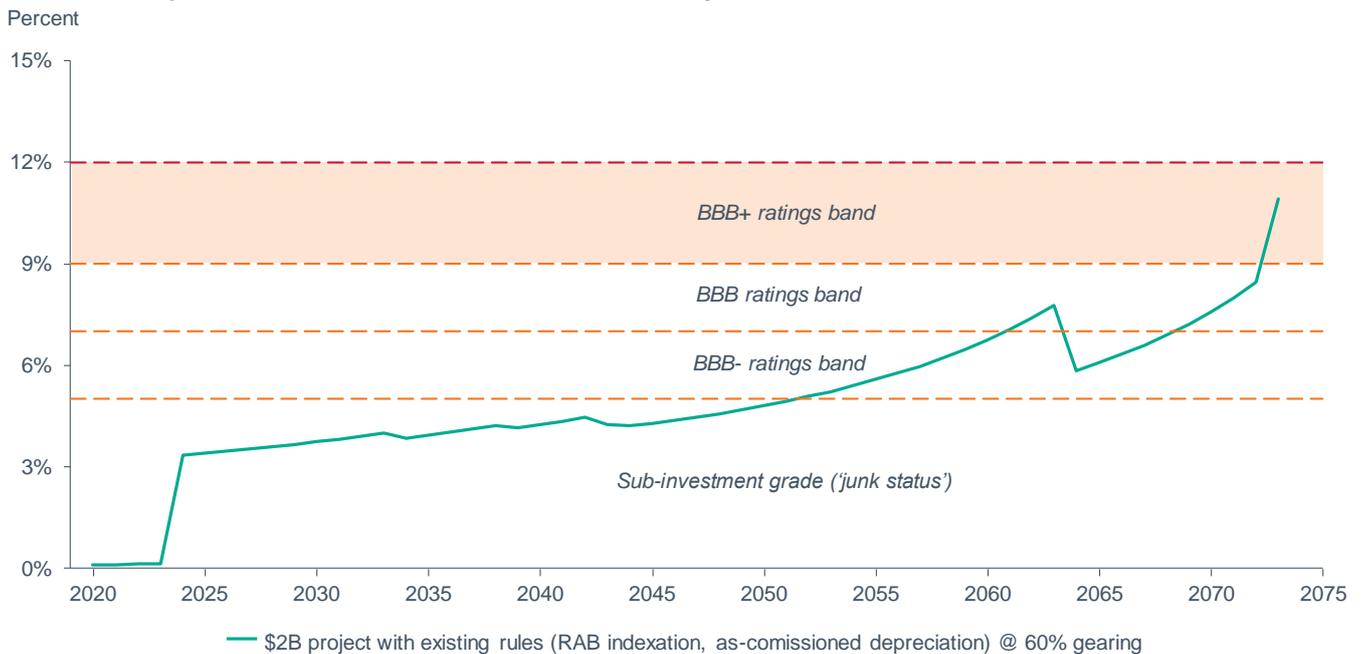
Both of these outcomes are inconsistent with the design of the regulatory framework.

Figure 3, below illustrates the problem. It shows the main credit metric (funds from operations relative to net debt, often referred to as FFO/Net Debt) that is used by credit rating agencies to assess the level of financial risk in a project with a given level of debt funding, and thereby determine its credit rating. The analysis presents the results for a \$2 billion greenfield project (a project substantially the same as PEC) where capital expenditure is 60% debt funded (the **Notional Project**).

Figure 3 demonstrates FFO to Net Debt for the Notional Project (which directly reflects the profile of the revenue allowance) is insufficient to achieve even a baseline investment grade credit rating (BBB-) for more than 20 years. The benchmark credit rating of BBB+ is not achieved until the end of the project’s life.

Figure 3: Illustrative impact on the credit rating of a benchmark efficient entity under the current arrangements

Funds from Operations / Net Debt, Illustrative \$2 Billion Project



The impact on a benchmark efficient entity’s credit metrics is more extreme when significant projects are to be built concurrently, which is expected to be the case for us over the next ten years.

These financeability issues are not simply a function of the returns determined by the AER as set out in the RORI – higher returns under the RORI would improve the situation but would not, of itself, solve this problem. The issue results from the interaction of the regulatory concepts and revenue modelling that defers revenue recovery through two mechanisms: indexation of the Regulatory Asset Base (**RAB**); and delay of the recovery of revenue for depreciation until the investment is commissioned rather than when capital expenditure incurred.

2.3 Impact of investing in the ISP projects under the current arrangements

If we invested in PEC (a typical ISP project) under the current arrangements and at benchmark gearing of 60%, we would receive a credit rating downgrade (from our current credit rating of Baa2 from Moody's³⁰). Our credit rating would fall further (to well below investment grade) if we invested in more ISP projects. The downgrade in credit rating would result in a cost of debt well above that assumed to be faced by a benchmark efficient entity with a BBB+ credit rating, and will impact our ability to attract capital due to the increased risk associated with these projects.

It is critically important for TNSPs to maintain investment metrics for stability and continuity. The ability to raise debt is critical and those same investment grade metrics also give equity markets confidence. The negative impacts of an investment downgrade are substantial and include transaction costs, managerial distraction, ability to maintain reliable operations, and decline of the firm. Expansionary activities are simply implausible until the firm stabilises.

As maturing debt in the total debt portfolio needs to be replaced, any credit rating downgrade due to the ISP investment impacts the ability to raise efficient finance for existing assets as well as any new investments.

2.4 Incenta's view

As set out in Chapter 1, we have engaged Incenta to provide expert advice on the issue and how it can be solved in a way that best promotes the NEO.

Incenta's views on the issue with the current arrangements in the NER is as follows.

