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Financeability of ISP Projects

Australian Energy Market Commission

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FINAL REPORT

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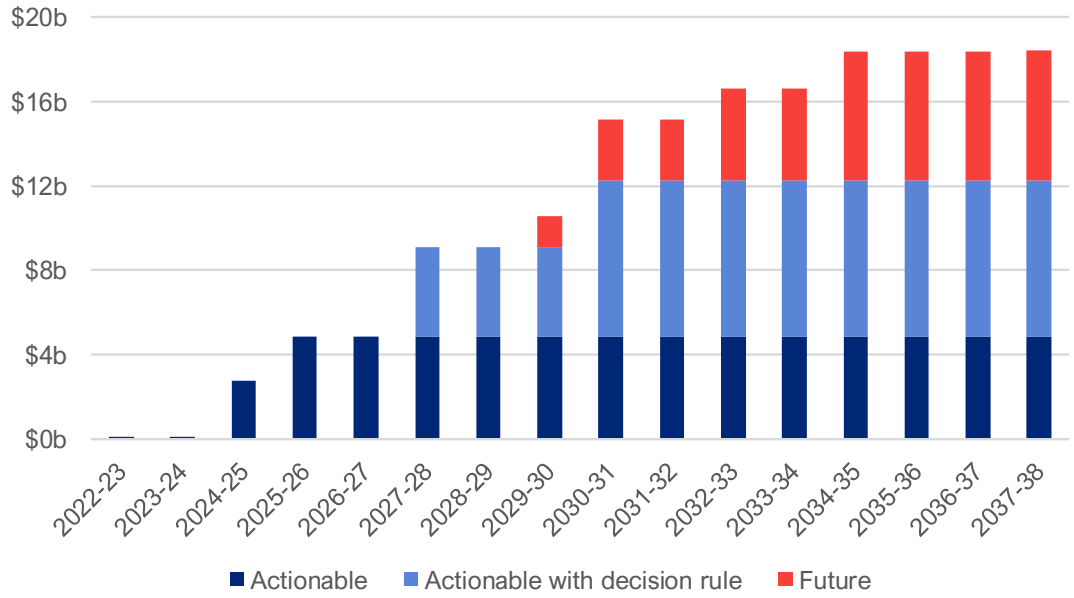
EXECUTIVE SUMMARY

CEPA has been engaged by the Australian Energy Market Commission (AEMC) to provide advice on the financeability of Integrated System Plan (ISP) projects. The AEMC has sought this advice in the context of two rule change requests that have been put forward by TransGrid and ElectraNet, the Transmission Network Service Providers (TNSPs) for New South Wales (NSW) and South Australia (SA) respectively. Both TNSPs are developing plans for significant investments in new transmission infrastructure that has been identified in the Australian Energy Market Operator's (AEMO) Integrated System Plan (ISP), as illustrated in the figure below. The TNSPs argue that, due to certain aspects of the current regulatory framework, the ISP projects will not be financeable.

Figure E.1: 2020 ISP - Cumulative investment profile, all ISP projects ($real 2018-19)



Source: AEMO, 2020 ISP, Table 14. This figure reflects central estimates of project costs. Where investment timing is uncertain, we have applied the lower temporal bound of the provided range.

Why has a rule change been proposed?

TransGrid and ElectraNet claim that a 'benchmark efficient entity', with 60% notional gearing, would not be able to finance the ISP projects at the cost of capital allowed by the Australian Energy Regulator (AER).

The TNSPs argue that this is due to two particular elements of the regulatory framework, namely that:

- Remuneration for inflation is achieved (in effect) by providing a real return on a regulatory asset base (RAB) that is indexed to inflation;[1]

[1] In practice, the AER achieves this outcome through the application of a nominal rate of return to an inflation-indexed RAB. A deduction is then made to the regulatory depreciation allowance, to remove the expected level of inflation that is reflected in the nominal rate of return. This adjustment is to avoid double counting the allowance for inflation. This approach results in the same outcome as a real rate of return applied to an indexed RAB (notwithstanding the question of how to correctly estimate the real rate of return, which depends on the assumed level of expected inflation).

- Remuneration for depreciation from the point when new assets are commissioned, rather than when capital expenditure is incurred (i.e., on a 'capex commissioned' rather than 'capex incurred' basis).

According to the analysis put forward by the TNSPs, these features of the regulatory framework mean that a notional business, undertaking an ISP investment profile at 60% gearing and the cost of capital determined by the AER, would not have financial performance consistent with the notional BBB+/Baa1 rating.[2] The TNSPs argue that, as a result a financeability problem for the notional company arises because either:

- the cost of debt allowance is not high enough to reflect a benchmark efficient entity's actual cost of debt, because the notional company's credit rating would be lower than BBB+/Baa1; or
- if the notional TNSP reduced its gearing (i.e. increased the proportion of equity funding) to maintain the target credit rating, the AER's rate of return would not provide sufficient compensation to equity, as it is based on the notional capital structure.

The TNSPs conclude that due to this perceived inconsistency in the assumed financing arrangements of the notional entity, there is a barrier to service providers recovering their efficient cost of capital, as is required under the Revenue and Pricing Principles set out in the National Electricity Law (NEL). Therefore, the companies argue that the ISP projects are not financeable under the current arrangements.

To remedy this issue, the TNSPs have requested a participant derogation, that would bring forward revenue recovery for their actionable ISP projects through two changes to the current arrangements:

- Remove indexation of the RAB for their actionable ISP projects. This would require the application of a nominal WACC to an unindexed RAB.
- Require that depreciation be calculated on an 'as capex incurred' basis for their actionable ISP projects, rather than on an 'as capex commissioned' basis.

The TNSPs claim that these changes will not result in additional revenues being recovered from consumers, as they will be neutral in net present value (NPV) terms.

Our approach

We have taken a four-step approach to responding to the questions set out in our terms of reference.

The first stage of our analysis is to consider **whether there is a financeability problem**. To answer this question, we have constructed a simple financial model to assess how the TNSPs' allowed revenue would change, relative to the status quo, if the rule change request was implemented. We use this analysis to assess the financial performance of a TNSP in terms of the key credit metrics used by Moody's, assuming that this TNSP was financed at the notional 60% gearing level. We consider how these credit metrics could be expected to evolve if the notional TNSPs invest in the identified ISP projects for TransGrid and ElectraNet, with and without the proposed rule change. We interpret the implications of these results for the financeability of ISP projects, drawing on our experience of how credit ratings agencies analyse utilities and how regulators in other jurisdictions approach financeability assessments.

In the second stage of our analysis we address **how the AER and TNSPs could respond** to an identified financeability concern. To inform this assessment, we have drawn on a number of case studies from other sectors and jurisdictions. The results of this stage inform a judgement on whether there are alternative options to the proposed rule change that could be considered, within the current regulatory framework established under the NEL and National Electricity Rules (NER). More briefly, we also touch on alternative arrangements that might be considered, outside the existing rules framework.

[2] The notional credit rating of BBB+ refers to the rating scale used by Standard & Poor's (S&P's), whereas Baa1 refers to Moody's. A rating of BBB- or above on the S&P's scale, and Baa3 or above on Moody's scale, is considered an 'investment grade' credit rating. A full comparison between S&P's and Moody's scales can be found in Appendix A.

As a third step, we consider the **key impacts** of the proposed rule change for customers, as well as for the TNSPs and their investors. Within our analysis of impacts, we have focussed on the magnitude of changes in the profile of network revenues and charges, considered potential changes in risk allocation, and considered how the proposed rule change might affect characteristics of TNSPs that are valued by investors. We have also sought to identify, at a more practical level, whether the rule change proposal could have broader implications for the application of the building blocks model by the AER.

Finally, we bring together the findings from these three strands of analysis to develop our **overall assessment** of whether the rule change is consistent with the National Electricity Objective (NEO). We have framed this analysis with reference to the AEMC's assessment framework, as set out in the November 2020 Consultation Paper.