“As part of the regulatory regime, financing parameters are set for a benchmark efficient firm. While regulated businesses are ostensibly free to decide what level of leverage to adopt, in reality, a regulated business's decision over leverage is constrained by the need for regulated energy networks to ensure they maintain an investment grade credit rating.

The level of gearing that can be sustained whilst meeting a particular credit rating is materially affected by the strength of the firm's cash flows. The issue at stake for TransGrid is that the cash flows associated with very large projects under the AER's standard method of depreciation (straight line depreciation applied over the economic life of the assets), and CPI indexation of the RAB, are weaker than for existing investments. Specifically, the recovery of costs is materially more deferred into future periods than for the existing assets. The more deferred nature of the cash flows under existing regulatory methods means that:

- the level of gearing that any of the ISP projects could support is materially lower than for the current business, when considered on a stand alone basis, and*
- the size of the ISP projects is such that financing just the first of the projects would require gearing to be reduced materially overall, and consequently a reduction in the rate of return on equity that is provided, and this effect would be compounded as more ISP projects are undertaken.*

The implications of this are:

- Maintaining gearing at levels consistent with the benchmark efficient entity would mean:*
 - the first of the ISP projects would likely to trigger a credit rating downgrade for a benchmark TNSP from BBB to BBB-, which would see a material increase in its cost of debt financing and reduce its safety margin significantly against the risk of falling below investment grade, and*

³⁰ Equivalent to a Standard & Poor's credit rating of BBB.

- with the additional ISP projects pressure would be created for its credit rating to fall further, in this case below investment grade, which would trigger a further (and likely more material) increase in its cost of debt financing, but more importantly, create a substantial barrier to its capacity to raise the debt finance required to action the ISP projects.
- Conversely, if the benchmark TNSP sought to maintain its investment grade credit rating by reducing gearing levels to below that of the benchmark entity it would likely have real world challenges in attracting equity finance. Specifically, the clientele of investors for network businesses are attracted to stable equity returns that are at a level that is consistent with a relatively high level of gearing. If gearing levels are reduced to maintain the credit rating, equity returns would be reduced, which would most likely be viewed unfavourably by existing and potential new providers of equity funds, in turn creating a risk to the capacity to attract the required investment funds. This potential is supported by empirical evidence of how the clientele of investors behave in Australia and also how infrastructure business will take actions, and incur costs, in order to maintain a stable flow of equity returns. We set out in detail the evidence supporting the existence of such clientele effects in Appendix A.³¹

Incenta's view is consistent with our view.

2.5 How the issue has been addressed in other jurisdictions

Regulatory authorities and policy makers in other jurisdictions have considered this issue in different ways.

Faced with a similar step change in required transmission investment, the Commerce Commission (in New Zealand) allowed for the value of assets for Transpower – NZ's government-owned transmission business – to be rolled forward without indexation.³² This effectively flattened the revenue profile faced by Transpower in an effort to help fund needed investment in its network, while doing so in a way that meant that consumers paid the same amount over the longer term (in net present value terms).

The following sets out the Commerce Commission's decision to require Transpower's RAB to be rolled forward without indexation including its reasons:

"The Commission considers that the initial RAB under Part 4 should be based on the RAB applying under the previous regulatory arrangements, consistent with the approach applying to all businesses regulated under Part 4. As set out above, initial RAB values for Transpower's assets must be established in accordance with the IM for the valuation of assets, by using the values determined under the settlement agreement as at 30 June 2011. This will include the remaining pseudo assets yet to be fully depreciated. The arguments in favour of an un-indexed approach for the roll-forward of the asset base still apply. Transpower should continue to value its RAB using an un-indexed approach under Part 4. No indexation will be applied.

The Commission considers an un-indexed approach is appropriate for Transpower for the following reasons:

- *Transpower is planning to invest over \$3 billion in upgrading and renewing the transmission network over the next five years, which will more than double the value of Transpower's RAB. This level of proposed investments is significantly larger than any of the [Electricity Distribution Businesses (EDBs)] in both an absolute and relative sense. In addition, unlike the EDBs, a significant portion of Transpower's planned investment programme involves expenditures being incurred a number of years in advance of commissioning. The level of Transpower's investments will result in it having, relative to other lines businesses, high investment programme funding requirements;*

³¹ Incenta, *Attracting Capital for ISP projects*, TransGrid, September 2020, pp. 2-3.

³² Commerce Commission, *Input Methodologies (Transpower): Reasons Paper*, December 2010, pp. 30–31.

- updating the RAB value using an un-indexed approach will, given the likely age structure of Transpower's asset base, be likely to lead to higher revenues for Transpower over the near term. This level of revenue will be likely to be better matched to Transpower's investment needs; and
- Transpower's capex is subject to ex ante and ex post approval processes. Where minor capex is above the ex ante approved level, or does not fully comply with Transpower's approval processes, Transpower will make a separate [economic value (EV)] account adjustment to fully offset the revenue impact of the value of the excess expenditure over the life of those assets. Unapproved overexpenditure on a major capex project must be excluded from each annual calculation of ex post economic gain or loss. Transpower will similarly make a separate EV account entry to fully offset the revenue impact of the value of the excess expenditure over the life of the project assets.

Some of the above factors might be more relevant over the short to medium term than over the long-term (e.g. because of Transpower's current tranche of investment). In the case of EDBs, the Commission considers the greater protection against inflation risk that is afforded by CPI-indexation is sufficient reason to prefer such an approach over an un-indexed approach. In Transpower's case this factor is currently outweighed by the factors discussed above. In the longer term, some of the differences between Transpower and EDBs might become less significant, in which case consideration of greater alignment in some of the approaches for electricity distribution services and electricity transmission services might be warranted. Given that an un-indexed approach is already implemented under the terms of the settlement agreement, changing valuation approaches may incur additional compliance costs. Continuation of an un-indexed approach would prolong the benefits associated with aligning the regulatory and financial accounting records.”³³

With an expected fifty percent increase in our RAB in the next few years and a doubling in the following five years, the predicament facing TransGrid is very similar to that which was faced by Transpower.