We summarise our conclusions from each stage of analysis below.

Is there a financeability problem?

Our modelling confirms that with respect to **financeability**, some key credit metrics for a TNSP financed at the notional gearing of the benchmark efficient entity would be stretched. Broadly, the results of our financial analysis are similar to the evidence provided by TransGrid and ElectraNet (allowing for differences in assumptions). That is, with an investment profile consistent with the TransGrid and ElectraNet share of the Project EnergyConnect (PEC) ISP project, financed at the benchmark efficient entity's capital structure, a notional TNSP would face pressure in relation to its FFO/Net Debt ratio.

However, in forming judgements, rating agencies look at a range of different metrics as well as qualitative factors. Our analysis of the approach that Moody's takes to assessing ratings for network utilities indicates that it is by no means certain that a notional TNSP would not be able to maintain an investment grade rating, with this assumed investment profile. Our analysis indicates that:

- **Evidence on the FFO/Net Debt Ratio should be balanced against other factors**

  We consider that the TNSPs have provided an overly narrow interpretation of how the observed changes in these ratios would impact whether a company, with TransGrid and ElectraNet's PEC investment profile, could achieve the benchmark credit rating at the benchmark gearing level. In particular, their analysis rests on movements in FFO / Net Debt, just one of several financial ratios that are considered by Moody's, alongside a range of other qualitative and quantitative indicators. Within Moody's assessment framework, while FFO/Net Debt is an important consideration, it represents just 12.5% of the factors that weigh in the overall credit assessment. Our analysis indicates that performance against other financial ratios, in particular Net Debt/RAB and FFO Interest Cover would likely be stronger than that indicated by the FFO/Net Debt ratio alone. For example, our analysis indicates that the FFO Interest Cover metric, with and without the rule change, is broadly consistent with the threshold guidance provided by Moody's for a Baa1 rating, while the gearing ratio is considerably stronger than the tolerance level for Baa1. If we were to consider an overall scorecard approach, inclusive of qualitative elements and the other financial ratios, the overall indicated rating for the notional TNSP in these circumstances could be considered to be consistent with a Baa1 credit profile, or stronger, over the period modelled.

  We note that Moody's may, based on their analysis of other factors, choose to apply a rating that is lower than the grid-indicated outcome. For example, if the utility falls significantly outside the guidance provided on key credit metrics, this could outweigh the evidence of the scorecard rating. However, the credit metric guidance provided by Moody's in relation to TransGrid and ElectraNet cannot be assumed to apply directly to a notional benchmark efficient entity. Guidance provided by Moody's on the FFO/Net Debt ratio sits within the context of the other credit metrics and qualitative factors that contribute to the network companies' rating. For example, Moody's forward view for TransGrid reflects a Net Debt / RAB ratio in the high-80% range over the next 12-18 months, well above the notional 60% gearing level. Moody's 2-3 year forward view for ElectraNet's Net Debt /

RAB ratio is also in the mid- to high-80% range.[3] Further, we understand that a range of company-specific factors also weigh in the assessment, including the risks associated with non-regulated revenues, and the companies' historical financial policies in relation to targeting a particular credit rating. Accordingly, it is not certain that Moody's *would* provide guidance that an FFO/Net Debt ratio of at least 9% would be required for a 'notional' TNSP to achieve a Baa1 rating, had the entity consistently been financed at the benchmark gearing and historically targeted outcomes consistent with Baa1. Therefore, while it is reasonable to have regard to Moody's guidance on particular metrics when considering the financeability of ISP projects, it should not be interpreted as a strict requirement. In particular, caution around the interpretation of ratio guidance should be exercised when this guidance has been given for an actual rather than a notional business, with different key characteristics, including leverage, corporate policy on maintaining a rating, and additional sources of revenue.

- **The extent of improvement resulting from the proposed rule change is relatively marginal**

  Consistent with the TNSP's modelling, our analysis also indicates that performance against the FFO/Net Debt ratio would likely improve, if the proposed rule change were adopted. However, considered in the context of the TNSPs' existing RABs and maintaining the 60% gearing assumption to finance PEC, the difference in the overall performance against the quantitative and qualitative ratings factors is relatively small. This raises questions of the materiality of the rule change's effect, and consequently the significance of the financeability challenge that has been highlighted by the rule change proponents. Consistent with this result, our analysis indicates that the network companies would need to make a relatively small change from the notional capital structure (i.e. gearing within a range of 55-58%, rather than 60%) in order to achieve ratios consistent with the rule change scenario.

Overall, our analysis suggests that a notional TNSP with an investment profile consistent with TransGrid and ElectraNet's share of the PEC project, financed at 60% gearing and receiving the benchmark rate of return, would likely be able to retain an investment grade rating. While more challenging, the TNSP may also be able to obtain the benchmark rating of Baa1/BBB+ at the notional gearing level, although this would depend partly on the extent to which qualitative factors are weighted in the assessment and the specific tolerance levels that a ratings agency might set for this hypothetical entity. Finally, the small change in gearing that would be required to achieve the same FFO/Net Debt ratio as in the rule change case is also consistent with a conclusion that this investment profile is financeable within the current framework. We discuss other issues related to changes in gearing below.

We note that this analysis is strongly influenced by the assumptions, in particular in relation to the allowed rate of return, inflation, the timing of ISP projects, and the magnitude of future ISP investments. Our scenario analysis in relation to these factors indicates that different assumptions could change our assessment. In particular, in a scenario where all identified ISP projects for TransGrid and ElectraNet are reflected in the analysis, while the scorecard-indicated outcome remains consistent with a Baa1 rating, performance against key coverage metrics is weakened, and the change in notional gearing to achieve ratios consistent with the rule change case is more substantial (although not necessarily unreasonable). The analysis is also sensitive to changes in future rate of return instruments. For example, if we were to assume a return on equity that is more consistent with the cost of debt profile assumed by TransGrid, financial performance of the notional entity would be weaker in the near term, but stronger in the longer term.

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[3] Moody's (2020a), *Rating Action: Moody's assigns (P)Baa2 to NSW Electricity Networks Finance's AMTN Programme; outlook stable*, 1 September. Moody's (2020b), *Rating Action: Moody's downgrades ElectraNet to Baa2; outlook stable*, 9 October.

Nonetheless, our analysis, which has considered the full range of evidence that rating agencies use to determine credit ratings, indicates that the ISP investment plans are likely to be financeable under the current regulatory approach. However, in more investment intensive scenarios, the TNSPs may be required to adopt capital structures that differ from the notional assumption. As we discuss below, this is not necessarily a problematic conclusion from a financeability perspective. Indeed, the AER in its consideration of its 2018 Rate of Return Instrument (RORI) concludes[4] "*our regulated return on capital allowance, based on a 60% benchmark gearing ratio, should be sufficient for all regulated firms to finance their operations. To the extent that some firms need to reduce their gearing, our analysis indicates our allowed cash flows are expected to be sufficient*".

It is also important to note that from a practical perspective infrastructure companies have not had difficulty in raising debt or facilitating equity transactions. Both ElectraNet and TransGrid have raised debt in 2020, there has been a sale of equity securities for TransGrid, and investors participating in these transactions had access to information that ISP investments were anticipated without any change to the regulatory regime.

How could the AER and the TNSPs respond?

The TNSPs have concluded that under the current rules, there is limited scope for the AER to modify their approach to change revenue profiles to meet financeability concerns such as those highlighted. Our analysis concurs with that conclusion. However, we consider that there are actions that the TNSPs could take to mitigate any financeability concerns.

First, a TNSP could reduce its gearing below the notional level in order to improve financial ratios. The TNSPs have suggested that this would be unacceptable, because the resulting gearing would not be consistent with the assumptions used to set the allowed rate of return. We consider that the TNSPs' argument that under the current rules ISP projects cannot be financed at the notional gearing while maintaining an investment grade credit rating does not represent the regulatory framework accurately.