While the Commerce Commission broadly adopted an 'as commissioned' capital expenditure basis for rolling forward the RAB, the issue of whether depreciation should be calculated on an 'as incurred' basis was not specifically considered.³⁴

In its expert report, Incenta identifies additional methods that have been adopted to address the issue including by Ofgem and Ofwat in Great Britain.³⁵ The different options we have considered to address the issue are set out in section 3.3 of this rule change request.

³³ Commerce Commission, Input Methodologies (Transpower): Reasons Paper, December 2010, pp. 30-31.

³⁴ Ibid. p. 46.

³⁵ Incenta, *Attracting Capital for ISP projects*, TransGrid, September 2020, p. 13.

3. Proposed changes and rationale

This Chapter sets out the proposed rule changes, in the form of a derogation, and the reasons for these changes.

3.1 Proposed changes

TransGrid proposes the following changes to the NER, in the form of a participant derogation, for our share of the transmission projects identified in the ISP as actionable:

- > AER to roll forward the RAB for TransGrid's share of the ISP projects without indexation (this removes the need for the AER to make a subsequent negative inflation adjustment to prevent double compensation of inflation).
- > AER to calculate regulatory depreciation on an 'as incurred' basis rather than on an 'as commissioned' basis for TransGrid's share of the ISP projects.

The rule change request provides for transitional arrangements to provide that it would apply to VNI minor and Project EnergyConnect (PEC), which are likely to have already commenced the contingent project process³⁶ at the time the AEMC makes its decision on the rule change, as well as TransGrid's share of all ISP projects subsequently approved through the regulatory process.

The key aspects of the proposed rule are:

- > The creation of a new 'ISP Projects RAB' that is separate to TransGrid's current RAB. The ISP Projects RAB will include the value of all assets associated with 'TransGrid's ISP Projects'.
- > TransGrid's ISP Projects are defined as any transmission project in NSW³⁷ that has not had revenue approved by the AER at the date the rule change is submitted to the AEMC and that:
 - is identified in an ISP as an actionable ISP project or an existing actionable ISP project (as defined in clause 11.126.1); and
 - for which the AER approves forecast capital expenditure under Chapter 6A (including under the contingent project framework).
- > Modifications to existing rules that require the AER to index the RAB to require the AER to roll forward the ISP Projects RAB without indexation.
- > The removal of the existing requirement for the AER to make a negative inflation adjustment to prevent double compensation of inflation in respect of the ISP projects RAB.
- > A requirement on the AER to calculate regulatory depreciation under the post-tax revenue model based on as incurred forecast net capital expenditure for TransGrid's ISP projects (the current approach is to calculate depreciation based on as commissioned forecast net capital expenditure).
- > A provision that specifies that references to the RAB in other provisions of the NER apply, in respect of TransGrid, to each of the current RAB and the ISP Projects RAB separately.
- > A transitional provision under which the AER is required to make a revenue adjustment decision in respect of any TransGrid ISP Projects in respect of which the AER has commenced public consultation on a contingent project process after 1 September 2020 but before the rule commences (transitional ISP project). The adjustment mechanism would require the AER to make an adjustment to TransGrid's allowed revenue in the remaining years of the current regulatory control period for an amount equivalent to the difference between:

³⁶ Under clause 6A.8.2 of the NER.

³⁷ This includes the Australian Capital Territory which is incorporated into the NSW region of the NEM.

- the incremental revenue that TransGrid would have been entitled to in the current *regulatory control period* in respect of the transitional ISP project if the AER’s decision under clause 6A.8.2 was based on an unindexed RAB and depreciation calculated on an ‘as incurred’ forecast net capital expenditure basis; and
 - the incremental revenue allowance approved by the AER in its determination under clause 6A.8.2 in respect of the transitional ISP project.
- > A transitional provision under which the AER is required to amend the post-tax revenue model and the roll forward model to reflect the participant derogation.

The derogation would expire on the date TransGrid’s lease with the NSW Government ends (including under an extension of term of that Lease).

3.2 Rationale for the proposed changes

3.2.1 Our view

The financeability issues can be mitigated by removing indexation of the RAB and revenue for depreciation being able to be recovered as capital expenditure is incurred (the majority of the impact by removing RAB indexation). Rolling forward the RAB without indexation and calculating regulatory depreciation on an ‘as incurred’ basis for ISP projects would significantly improve the stand alone credit metrics of the these projects by more closely aligning the timing of revenue recovery with when financing costs are incurred for these projects.

Figure 4, below, shows impact on a benchmark efficient entity’s credit rating for the Notional Project, but with RAB indexation removed and depreciation shown on an ‘as incurred’ basis (i.e., commencing from when capital expenditure occurs).