Under the current rules, the AER has duties to remunerate networks' efficient costs, and in doing this they measure the cost of capital of the benchmark efficient entity at the notional gearing. The benchmark efficient entity is a construct the AER relies on to provide a rate of return commensurate to the level of risk involved in providing network services. However, there is no expectation that the actual TNSPs should have the same capital structure of the benchmark efficient entity, and nor an obligation on the AER to finance companies at the notional gearing whatever the profile of their capital expenditure.

We consider that a finding that a notional TNSP might be required to reduce gearing below the notional level is not necessarily problematic, in the context of the Australian regulatory framework. In particular, we note that the AER's 2018 RORI indicated that under its cost of capital framework the allowed return on capital was consistent with, and able to support, a range of capital structures, including gearing levels well below the notional level. This approach has been a feature of the Australian regulatory framework for many years, and would be anticipated by investors.

In a period of investment and expansion, gearing below the benchmark level might be needed to maintain the benchmark credit rating. In less capital-intensive periods, revenues may support the benchmark credit rating under a more highly geared structure. Changes to capital structure of this nature can be considered consistent with a competitive market.

[4] AER, *Rate of return instrument, explanatory statement,* December 2018.

While this outcome is consistent with finance theory, the TNSPs have suggested that a lower gearing level (and associated lower return on equity) would not be consistent with the expectations of existing and potential new shareholders. However, we are not persuaded that this argument is reasonable. In particular, we note that:

- We can observe a range of capital structures for regulated Australian networks over time, both above and below the benchmark gearing level, suggesting that a range of approaches are pursued in practice and have been acceptable to investors. For example, the five-year average gearing of listed Australian energy networks used as comparators in the 2018 RORI determination suggested a level of 55%. Based on this evidence, the AER noted that networks were able to adjust gearing to meet their financial needs despite the 60% benchmark.[5]
- A broader view of market evidence of global listed networks is consistent with this, and indeed indicates that lower gearing levels have been acceptable to investors in these entities. Internationally, it is not uncommon for regulators to set notional gearing well below 60% for regulated networks. Regulatory precedent also indicates that notional gearing levels may be reduced for companies with substantial forward investment programs, mirroring plausible outcomes for a company operating in a competitive market.
- This evidence is consistent with a view that while gearing below the notional level might imply a lower return on equity, this would be associated with lower risk for the TNSP's shareholders. In other words, the change in return on equity would be value neutral, taking risk into account, and should not be regarded as uneconomic.

Overall, the evidence suggests that it is reasonable that either existing investors, or potential future investors, in Australian energy networks would expect and accept gearing levels below the notional 60% level in the context of significant RAB growth.

In addition to adopting a different capital structure, there are options for alternative financial instruments, other than standard bonds, that could lower cash interest costs. This includes inflation linked financing, and more innovative approaches such as hybrid instruments. In contrast to other jurisdictions, index-linked financing is not currently widely used in the Australian context. However, our initial investigations suggest that it should not be assumed without evidence that TNSPs would not be able to access this type of funding, that would better align financing obligations with the revenue profile under the current regulatory framework.

What alternatives could be considered?

There is naturally a degree of subjectivity around assessments of what actual investors would or would not find acceptable. Accordingly, while we do not consider that the proposed rule change is a proportionate solution, consideration could be given to alternative options, such as a 'safety valve' in the event that the TNSPs find that they have a financeability issue, and their shareholders do not take necessary actions to facilitate the financing of the ISP investments. In particular, we suggest that consideration is given to both:

- Approaches that would allow the AER to make NPV neutral adjustments to the TNSP's revenue profile on a more ad hoc basis, to address financeability concerns as part of future regulatory determinations, to the extent that these arise and can be substantiated. Any adjustments could be limited, targeted precisely on the identified problem, and reversed when no longer needed.
- Approaches that would allow third party investors to finance the investments, a solution that has been successfully adopted elsewhere. There is evidence of high demand by investors for similar infrastructure opportunities, and in those examples careful structuring of the opportunities has facilitated achievement of both low debt costs and low cost of equity to investors, lowering costs to customers. The potential for third party investment in transmission infrastructure is already a feature of transmission in Victoria and for connection assets.

We also note that at the end of 2020, the NSW Parliament passed the Electricity Infrastructure Investment Act 2020. This provides new powers for directing infrastructure investment primarily associated with Renewable Energy

[5] AER (2018), *Rate of return instrument, explanatory statement*, December, p. 67.

Zones. The Act provides for regulation of recovery of costs of associated network investments, with further details yet to be developed. It is likely to be advantageous for the evolution of the regulation of network infrastructure investment to reflect the approach envisaged for investments made under the Act.

Key impacts and overall assessment

We have assessed the proposed rule change using the criteria set out by the AEMC in their consultation document:

- Impact on the **economic regulatory framework model**. We see the proposed rule change to be a significant departure from the established approach to regulation in Australia. Although applying to only a small set of assets in the first instance, the arguments used to justify changes could apply to a much larger proportion of future network investments.
- The rule change has a negative impact on **consumers**, contributing to an early rise in prices that is **not clearly demonstrated** to be necessary. While the TNSPs argue that the proposal is NPV neutral, this is the investors' perspective, not that of consumers.
- In the context of the revenue and pricing principles under the NEL, we do not see that the proposed changes are required to promote **efficient investment** decisions, nor to satisfy the requirements of the regulatory and legislative framework.
- The proposed rules amendment changes **risk allocation**, in particular by partially removing the protection from inflation that customers have under the current framework. The proposal would also change the real returns to investors in the ISP program, depending on the difference between expected and outturn inflation made in the setting of controls by the AER under the current framework.
- It may have a negative impact on the **efficient operation of providing electricity services**, as it may weaken incentives for TNSPs to deliver projects to time.

The variability of potential outcomes to changes in assumptions, suggests that a blanket change to the revenue framework for ISP projects – as is proposed – is not likely to be a proportionate or appropriate solution to address financeability concerns that may or may not arise in future.

Our overall assessment is therefore that the proposed rule change does not demonstrably meet the NEO.

Summary

The TNSPs have argued for a substantial rule change based on the impact of their proposed investment programme on one credit metric, FFO/ Net Debt. In practice, rating agency assessments are more sophisticated, reflecting other financial credit metrics and a range of qualitative factors including the quality of the entirety of the regulatory framework. Taking account of all this, our analysis suggests that the ISP investments are unlikely to prompt a rating downgrade to below investment grade for a company financed at the AER's notional gearing (although a downgrade is possible for a TNSP that had chosen a more highly leveraged capital structure than a benchmark efficient entity).

The TNSPs' case for change is based on an assumption that network companies must be able to sustain the AER's notional gearing. This frames the question in the wrong way. The AER's notional gearing is used to measure the cost of capital. Once that is set, the question is then what capital structure is right for a company given its own specific circumstances. Companies are free to use many tools to manage their capital structure appropriately. Evidence has not been presented that the networks have endeavoured to do this in their consideration of the ISP investments.

Market evidence does not support the TNSPs' argument that infrastructure in Australia cannot be financed under the current regulatory settings. In addition to global demand from investors for high quality assets such as energy networks in Australia, there is recent evidence of debt and equity financing of TNSPs which anticipated ISP investment under the current regulatory arrangements.

1. INTRODUCTION

CEPA has been engaged by the Australian Energy Market Commission (AEMC) to provide advice on the financeability of Integrated System Plan (ISP) projects. The AEMC has requested this advice in the context of two rule change requests that it has received from TransGrid and ElectraNet, that seek changes to the National Electricity Rules (NER) in the form of a participant derogation.

The proposed rule changes would: provide a nominal rate of return on an unindexed RAB for actionable ISP projects; and remunerate capital expenditure for actionable ISP projects as it is incurred. We have been asked to provide advice to the AEMC to assist in deciding whether:

- Investment in ISP assets can be accommodated under the existing regulatory framework with a reasonable likelihood of being able to obtain financing for individual investments;
- Whether financeability issues are likely to occur for ISP projects and if these could be addressed under the existing regulatory framework; and
- Whether the proposed changes to the rules are likely to provide more benefits to consumers than the status quo.