Figure 4: Illustrative impact on the credit rating of a benchmark efficient entity under our proposed arrangements

Funds from Operations / Net Debt, Illustrative \$2 Billion Project

Percent

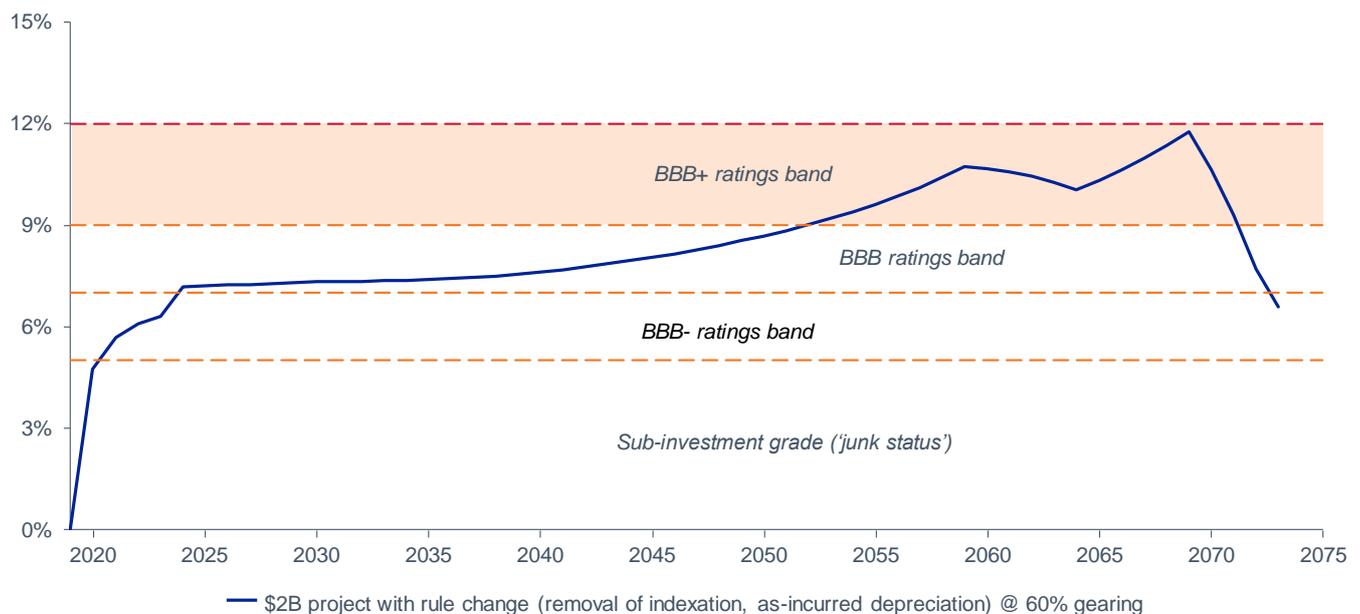


Figure 4 shows that, even with the proposed changes, the Notional Project is unlikely to achieve the benchmark credit rating of BBB+ until quite late in its life. However, it could, with prudent capital management, nonetheless achieve an investment grade rating sufficiently early to overcome the barrier to securing the capital necessary to proceed with the project.

The rule change request does not seek to allow us to obtain an improved credit rating in line with the AER's benchmark credit rating for setting the rate of return. It is our reasonable expectation that it will allow us to maintain our current credit rating.

Table 1 shows the ten year average credit metric (FFO/ND) for different scenarios where:

- > Debt can be sourced using a BBB+ credit rating, which is the credit rating that the AER uses to determine the cost of debt.
- > Debt can be sourced using a BBB credit rating, which is equivalent to our current rating of Baa2.

It shows that in funding a typical ISP project on a 60/40 debt to equity basis at our current credit rating with a Baa2/BBB cost of debt, we can reasonably expect to maintain that rating if indexation of the RAB is removed and we adopt regulatory depreciation calculated on an 'as incurred' basis. We are forecast to have a FFO/ND of 7.76% (10-year average) under the proposed rule which would be the same as the FFO/ND for our current RAB.

Table 1 also shows that the BBB+ credit rating that the AER assumes when setting the return on debt (which requires a FFO/ND of 9%) is not achieved in any of the scenarios set out. The proposed changes would prevent a deterioration in a benchmark efficient entity's credit rating.

Table 1: Credit metric impact of proposed changes

Scenario	FFO/ND 10 year average Baa1/BBB+ Cost of Debt	FFO/ND 10 year average Baa2/BBB Cost of Debt
Existing RAB	7.83%	7.76%
Existing RAB plus <ul style="list-style-type: none"> • \$2bn investment 	6.95%	6.88%
Existing RAB plus <ul style="list-style-type: none"> • \$2bn investment, and • as incurred depreciation (on \$2bn investment) 	6.98%	6.91%
Existing RAB plus <ul style="list-style-type: none"> • \$2bn investment (unindexed) and • as incurred depreciation (on \$2bn investment) 	7.73%	7.76%

Note: An FFO/net debt of 8% is required for TransGrid to maintain its current credit rating of Baa2/BBB. An FFO/net debt of 9% is required to achieve the benchmark credit rating that the AER uses to set the rate of return, that being Baa1/BBB+. We are not proposing to improve its credit rating through this rule change.

It is important to note that this solution removes barriers to securing capital without increasing the overall regulated return or the transmission costs to be recovered over the life of the project (in present value terms). This change would yield a revenue profile that is neutral in present value terms at the AER's RORI, but enables efficient financing of the projects which will result in consumers accessing the benefits set out in the ISP.

There would be an increase in the transmission component of the bill in the short term compared to the current approach. For example, we estimate that the application of the proposed rule change to PEC will

result in consumers paying, on average, an additional \$3 per household per year in transmission charges for the remaining years of TransGrid's current regulatory period because of the rule change.

However, the costs of the projects for consumers has to be considered alongside the benefits they will receive from the delivery of the ISP projects which will place downward pressure on the prices they pay overall. The costs and benefits of the rule change are discussed in Chapter 5 of this rule change request.

We undertook detailed modelling of the issue and potential options for addressing it. The results of this modelling is provided with this rule change request.

3.2.2 Supporting expert advice from Incenta

Incenta provides the following overarching view:

"The adverse impact on the capacity to access capital that is caused by very large projects can be ameliorated or remedied by changing the regulatory settings to bring-forward cash flows. This, in turn, will increase the level of gearing that can be maintained.