In considering rule change requests, the AEMC may consider a preferable rule change to that of the proposal. Our analysis and assessment of the proposed rule changes has pointed to alternative rule changes that the AEMC may wish to consider.

In the remainder of this section we set out:

- context on the ISP projects;
- more detail of the rule change requests and the reasons for them;
- in response to the above, the key issues raised and our approach.

1.1. INTEGRATED SYSTEM PLAN

The *Independent review into the future security of the National Electricity Market* recommended that AEMO, *"develop an integrated grid plan to facilitate the efficient development and connection of renewable energy zones across the National Electricity Market"*. [6] This recommendation was adopted by the Australian Government and AEMO has since produced two iterations of its ISP; the most recent ISP was published in July 2020.

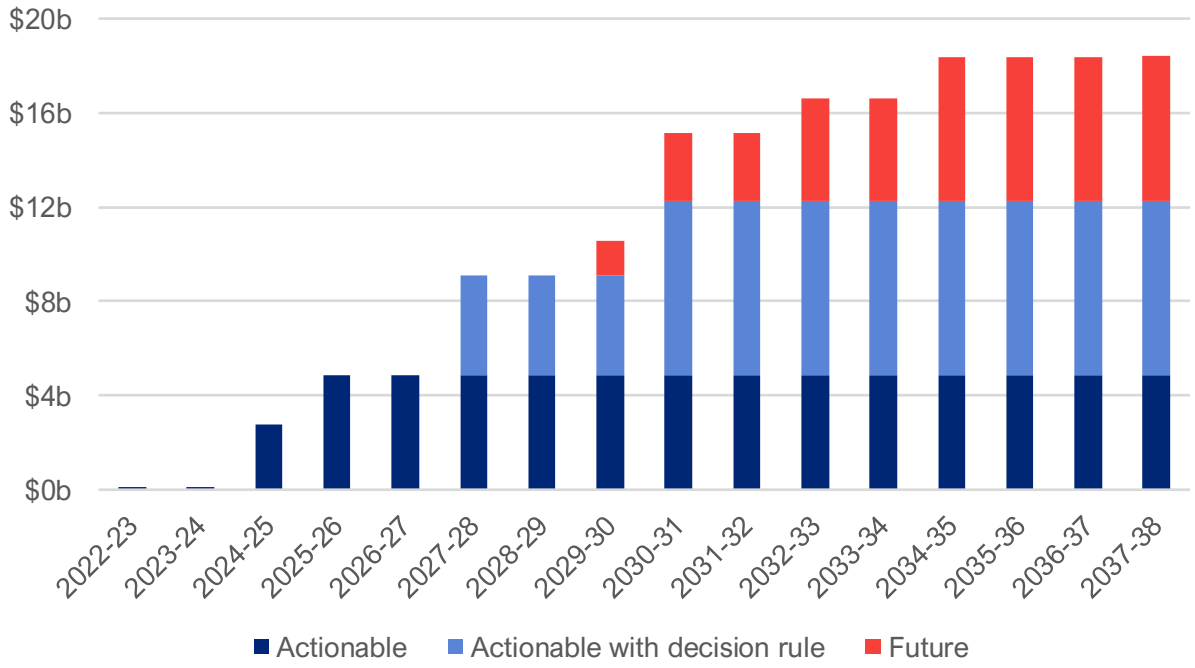
The 2020 ISP identifies 18 transmission network augmentation projects and sets out the conditions under which they should be progressed. The projects are grouped into four categories:

- **Committed projects** that have regulatory approval and are underway.
- **Actionable projects** that have not completed regulatory approval, but AEMO considers that they should commence immediately, if they are not already being progressed.
- **Actionable projects with decision rules** that are subject to a 'watching brief' and should be progressed if specified events come to pass.
- **Future ISP projects** that are part of the ISP's optimal development pathway, but do not need to be implemented straight away.

[6] Final Report, p. 264

Figure 1.1 shows the cumulative scale of transmission network investment specified under the optimal development path of the 2020 ISP.

Figure 1.1: 2020 ISP - Cumulative investment profile ($real 2018-19)



Source: AEMO (2020a), 2020 Integrated System Plan, July, Table 14. This figure reflects central estimates of project costs. Where investment timing is uncertain, we have applied the lower temporal bound of the provided range.

TransGrid and ElectraNet are developing plans for significant investments in new transmission infrastructure that has been identified in the ISP. The actionable and future projects associated with the two TNSPs are summarised in the table below.

Table 1.1: TransGrid and ElectraNet – Actionable and future ISP projects

Category	ISP project	Value $m (low estimate)	Value $m (central estimate)	Value $m (high estimate)	Indicative timing
TransGrid					
Actionable	Project EnergyConnect		2,291 (CPA estimate)		2023
Actionable	VNI Minor*	74	105	137	2022-23
Actionable	HumeLink	1,470	2,100	2,730	2025-26
Actionable	Central-West Orana Renewable Energy Zone (REZ) Transmission Link	450	650	850	2024-25
Actionable (with decision rules)	VNI West*	1,211	1,730	2,249	2027-28
Future	QNI Medium & Large interconnector upgrades*	2,283	3,260	4,239	2032-33 to 2035-36
Future	Reinforcing Sydney, Newcastle and Wollongong supply	Uncertain - pending preparatory activities			Between 2026-27 and 2032-33
Future	New England REZ network expansion	940	1,345	1,750	2031 to 2036

Category	ISP project	Value $m (low estimate)	Value $m (central estimate)	Value $m (high estimate)	Indicative timing
Future	North West NSW REZ network expansion	610	880	1,150	2030s
Total		***9,329***	***12,361***	***15,396***	
ElectraNet					
Actionable	Project EnergyConnect		474 (CPA estimate)		2024
Future	South East SA REZ	20	50	80	Late 2030s
Future	Mid North SA REZ	420	595	770	2034-35 to 2035-36
Total		***914***	***1,119***	***1,324***	

*Source: Project EnergyConnect: ElectraNet (2020), Project EnergyConnect: Contingent Project Application for the South Australian component, September; and TransGrid (2020), Project EnergyConnect: Contingent Project Application, June. Other projects: AEMO (2020a), 2020 Integrated System Plan, July, Table 14. Note: for Project EnergyConnect, value is expressed in real $2018. For projects marked with *, TransGrid shares responsibility and costs with other TNSPs.*

1.2. WHY HAS A RULE CHANGE BEEN PROPOSED?

TransGrid and ElectraNet claim that a notional company with 60% gearing, would not be able to finance the ISP projects at the cost of capital allowed by the Australian Energy Regulator (AER).

The TNSPs argue that this is due to two particular elements of the regulatory framework; namely that:

- Remuneration for inflation is achieved (in effect) by providing a real return on a regulatory asset base (RAB) that is indexed to inflation;[7]
- Remuneration for depreciation from the point when new assets are commissioned, rather than when capital expenditure is incurred (i.e., on a 'capex commissioned' rather than 'capex incurred' basis).

According to the analysis put forward by the TNSPs, these features of the regulatory framework mean that a notional business, undertaking an ISP investment profile at 60% gearing and the cost of capital determined by the AER, would not have financial performance consistent with the notional BBB+/ Baa1 rating,[8] based solely on their assessment of the impact on the projected ratio of Funds Flow from Operations to Net Debt. They argue that this is because either:

- the cost of debt allowance is not high enough to reflect the notional company's cost of debt, because its credit rating would be lower than BBB+; or
- if the notional TNSP reduced its gearing (i.e. increased the proportion of equity funding) to maintain the target credit rating, the AER's rate of return would not provide sufficient compensation to equity, as it is based on the notional capital structure.

[7] In practice the AER achieves this outcome through the application of a nominal rate of return to an inflation-indexed RAB. A deduction is then made to the regulatory depreciation allowance, to remove the expected level of inflation that is reflected in the nominal rate of return. This adjustment is to avoid double counting an allowance for inflation. This results in the same outcome as a real rate of return applied to an indexed RAB (a separate question being whether the real rate of return is correctly estimated).

[8] The notional credit rating of BBB+ refers to the rating scale used by Standard & Poor's (S&P's), whereas Baa1 refers to Moody's. A rating of BBB- or above on the S&P's scale, and Baa3 or above on Moody's scale, is considered an 'investment grade' credit rating. A full comparison between S&P's and Moody's scales can be found in Appendix A.

The TNSPs argue that due to this perceived inconsistency in the assumed financing arrangements of the notional entity, there is a barrier to service providers recovering their efficient cost of capital, as is required under the NEL Revenue and Pricing Principles. Therefore, the companies argue that the ISP projects are not financeable under the current arrangements.

Text Box 1: Key arguments from the rule change proposals

TransGrid:

"Cash flows from [Project Energy Connect] (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 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."* [9]

"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's[10]). … 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."[11]

Incenta (for TransGrid):

"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*
- *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." [12]

To remedy this issue, the TNSPs have requested a participant derogation that would bring forward revenue recovery for their actionable ISP projects through two changes to the current arrangements:

[9] TransGrid, *Rule Change Request*, page 3-4.

[10] Equivalent to a Standard & Poor's credit rating of BBB.

[11] TransGrid, *Rule Change Request*, page 16.

[12] TransGrid, *Rule Change Request*, page 16-17.

- Remove indexation of the RAB for their ISP projects. This would require the application of a nominal WACC to an unindexed RAB.
- Require that depreciation be calculated on an 'as capex incurred' basis for their ISP projects, rather than on an 'as capex commissioned' basis.

TransGrid consider that these changes will address the perceived financeability issue, although *"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."*[13]

The TNSPs further claim that these changes will not result in additional revenues being recovered from consumers, as they will be neutral in net present value (NPV) terms.

1.3. KEY ISSUES IN THIS CONTEXT

Given the discussion above, the following questions need to be addressed:

- Is there a financeability issue for a company financing an ISP investment programme at the notional gearing for a benchmark efficient entity?
- If yes, are there actions that the company can take that would allow it to be financeable with the revenue stream determined by the AER under the existing rules?
- If the company cannot take actions that would allow it to be financeable, are there regulatory options under the existing rules to facilitate financeability?
- If none of these options work, does the proposed rule change meet the NEO? Is it the best rule change that can be envisaged that meets the NEO?

In the remainder of this report, we investigate each of these issues in turn:

- In section 2, we summarise our analysis of the financial implications of the companies concerned undertaking ISP projects under the current rules, and the implications for rating agency views. Our analysis, which has considered the full range of evidence that rating agencies use to determine credit ratings, indicates that the ISP investment plans are likely to be financeable under the current regulatory approach. However, in more investment intensive scenarios, the TNSPs may be required to adopt capital structures that differ from the notional assumption.
- In section 3, we consider whether there are options available to companies to support financeability.
- Section 4 considers what options are open to the AER to support financeability.
- In section 5, we consider whether the proposed rule change meets the NEO, and whether there are alternative possible rule changes that may better meet the NEO.
- The appendices set out our modelling approach, assumptions, and results.

[13] TransGrid Rule Change Request, page 5.

2. IS THERE A FINANCEABILITY PROBLEM?

In this section, we summarise the results of the modelling we have undertaken to test the evidence provided by TransGrid and ElectraNet. We also discuss our interpretation of the results, and how this differs from the TNSPs' analysis.

2.1. THE TNSPS' ANALYSIS

2.1.1. TransGrid's analysis

In its rule change request, TransGrid has presented modelling results to illustrate the financial performance of a network company investing in an assumed $2 billion project (i.e. an investment with a similar magnitude and useful life to its share of Project EnergyConnect, PEC), with and without the proposed rule change. The modelling results highlighted in TransGrid's rule change request are focussed on the project as a standalone investment. In a separate supporting document, TransGrid provides analysis of outcomes under other scenarios, including scenarios that include its existing asset base and an assumed level of BAU capex.

In the following discussion of TransGrid's modelling results, we focus on the scenarios that reflect its existing RAB and BAU capex, as we consider this to be more representative for the purpose of assessing the rule change request than results for a standalone project. In particular, it is not plausible that a standalone greenfield project would be financed in the same way as a benchmark efficient entity. However, we note that consideration of a standalone greenfield project may be useful for considering alternative approaches to financing large ISP projects (see section 3.4).

In each scenario, TransGrid's analysis focusses on the notional company's funds from operations (FFO) to net debt ratio (FFO/Net Debt). In particular, TransGrid draws conclusions on the 'financeability' of the assumed TNSP, based whether it achieves an FFO/Net Debt ratio of at least 9%, which TransGrid consider to be consistent with a BBB+/Baa1 credit rating. We understand that TransGrid has determined this threshold based on Moody's analysis of the FFO/Net Debt ratio that TransGrid – i.e. the actual, not notional, company – would need to achieve in order to achieve an upgrade from its current credit rating of Baa2.[14] TransGrid have also provided analysis of the change in gearing that would be needed to achieve (and maintain) a minimum 9% FFO/Net Debt ratio once the ISP asset is assumed to be commissioned (FY24). Results from the most relevant scenarios modelled by TransGrid are presented in Table 2.1 below.

Table 2.1: Summary of TransGrid's modelling results for alternative investment scenarios and capital structures.

	No Rule Change		Rule Change
Scenario	**Existing RAB**	**Existing RAB + Major Investment**	**Existing RAB + Major Investment**
FFO/Net Debt @ benchmark 60% gearing[1]	7.83%	6.95%	7.73%
Gearing to achieve 9% FFO/Net Debt [2]	48.8%	46.0%	49.4%

[14] TransGrid, *Timing of revenue recovery for large projects*, September 2020, page 7.

Equity IRR (@60% gearing)[3]	6.36%	6.36%	6.36%
Equity IRR (@ gearing to achieve FFO/Net Debt target)	6.02%	5.94%	6.02%

1. 10-year average post construction (FY24 – 33). 2. Applied as a flat rate across all years, targeting a minimum ratio of 9% in all years post construction (i.e. over FY24 -73). 3. Inclusive of gamma.

In summary, TransGrid's modelling indicates that:[15]

- Under both the existing revenue setting framework, and the proposed rule change, with gearing of 60% the TNSP is not able to achieve FFO/Net Debt at or above the 9% threshold in most years (the period from 2019 to 2073 is modelled). This is the case regardless of whether the indicative $2 billion ISP investment is undertaken or not.
- To achieve an FFO/Net Debt ratio of at least 9%, from the date the ISP asset is commissioned to the end of its useful life (i.e. FY2024-2073), gearing is required to fall between 46.0% in the 'no rule change' case and 49.4% in the 'rule change' case.[16] For this analysis, we understand that TransGrid has applied the assumed change in the level of gearing across the entire time period modelled.
- Under the reduced level of gearing required for the notional TNSP to meet the FFO/Net Debt threshold, the TNSP's equity IRR (EIRR) falls below the allowed return on equity (6.36%). In the 'no rule change' scenario the EIRR is 5.94% (assuming gearing of 46.0%), compared to 6.02% when the rule change is introduced (assuming gearing of 49.4%).

2.1.2. ElectraNet's analysis

In its rule change proposal, ElectraNet have presented similar analysis to TransGrid, focussing on the FFO/ Net Debt ratio for a standalone investment of similar magnitude to its share of the PEC project ($500m).

Similar to TransGrid, ElectraNet consider that if this project were financed at the notional gearing level of 60%, it would not achieve an FFO/Net Debt ratio above 9% for the first 30 years of the project's operating life. ElectraNet consider that, if the proposed rule change were implemented, this threshold value would be achieved by around 2040, which it considers sufficient to address the financeability issues arising from PEC.[17]

2.1.3. Our observations

Our overall observation is that the evidence presented by TransGrid and ElectraNet is not sufficient to conclude that the proposed rule change is necessary. We summarise our view of the main weaknesses in TransGrid's analysis below.