- Whilst there are a number of tools available for this, we support TransGrid's view that removing indexation of the RAB is the preferred method to advance cash flows. We also agree with TransGrid that the further measure of applying depreciation on an "as incurred" rather than "as commissioned" basis would be an appropriate means of improving credit metrics during the construction phase of an ISP project.*
- We observe that these measures (separately and in combination) present an NPV-neutral solution to the problem, meaning that they merely alter the time profile of revenue rather than its value. In addition, the combination of these solutions provides just enough bringing-forward of cash flow to remedy the issue. Moreover, both measures can be accommodated within the AER's standard regulatory calculations without adding undue additional complexity."³⁸*

On the removal of RAB indexation, Incenta states that:

"TransGrid's modelling demonstrates that removing the current indexation of the RAB is very effective means of improving the conditions for firms to access capital when undertaking very large projects. This is because it would be expected to deliver a particularly meaningful improvement in the timing of the cash flow, and so resulting credit metrics, and come close to maintaining the credit metrics of a benchmark entity after undertaking the ISP project to their pre-existing level."³⁹

"Of the options modelled by TransGrid, as noted above the removal of indexation comes closest to preserving the credit metrics of a benchmark TNSP after undertaking the ISP projects. Therefore, this also implies this solution does a better job at enabling the existing benchmark equity returns to continue and so provide the capacity to attract equity investors. We would also note that this measure also provides an enduring improvement to credit metrics, so that there is no drop-off in metrics in future periods,"⁴⁰

Incenta makes the following comments on the use of as incurred capital expenditure to calculate depreciation of the RAB:

³⁸ Incenta, *Attracting Capital for ISP projects*, TransGrid, September 2020, p. 3.

³⁹ *Ibid.* p. 18.

⁴⁰ *Ibid.* p. 19.

“Depreciation “as incurred” improves the project revenue profile during construction phase and so before commissioning. This change therefore aids in the potential that benchmark debt and equity conditions can be preserved during the construction period. As construction can span a number of periods, measures to address this short term need are relevant.”⁴¹

“TransGrid’s modelling shows that applying depreciation “as incurred” for the stand alone project materially improves the project revenue profile during construction by bringing forward depreciation during the construction phase. Whilst on its own, however, this option would be insufficient to preserve the credit metrics of a benchmark entity – as it does nothing to address the post construction position – it has substantial merit as a measure in combination with one of the alternative measures.”⁴²

In considering all of the different options for addressing the issue, Incenta states that:

“It is our view that the best option to address the financeability issues that arise for ISP projects is to remove indexation of the RAB for these projects and to combine this with depreciation on an as incurred basis, also restricted to the ISP projects...”

From the table above, it is clear that these combination of measures come very close to preserving the credit metrics of the benchmark entity in the context of one ISP project, and so it would be expected that subsequent projects should similarly be financeable.

A benefit of using the removal of indexation to address financeability is that makes a material improvement to the timing of cash flows but does not compromise the integrity of the PTRM or how depreciation is undertaken. Specifically, it does not require an artificial adjustment the economic life of the assets, or a different profile of depreciation to the standard approach that is applied to all other investments; i.e. straight line depreciation is preserved. Further, how compensation for inflation is to be provided is a valid choice with advantages and disadvantages, and so where change can be justified depending on the specific need. To this end, we note that compensation for depreciation in “cash” (equivalent to no indexation) is already the position in some regulatory regimes, particularly in North America, and has been used as a tool to address financeability in a similar situation for the transmission business in New Zealand, and so is a measure that should not be considered unusual. In addition, as this option preserves the straight line depreciation method, credit metrics will naturally improve as the ISP projects age, meaning that there can be comfort that measures to address the immediate credit metrics will not come at the expense of greater problems in the future.

We note that the removal of indexation alone may be expected to still leave financing issues for a benchmark business during the construction phase, which is not an immaterial matter given that the construction for major transmission projects can span multiple years (up to five and sometimes more). Accordingly, we agree that it is sensible to combine the removal of indexation with an additional measure to target the short term issue. The measure that TransGrid proposes – move to an “as incurred” treatment of depreciation – is a relatively modest change that specifically addresses near term cash flow, and so is appropriate for this task. Moreover, like the removal of indexation, applying an “as incurred” treatment of depreciation for ISP projects is straightforward to accommodate within the structure of the PTRM given that capital expenditure

⁴¹ Ibid. p. 19.

⁴² Ibid, p. 20.

measured on an “as incurred” basis is already used to calculate the return on assets part of the annual revenues.

Lastly, we comment once more that all of the measures that have been assessed – and those that have been recommended – are NPV neutral and so there is no consequence for the total cost of the solution. Rather, the effect is only on the time path of revenues and prices.”⁴³

We agree with Incenta’s view, including its reasons, that the best option to address the financeability issues that arise for very large projects is to remove indexation of the RAB where there is no change to the other key drivers of financeability such as the rate of return or treatment of inflation. We also agree with Incenta’s view that we are able to receive revenue for depreciation for capital expenditure as it is incurred for the ISP projects to address financing issues during the construction phase of a project.

Section 3.3 below, sets out the other options considered by us in coming to our view on the proposed rule changes.

3.3 Other options considered

We have explored a number of other options to address the issue.

These are:

- > Financial assistance from governments or the Clean Energy Finance Corporation (**CEFC**). Consumer groups asked us to consider this option in our discussions with them on the rule change request.
- > Accelerating regulatory depreciation.
- > Shortening regulatory asset lives.
- > Changing capitalisation policy/ classification of expenditure.