- **The TNSPs have adopted a relatively narrow financeability test, that may not be appropriate for assessing the financeability of a notional entity**.

  The analysis conducted by TransGrid and ElectraNet has focussed on a single credit metric, FFO/Net Debt. As we discuss further in section 2.2 below, Moody's and other credit rating agencies will combine an assessment of both qualitative and quantitative metrics to arrive at an overall rating. While we agree that FFO/Net Debt is a key factor considered by Moody's, we consider that it is not appropriate for an assessment of the financeability of a *notional entity* to rely so strongly on this metric.

  For example, a key issue relates to how an appropriate threshold for this credit metric should be determined. The TNSPs have proposed a minimum 9% level for FFO/Net Debt as the threshold for a

[15] TransGrid, *Timing of revenue recovery for large projects*, September 2020.

[16] That is, the assumed *actual* gearing of the TNSP, not the notional gearing used to calculate the allowed cost of capital (which is unchanged at 60% in all scenarios).

[17] ElectraNet, *Rule Change Proposal*, page 16.

BBB+/Baa1 rating. This is based on the most recent Moody's rating actions for TransGrid and ElectraNet, currently both rated as Baa2. TransGrid observe that Moody's has consistently noted that an increase in their rating to Baa1 would require (among other factors) an improvement in FFO/Net Debt above 9%, and that the tolerance for a reduction in their rating below Baa2 is 7%. However, we note that this type of guidance sits within the context of the other credit metrics and qualitative factors that contribute to the network companies' rating. For example, Moody's forward view for TransGrid reflects a Net Debt / RAB ratio in the high-80% range over the next 12-18 months, well above the notional 60% gearing level. Moody's 2-3 year forward view for ElectraNet's Net Debt / RAB ratio is also in the mid- to high-80% range. Further, we understand that there are a range of company-specific factors that also weigh in the assessment, including the risks associated with non-regulated revenues, and the companies' track record and stated intentions in relation to targeting a particular credit rating.

As noted by TransGrid, Moody's have provided different guidance for Australian energy networks with different characteristics. For example, in previous credit opinions, Moody's have indicated an FFO/Net Debt lower bound tolerance level (for a Baa1 rating) of 7% for Ausgrid, 7.5% for Endeavour Energy and 8% for Australian Gas Networks.[18] TransGrid attribute the less restrictive guidance for Ausgrid and Endeavour Energy as being related to their government-owned status and the corresponding assumed higher level of shareholder support. Nonetheless, this illustrates the company-specific nature of the guidance provided on particular thresholds.

Accordingly, it is not certain that Moody's *would* provide guidance that an FFO/Net Debt ratio of at least 9% would be required for a 'notional' TNSP to achieve a Baa1 rating, had that entity consistently been financed at the benchmark gearing of 60%. Therefore, while it is reasonable to have regard to this guidance when considering the financeability of ISP projects, we consider that it should not be interpreted as a strict requirement. Further, evidence of the FFO/Net Debt ratio should be assessed alongside other key credit metrics (including gearing and FFO Interest Cover), and qualitative factors.

- **The TNSPs have not presented a transparent interpretation of the modelling results.**

  In relation to its modelling of a standalone project, TransGrid note that even if the proposed rule changes are implemented, the project is unlikely to achieve the FFO/Net Debt ratio that TransGrid consider to be consistent with a Baa1/BBB+ rating. Nonetheless, TransGrid consider that if the proposed rule change is implemented, *"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."*[19]

  However, we note that when the existing RAB is taken into account, the difference between the rule change and no rule change cases is relatively narrow, in terms of:

  - The FFO/Net Debt ratios achieved, being a 10-year average of 6.95% (FY24-33) in the no rule change case, and 7.73% in the rule change case.
  - The gearing that TransGrid suggest is needed to achieve an FFO/Net Debt ratio of 9% (46.0% in the no rule change case and 49.4% in the rule change case).
  - The impact on equity returns if these lower gearing levels were adopted (Equity IRR of 5.94% in the no rule change case, and 6.02% in the rule change case).

  From this perspective, the difference between the 'rule change' and 'no rule change' cases does not appear to be very material. TransGrid has not provided a transparent explanation of why one case would be manageable, but not the other.

[18] TransGrid, *Timing of revenue recovery for large projects*, September 2020, page 7.

[19] TransGrid, *National Electricity Rules change proposal – Making ISP projects financeable*, page 5.

Further, TransGrid report the Equity IRR at lower gearing and note that it is below the cost of equity of the rate of return instrument (the "allowed cost of equity"). However, TransGrid does not point out that a lower gearing level would mean that equity holders face lower risk, implying that their required return of equity would be correspondingly lower, i.e. the reduction in the return to equity is value neutral to equity holders. We note that TransGrid, and its advisors Incenta, have argued that this outcome would not be acceptable in light of the expectations of the businesses' existing investors. We return to this issue in section 3.2.1.

- **The TNSPs have not fully assessed the plausibility of alternative options**.

  TransGrid has presented a relatively limited analysis in relation to the steps that the notional TNSP could take to improve its financial position. In particular:

  - TransGrid has presented a high-level assessment of the required change to gearing to achieve a target FFO/Net Debt rating of 9%, assuming that gearing is reduced to a single, flat level across the entire life of the ISP assets (i.e. out to 2073). We note that this is not likely to reflect an efficient capital structure, as a higher level of gearing might well be possible as ISP construction tails off, and the value of the new investments is indexed as part of the overall RAB. The indicative modelling approach is therefore likely to overstate the difference from the benchmark gearing level, and the resulting impact on equity returns.
  - Further, as noted above, TransGrid appear to acknowledge that an FFO/Net Debt ratio of less than 9% for a notional entity could still be acceptable from a financeability perspective (as this is the outcome under the rule change scenario). This is consistent with our view that the FFO/Net Debt ratio should not be treated as a 'hard' requirement for assessing financeability. Therefore, in assessing the need for the proposed rule change, it is appropriate to consider what gearing would be needed to achieve financial outcomes consistent with the rule change scenario (which TransGrid consider to be financeable). Based on the evidence presented by the TNSPs, we consider that the latter scenario would present a more realistic picture of what could be achieved within the current regulatory framework.
  - Finally, TransGrid's analysis does not appear to have explored other steps that could be taken to improve the strength of cash flow-based metrics, such as the use of alternative financing instruments such as hybrids and inflation linked debt. We return to this question in section 3.2.

- **The TNSPs have considered a limited range of scenarios, that may not be representative of the position of a notional entity.**

  For example, we note that for its assessment of the notional entity, TransGrid have assumed:

  - The indicative return on equity referenced in the AER's 2018 RORI (6.36%).
  - A return on debt based on a ten-year trailing average approach (consistent with the 2018 RORI), but where the assumed benchmark cost of debt assumption differs from the indicative level at the time the 2018 RORI was set (4.7%). In TransGrid's modelling, in the near term the benchmark cost of debt falls to a minimum of 3.6%, before rising to 6.5% by 2040.

  Under the AER's current rate of return framework, there is likely to be a directional relationship between the allowed return on debt and equity. Accordingly, the two components of the assumed allowed return on capital are not estimated on a consistent basis in TransGrid's analysis.

  In particular, under the 2018 RORI:

  - The AER will set the return on equity for a regulated energy network based on an assumed risk free rate, plus the product of the estimated equity beta (0.60) and assumed market risk premium (6.10%). The risk free rate is not fixed in the 2018 RORI, but will rather be updated prior to each regulatory determination, based on the averaging period nominated by the business (within the parameters for this period that are defined in the RORI).

- For each year of the regulatory determination, AER will set the benchmark cost of debt based on a weighted average of A and BBB rated corporate bond yields, as reported by the Reserve Bank of Australia (RBA), Bloomberg and Thomson Reuters. The annual benchmark cost of debt will then feed into a 10-year trailing average calculation to determine the allowed return on debt for each regulated network (i.e. this will be updated annually).

Accordingly, it appears inconsistent to assume a return on equity based on a fixed risk free rate, while also assuming movements in the benchmark cost of debt. While we would not anticipate a 'one-for-one' relationship between the risk free rate and the benchmark yield, it is nonetheless reasonable to expect some relationship. So for example, if we take TransGrid's assumed benchmark yield as a given, in the near term we might expect a lower risk free rate (and therefore a lower implied return on equity), while in the longer term the risk free rate / allowed return on equity might be expected to increase with the benchmark yield (i.e. higher than TransGrid's analysis). Alternatively, if we were to set the assumed return on equity at the indicative 2018 RORI level, it would be more consistent to assume a benchmark yield in line with this (i.e. lower than the cost of debt reflected in TransGrid's analysis).

Ultimately, we note that the future allowed return on capital is subject to considerable uncertainty, and it is outside our terms of reference to present a view on what the future determinations are likely to be. Nonetheless, we think it is important to explore alternative return on capital scenarios when considering the financeability of ISP projects, and that these scenarios are broadly internally consistent.

Our analysis, presented in the following section, suggests that correcting for the issues discussed above indicates a much more nuanced picture of the ability of the TNSPs to finance identified ISP projects under the current regulatory framework.

2.2. OUR ANALYSIS

2.2.1. Overview of our approach

We have developed independent modelling of the TNSPs' revenue and financial performance under the current regulatory framework and the rule change proposal. The modelling approach and assumptions are described in Appendix B. Broadly speaking, we have constructed a simplified version of the AER's Post-Tax Revenue Model (PTRM) and Roll Forward Model (RFM) to illustrate how the TNSPs' financial outcomes would change under various scenarios, were the rule changes to be implemented.

In all cases, our analysis assumes that the projects are combined with the TNSP's existing RAB and an assumed level of business as usual (BAU) capex.[20]

We have used the revenue outputs from this modelling process to assess the financeability of the TNSPs through different lenses. Specifically, we have considered both:

- The grid-indicated credit rating that would be implied by the **scorecard** prepared by Moody's as part of its ratings assessment process, taking into account both qualitative and quantitative factors.
- Performance against key **quantitative metrics**, and how (a) this compares to the guidance provided by Moody's for TransGrid and ElectraNet, and (b) how performance under the current regulatory framework scenario compares to the rule change case.

Further information on these two approaches is set out below. As a starting point for our analysis, we have applied similar assumptions to those used by the TNSPs, in relation to the return on capital, and the timing and magnitude

[20] As detailed in Appendix B, most modelling inputs are sourced from the PTRMs published by the AER in its most recent determinations for TransGrid and ElectraNet (both in 2018). We have maintained some of the assumptions found in TransGrid's own illustrative modelling, e.g., on the composition of BAU capex and ISP projects by type of asset and on standard asset lives. Reliance on these assumptions does not appear to have a material impact on modelled ratings and credit metrics.

of the ISP projects. We have supplemented this with alternative scenarios in relation to the return on capital, and alternative portfolios of ISP investments. We have also considered some simple scenarios in relation to how, as an alternative to the proposed rule change, the TNSPs could potentially improve their financial performance by adopting different capital structures.

While our analysis of credit metrics is based on Moody's approach, we would not expect that methodologies from other major rating agencies (e.g., Standard & Poor's or Fitch Ratings) would lead to significant differences in our conclusions.

Scorecard based approach

To inform our assessment, we have constructed an illustrative credit rating scorecard for each TNSP, based on the Moody's 2017 Rating Methodology for Regulated Electric and Gas Networks, illustrated in Text Box 2 below. In addition to the FFO/Net Debt ratio, considered by TransGrid and ElectraNet, the methodology reflects three other credit metrics – FFO Interest Cover, Net Debt/RAB and Retained Cash Flow (RCF) / Net Debt (Appendix B provides additional details on the calculation of financial ratios). In addition to these leverage and coverage ratios, Moody's scorecard rating also incorporates qualitative elements, which together comprise 60% of the overall scorecard-indicated rating.

Text Box 2: Moody's scorecard approach

Moody's adopts a scorecard approach, where the overall credit rating is the result of a weighted average calculation that combines key financial ratios with a range of qualitative elements.

The scorecard includes four main factors:

1. **Regulatory Environment and Asset Ownership Model** – These aspects are capable of affecting the predictability and timeliness of the network's cash flows and the network's ability to earn revenue from its assets.
2. **Size and Complexity of Capital Program** – This factor considers the network's investment plan and the execution risks associated with it.
3. **Financial Policy** – This factor considers the company's management track record of financial policies and whether this is favourable to creditors.
4. **Leverage and Coverage** – This factor considers the network's ability to service its debt in light of its cash flows and asset base.

Each of the above four factors comprises one or more specific sub-factors. The scorecard is used to produce an overall indicated rating for the regulated network through the following steps:

- Moody's rate networks against each sub-factor individually, assigning it an 'alpha' category grade – i.e. one of Moody's broad ratings of Aaa, Aa, A, Baa, Ba, B, and Caa. The assessment of Factor 4, Leverage and Coverage, relies on four financial ratios based on company accounts (FFO / Net Debt, FFO interest coverage, RCF / Net Debt, and Net Debt / RAB), whereas factors 1-3 are based primarily on a more qualitative assessment. An exception to this is Factor 2, where Moody's may consider the ratio of the annual capital expenditure to the existing asset base.
- Each sub-factor's alpha category rating is converted into a numerical score.
- Moody's calculate a weighted average of the numerical scores. This process is based on a set of standard weights that reflect the relative importance of each sub-factor. However, sub-factors that receive a lower rating (Baa or below), are overweighted by applying a multiplier to their standard weight. This reflects the consideration that for the purpose of determining credit risk, a weakness in a specific area would not be completely offset by a strength in another area, and therefore lower scores should have a greater impact on the average than higher scores. Weights are re-scaled to a total of 100% after overweighting is applied.
- The weighted average is mapped back to an alphanumeric rating, this time using more detailed rating bands (e.g., Aaa, Aa1, Aa2, Aa3, A1, etc.), providing an initial overall rating of the network: the 'scorecard-indicated outcome' or 'grid indicated outcome'.
- A fifth factor, 'Structural Considerations and Sources of Rating Uplift from Creditor Protection', is used to adjust the initial scorecard-indicated outcome by 'notching up' the rating. This factor considers features that reduce the likelihood of default or that give creditors the ability to promote corrective action against credit deterioration.

Source: Moody's (2017), Rating Methodology for Regulated Electric and Gas Networks, March.

One issue for the purpose of assessing the credit impact of the proposed rule change is the treatment of the cash flow impacts by ratings agencies. For example, we note that in its calculation of certain credit metrics for regulated utilities in the UK, Moody's has noted that it may 'look through' regulatory adjustments that bring revenue forward from future periods, without changing the overall level of remuneration (i.e. NPV neutral revenue adjustments). Accordingly, in cases where such adjustments apply, Moody's assessments of companies regulated under a building block approach have previously considered an adjusted interest cover ratio (AICR). The AICR seeks to improve the comparability of interest coverage across regulated networks by removing from the FFO those cash flows that can be influenced by specific features of the regulatory regime, such as, in this case, regulatory depreciation. As the proposed rule change would impact some, but not all TNSPs, it is therefore possible that Moody's could adopt the AICR metric in place of FFO Interest Cover. To reflect the potential effect of this on the assessment, as an alternative to the FFO Interest Cover ratio we have also considered the AICR as a sensitivity.

Guidance based approach

In considering the credit rating indicated through the scorecard based approach outlined above, it is also important to highlight that in respect of credit opinions for specific companies, rating agencies will typically provide guidance on threshold values for particular credit metrics (for example, as TransGrid note in relation to its own FFO/Net Debt ratio).