A CEFC or Government loan is not expected to be an appropriate long-term solution as:

- > We understand the CEFC currently lends at market rates, so it would not solve the problem.
- > A TNSP’s credit metrics apply to and are calculated for the overall business. Taking on a significant volume of debt for an ISP project will still count towards our credit metrics, even if that debt comes from a non-market provider.
- > We are not able to set up a special purpose vehicle for debt provided by CEFC or a state government as this is explicitly prohibited by the terms of our lease with the NSW Government.

More generally, addressing the issue using a non-market solution such as a CEFC or Government loan also undermines the market-based principles of the regulatory regime. Non-market government debt or contributions should not be needed to address a market failure due to an issue in the regulatory framework. The issue should be addressed through changing the regulatory framework.

A CEFC or Government loan would also shift the burden to tax payers. Our proposed approach is NPV neutral over the life of the ISP projects so is the most efficient way of addressing the problem.

An assessment of the other options we have considered is set out in the Incenta expert report. Information on the other options we have considered can also be found in the attached report summarising results of modelling we have undertaken.

⁴³ Ibid, pp. 23-24.

3.4 Rationale for a TransGrid derogation

Whilst the issue we have identified is likely to occur for any TNSP that is required to undertake the scale of investment that we are about to undertake, we are seeking a participant derogation from the NER which would apply only to us.⁴⁴

This approach has been taken because:

- > We need to address the immediate issue of proceeding with investment in PEC and HumeLink.
- > The scale of investment required of us is significantly higher than any other business at the current time.
- > This is consistent with the approach that we have discussed with the AER.

⁴⁴ A participant derogation may be requested under section 91(5) of the National Electricity Law.

4. Costs and benefits of the rule change

This section sets out the costs and benefits of our rule change request, in particular the impact of the rule change request on the transmission component of consumers' bills and the market benefits that are to be obtained should our share of the ISP projects go ahead.

4.1 Impact on the transmission component of consumers bills

The change to the timing of revenue recovery does not increase costs to customers over the life of the project, as the same amount of revenue will be recovered on a present value basis. Nor does it increase the regulated return provided under the existing TransGrid revenue determination or the RORI. The change to timing reduces the deferral of revenue to improve the ability to access efficient finance.

The transmission charges to distribution network service providers and consequently retailers will increase marginally compared to no change. However, the ISP projects are designed to deliver lower total bills to customers over time.

We estimate that the application of the proposed rule change to PEC will result in consumers paying, on average, an additional \$3 per household per year in transmission charges for the remaining years of TransGrid's current regulatory period because of the rule change.

However, the rule change will facilitate investment in ISP projects that would otherwise not be financeable. The benefits to consumers of having the ISP projects in place have been identified to be significantly greater than the increase in transmission charges by AEMO.⁴⁵ FTI, the consultant that has reviewed the costs and benefits for us of PEC, estimates that the net cost saving to a household in NSW arising as a result of PEC would, on average, be between \$58.40 and \$63.90 per year.⁴⁶

4.2 Net market benefits from the ISP projects

The ISP is a whole of system plan for the efficient development of the power system that achieves power system needs for a planning horizon of at least 20 years for the long-term interests of the consumers of electricity.⁴⁷ It identifies an optimal development path for the NEM, including ISP projects and development opportunities.

In its final 2020 ISP, AEMO identifies that the optimal development path will deliver \$11 billion in net market benefits and meet the system's reliability and security needs through its transition.⁴⁸ Included in the optimal development path are a number of major transmission projects that need to be delivered by us.

A number of these are to be delivered in the next one to five years, those being:

- > QNI minor (this project has already received AER approval and commenced construction)
- > VNI minor
- > PEC
- > HumeLink
- > Central West Orana REZ transmission link, and
- > VNI West.

⁴⁵ AEMO, *2020 Integrated System Plan*, July 2020, pp. 97.

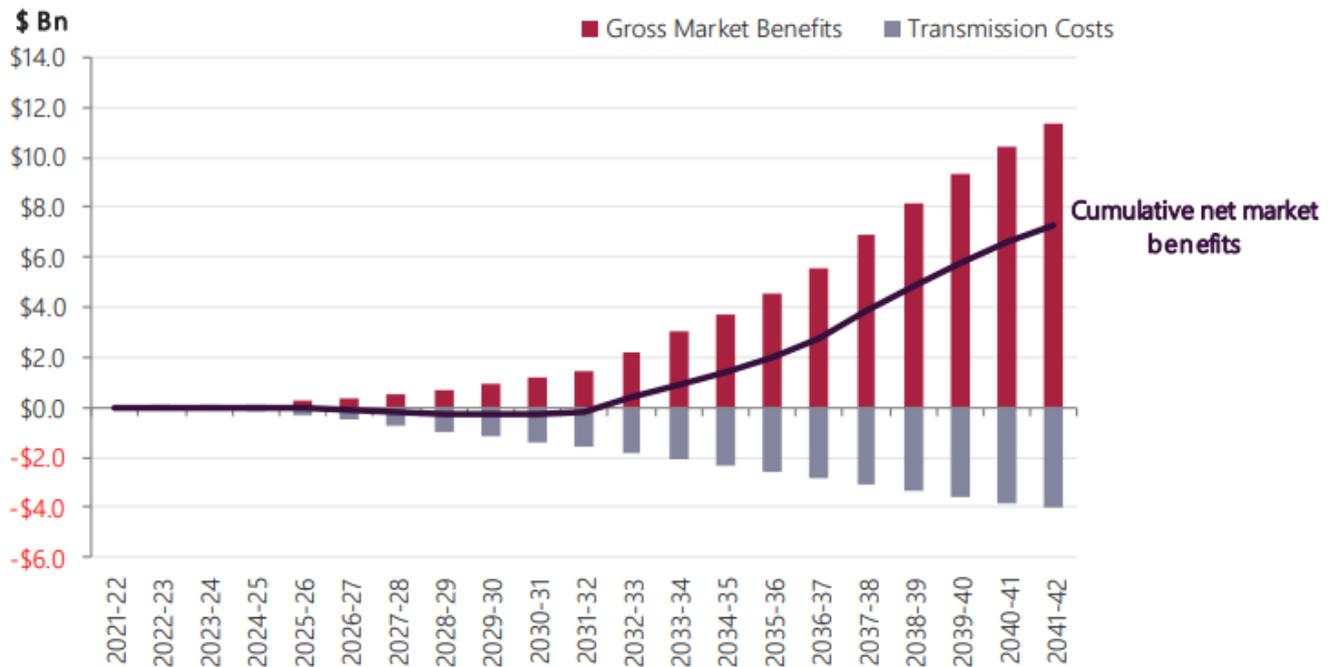
⁴⁶ FTI, *Assessing the benefit of interconnectors, A report for TransGrid*, 9 September 2020, p. 13.

⁴⁷ NER 5.22.2.

⁴⁸ AEMO forecasts \$11bn in net market benefits in its central scenario. The benefits could be larger or smaller if a different scenario eventuated.

Our investment in the ISP projects is therefore essential for the \$11 billion in net market benefits of the optimal development path in the ISP to be achieved and to ensure the reliability and security of the system is maintained through the energy market transition. Figure 5 below shows the expected net market benefits of the optimal development path in the ISP over time.

Figure 5: Net market benefits from the ISP optimal development path, central scenario



Note: Based on development path 8 outcomes in ISP.
 Source: AEMO, 2020 Integrated System Plan, July 2020, pp. 97.

Net market benefits are also identified for each individual actionable ISP project through the RIT-T process.

4.3 Administrative costs to TransGrid and the AER of implementing the changes

There are no significant administrative costs for us arising from the rule change request.

We consider the administrative costs for us to receive revenue for our share of the ISP projects in a different manner to the rest of our capital expenditure are not significant.

The rule change would also require that the AER amend its post-tax revenue model and roll forward model. It does not compromise the integrity of the post-tax revenue model and roll forward model or the method of calculating depreciation. That is, it does not require an artificial adjustment of the economic life of the assets, or a different profile of depreciation to the standard approach that is applied to all other investments for example. Straight line depreciation is preserved. In our opinion, this minimises the AER’s administrative costs associated with the rule change.

5. Assessment against the NEO

This Chapter sets out the costs and benefits of the proposed rule changes, in the form of a derogation, and how the proposed changes promote the NEO as required by the NEL.

5.1 The rule making test

When considering whether to accept the rule change proposal the AEMC must determine whether it considers the proposed changes will, or are likely to, contribute to the achievement of the NEO.⁴⁹

The NEO is to promote efficient investment in, and efficient operation and use of, electricity services for the longer term interests of consumers of electricity with respect to:

- > price, quality, safety, reliability and security of supply of electricity, and
- > the reliability, safety and security of the national electricity system.⁵⁰

5.2 Assessment against the NEO

Our proposed rule change relates to the efficient investment in electricity services in the long-term interests of consumers. In particular, the rule change seeks to facilitate the efficient investment in actionable ISP projects in the NSW region of the NEM⁵¹. Efficient investment requires access to efficiently priced debt and equity finance so that regulated businesses have the capacity to deliver on the service requirements that are demanded by consumers.

Incenta provides the following comments in support of the rule change promoting the NEO:

“Access to efficiently priced debt and equity finance is needed so that regulated businesses have the capacity to deliver on the service requirements that are demanded by customers. Specifically, ensuring that the benchmark efficient entity has access to deep and efficiently priced debt and equity will promote the NEO by:

- *Maintaining the incentive on regulated businesses to investigate and invest in new major capital programs that bring material benefits to consumers across the entire NEM. Conversely, where deferred cash flow impacts on the capacity to attract capital, a business would be better off avoiding those projects and only doing smaller but less beneficial projects. This approach would see it meet its regulatory requirements while still retaining its equity investors and also an investment grade credit rating by avoiding very large capital expenditure requirements. However, it would come at the cost of the material NEM wide benefits that are associated with projects that have been identified by the ISP, such as the PEC.*
- *It would promote productive efficiency by facilitating access to efficiently priced and reliable sources of debt and equity finance, and so minimising the costs to society for investment.”⁵²*

Incenta also comments that:

“Importantly, bringing forward cash flows to support businesses accessing capital does not create any additional cost to consumers over the long term. That is, it only impacts on the timing of

⁴⁹ Section 88 of the NEL.

⁵⁰ Section 7 of the NEL

⁵¹ This region also includes the Australian Capital Territory.

⁵² Incenta, *Attracting Capital for ISP projects*, TransGrid, September 2020, pp. 14.

revenue to the regulated business, and not the overall value of the investment. As such, the change is NPV neutral. It follows, therefore, that bringing forward cash flows is also neutral in the context of the long term interests of consumers with respect to price.

An implication of bringing forward cash flows is that it will impact on the profile of transmission prices. That is, it will cause prices to be relatively higher early on and relatively lower in later years than would occur under the status quo. It is our view, however, that in the context of ISP projects that this change in the profile of prices is unlikely to have any material impact on the promotion of the NEO.

- First, we note that the sheer size of the capital expenditure necessary for ISP projects means that prices will inevitably rise because of the project, with or without bringing forward cash flows. As such, it is only the marginal increase on a price rise that is caused by the bring forward that is relevant.
- Secondly, and more importantly, the objective of the rule change is to ensure the capacity to finance the ISP projects, and so the relevant counterfactual is a world in which there is a serious risk that the ISP projects may not be delivered, or are not delivered in a timely manner. Accordingly, any apparent distortion from efficient use that may be caused by a shift in the profile of prices would need to be weighed against the very large benefits that are expected from the ISP projects.

It is also our view that it is not inappropriate for customers to pay prices as are necessary to preserve the capacity for firms to access capital needed for ISP projects. As indicated above, ultimately the financing function of a transmission business is undertaken to deliver investments that are for the direct benefit of end use customers. Network businesses are required to bear the costs of these investments over their entire economic life, the quid pro quo from customers is that they also commit to assisting to maintain the conditions needed to attract capital over that time.”⁵³

We agree with Incenta on how the rule change request will contribute to the NEO.

5.3 Assessment against the revenue and pricing principles in the NEL

In addition to the NEO, the AEMC must also take into account the revenue and pricing principles in the NEL when considering whether to accept the rule change request.⁵⁴ The revenue and pricing principles include the recovery of efficient costs, incentives to promote efficiencies and that prices should reflect returns commensurate with the risks involved in providing services.⁵⁵

We consider the rule change request is consistent with the revenue and pricing principles in the NEL for the following reasons:

- > By providing a benchmark efficient entity a reasonable opportunity to recover at least the efficient costs it incurs in providing network services.⁵⁶ A requirement for maintaining an expectation of efficient cost recovery is that the cash flows generated by tariffs are consistent with maintaining access to investment grade debt, within the constraint that the level of gearing needs to remain at a level that supports the returns needed to attract equity investors. The large capital expenditure requirements of ISP projects mean that at the benchmark efficient entity’s level of gearing, which is necessary to attract investors, the cost of debt would materially exceed the cost of debt assumed by the AER in setting prices. This cost

⁵³ Ibid. pp14-15.

⁵⁴ The revenue and pricing principles are set out in section 7A of the NEL.

⁵⁵ Section 7A of the NEL.

⁵⁶ Clause 7A(2) of the NEL.

increase occurs because we would be unable to sustain an investment grade credit rating in this scenario.

- > Making changes to the NER that better match the timing of revenue recovery with when financing costs are incurred will provide incentives for a benchmark efficient entity to invest in large projects that deliver material benefits across the NEM, and so is consistent with the revenue and pricing principle that a regulated network service provider be provided with effective incentives to promote economic efficiency, including efficient investment in a transmission system.⁵⁷ This is because such changes would enable a benchmark efficient entity to maintain the financial metrics needed to attract the large volume of debt and equity finance that is required for the forthcoming capital works program.
- > The rule change also supports the principle that regard should be had to the economic costs and risks of the potential for under and over investment.⁵⁸ The current regulatory framework creates disincentives for major transmission investment, which may result in under-investment in the transmission system through the lack of timely investment in projects that deliver material market benefits. Conversely, because our proposal is NPV-neutral it would not promote over-investment in the transmission network.

⁵⁷ Clause 7A(3) of the NER.

⁵⁸ Clause 7A(6) of the NER.

6. Why the rule change is urgent

We consider that this rule change request is a request for an urgent rule under section 87 of the National Electricity Law (NEL) and should be it be considered by the AEMC under the expedited pathway under section 96 of the NEL.

An urgent rule is a rule relating to any matter or thing that, if not made as a matter of urgency, will result in that matter or thing imminently prejudicing or threatening:

- a. the effective operation or administration of the wholesale exchange operated and administered by AEMO, or
- b. the safety, security or reliability of the national electricity system.

The rule change request is a request for an urgent rule because the rule change is required to enable us to establish finance for the ISP projects and meet deadlines that have been set for us by the South Australian Government for PEC and the NSW Government and the Federal Government in respect of HumeLink in time to ensure they are delivered consistent with maximising benefits to customers, and in line with the expectations of the South Australian Government (for PEC), the NSW and Federal Governments (for HumeLink), and AEMO for the ISP overall.

Our reasoning is set out in more detail as follows:

- > The rule change request is urgent because it is required to enable us to establish finance and make a positive final investment decision on PEC by no later than January 2021. This would allow PEC to be in place by 2022 and within the timeframes required by the ISP and the South Australian Government. A delay of one month in the making of the PEC final investment decision is likely to result in a delay of up to six months in delivery of the project. The AEMC's timeframe for a standard rule change process is approximately six months which would mean that if the rule change is not expedited as an urgent rule, a decision on the rule change would not be made in time for us to make an investment decision on PEC by no later than January 2021. This would result in the project being delivered after the timeframes required by the ISP and the South Australian Government.
- > If we do not invest in PEC in a timely manner, the security and reliability of the national electricity system will be prejudiced. This would have a flow on effect and would risk prejudicing the timely delivery of renewable projects and the ISP as a whole which will put the security and reliability of the national electricity system at further risk:
 - AEMO describes the ISP projects on the optimal development path as “nationally significant and essential investments in the electricity system to ensure the system meets its security and reliability requirements with the least cost and lowest regret to consumers”.⁵⁹
 - The South Australian Government has stated that PEC is critical to maintaining energy security in South Australia.⁶⁰
- > The rule change is also urgent because it is required to enable us to establish finance and make a positive final investment decision on HumeLink. This decision is required by late 2021 in order for HumeLink to be in place in time for the completion of Snowy 2.0 in 2025 and within the timeframes required by the ISP and the NSW and Federal Governments.

⁵⁹ AEMO, Draft 2020 ISP, 12 December 2019, p. 6; AEMO, 2020 Integrated System Plan, July 2020, p. 8.

⁶⁰ Government of South Australia, Hon Dan van Holst Pellekaan MP Minister for Energy and Mining, *SA-NSW Interconnector and Smart Solar “critical” to maintain energy security*, Media release, 19 June 2020.

7. Contact details

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