Therefore, ratings agencies may expect companies to stay within the boundaries of this guidance over time, regardless of what a scorecard indicated rating might suggest. As we noted in section 2.1.3, while we can observe such guidance for *actual* companies (with their own specific characteristics and financial policies), it is not clear that this guidance is directly applicable to a 'notional' company such as is considered here, that would have presumably maintained the benchmark gearing and credit rating over time.

Nonetheless, as part of our overall assessment, we have considered how projected financial ratios for the notional TNSPs compare against the guidance that Moody's has provided for TransGrid and ElectraNet. However, as Moody's have provided guidance on tolerance levels for Net Debt/RAB and FFO Interest Cover, we consider performance against these metrics alongside FFO/Net Debt. We summarise the most recent guidance provided by Moody's in the table below.

Table 2.2: Moody's published guidance for TransGrid and ElectraNet

	Guidance for upgrade (Baa1)	Guidance for downgrade (Baa3)
TransGrid		
Net Debt / RAB	< 85%	> 90%
FFO / Net Debt	> 9%	< 7%
FFO Interest Cover	> 2.4 x	< 1.9 x
ElectraNet		
Net Debt / RAB	< 80%	> 90%
FFO / Net Debt	> 9%	< 7%
FFO Interest Cover	Not specified	Not specified

Source: Moody's (2020a; 2020b).

As noted above, as a sensitivity we have considered whether application on the AICR, instead of FFO Interest Cover, would affect the overall result. While Moody's has not previously used this ratio for its assessment of Australian networks, in the context of regulated UK energy networks, Moody's has provided the guidance outlined in the table below. While this may provide an indication of tolerance levels for this ratio, we note that Moody's might not apply the same guidance to Australian energy networks.

Table 2.3: Moody's published guidance for UK energy networks

	A3	Baa1	Baa2
Net Debt / RAB	60 – 68%	68 – 75%	75 – 85%
AICR	1.6x – 1.8x	1.4x – 1.6x	1.2x – 1.4x

Source: Moody's, UK Energy Networks, September 2020.

In line with our understanding that there is some flexibility around this guidance, and our observations on the appropriateness of these thresholds for a notional assessment, we have not interpreted these ratios as strict requirements that must be met in every year. Rather, we have used a comparison to these ratio levels as part of an in the round assessment of financeability.

2.2.2. Overview of results – ProjectEnergy Connect

The rule change proposals have focussed, primarily, on outcomes for an indicative ISP investment that is broadly similar to ProjectEnergy Connect (PEC). In this section, we present the key results from our analysis of a similar scenario, under varying assumptions. In section 2.2.3, we consider outcomes if a much larger portfolio of ISP projects is assumed. More detailed results from the scenarios that we have considered are set out in Appendix C.

TransGrid – Project EnergyConnect

The tables below present the quantitative leverage and coverage ratios considered by Moody's, along with Moody's indicated rating bands for these metrics. The bands that we show here represent alpha categories (i.e. A, Baa, Ba), rather than being associated with ultimate ratings (i.e. Baa1 or Baa2). As described above, each alpha category is associated with a score that feeds through to an overall scorecard-indicated outcome. For the purpose of generating the scorecard indicated outcome shown in the table, the ratios are presented as three-year forward-looking averages.

Table 2.4 presents outcomes under the no rule change scenario, while performance if the rule change is introduced in presented in Table 2.5.

*Table 2.4: **No Rule Change**: Illustrative credit metrics for Moody's ratings - TransGrid (Notional) - Existing RAB + PEC*

Scorecard Factors (weighting)	Score / Rating (3-year forward looking average)											
Financial Year	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**
Factor 1: Regulatory Environment and Asset Ownership Model (40%)												
1a. Stability and Predictability of Regulatory Regime (15%)						Aaa						
1b. Asset Ownership Model (5%)						Aa						
1c. Cost and Investment Recovery (Ability and Timeliness) (15%)						A						
1d. Revenue risk (5%)						Aa						
Factor 2: Scale and Complexity of Capital Program (10%)												
2a. Scale and Complexity of Capital Program						Aaa						
Factor 3: Financial Policy (10%)												
3a. Financial policy						Baa						
Factor 4: Leverage and Coverage (forward-looking 3-year average) (40%)												
4a. FFO Interest Cover	2.25 (Ba)	2.27 (Ba)	2.34 (Ba)	2.5 (Ba)	2.7 (Ba)	2.84 (Baa)	2.93 (Baa)	2.97 (Baa)	2.98 (Baa)	2.88 (Baa)	2.75 (Ba)	2.51 (Ba)
OR												
AICR (10%)	1.87 (Baa)	1.82 (Baa)	1.87 (Baa)	1.82 (Baa)	1.87 (Baa)	1.82 (Baa)	1.87 (Baa)	1.82 (Baa)	1.87 (Baa)	1.82 (Baa)	1.87 (Baa)	1.82 (Baa)
4b. Net Debt / RAB (12.5%)	60% (A)	60% (A)	60% (A)	60% (A)	60% (A)	60% (A)	60% (A)	60% (A)	60% (A)	60% (A)	60% (A)	60% (A)
4c. FFO / Net Debt (12.5%)	6.35% (Ba)	5.97% (Ba)	5.95% (Ba)	6.23% (Ba)	6.64% (Ba)	6.78% (Ba)	6.92% (Ba)	7.05% (Ba)	7.22% (Ba)	7.18% (Ba)	7.11% (Ba)	6.66% (Ba)
4d. RCF / Net Debt (5%)	5.02% (Ba)	4.77% (Ba)	4.86% (Ba)	5.18% (Ba)	5.56% (Ba)	5.49% (Ba)	5.4% (Ba)	5.31% (Ba)	5.36% (Ba)	5.41% (Ba)	5.44% (Ba)	5.4% (Ba)
Overall scorecard-indicated rating (FFO IC)	**Baa1**	**Baa1**	**Baa1**	**Baa1**	**A3**	**A3**	**A3**	**A3**	**A3**	**A3**	**A3**	**Baa1**
Overall scorecard-indicated rating (AICR)	**A3**	**A3**	**A3**	**A3**	**A3**	**A3**	**A3**	**A3**	**A3**	**A3**	**A3**	**A3**

Source: CEPA analysis.

*Table 2.5: **Rule Change**: Illustrative credit metrics for Moody's ratings - TransGrid (Notional) - Existing RAB + PEC*

Scorecard Factors (weighting)	Score / Rating (3-year forward looking average)											
Financial Year	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**
Factor 1: Regulatory Environment and Asset Ownership Model (40%)												
1a. Stability and Predictability of Regulatory Regime (15%)							Aaa					
1b. Asset Ownership Model (5%)							Aa					
1c. Cost and Investment Recovery (Ability and Timeliness) (15%)							A					
1d. Revenue risk (5%)							Aa					
Factor 2: Scale and Complexity of Capital Program (10%)												
2a. Scale and Complexity of Capital Program							Aaa					
Factor 3: Financial Policy (10%)												
3a. Financial policy							Baa					
Factor 4: Leverage and Coverage (forward-looking 3-year average) (40%)												
4a. FFO Interest Cover *OR*	2.3 (Ba)	2.41 (Ba)	2.54 (Ba)	2.73 (Ba)	2.93 (Baa)	3.08 (Baa)	3.17 (Baa)	3.21 (Baa)	3.22 (Baa)	3.11 (Baa)	2.96 (Baa)	2.69 (Ba)
AICR (10%)	1.67 (Baa)	1.71 (Baa)	1.78 (Baa)	1.87 (Baa)	1.95 (Baa)	1.99 (Baa)	2.00 (A)	1.99 (Baa)	1.97 (Baa)	1.93 (Baa)	1.88 (Baa)	1.84 (Baa)
4b. Net Debt / RAB (12.5%)	60% (A)	60% (A)	60% (A)	60% (A)	60% (A)	60% (A)	60% (A)	60% (A)	60% (A)	60% (A)	60% (A)	60% (A)
4c. FFO / Net Debt (12.5%)	6.6% (Ba)	6.61% (Ba)	6.86% (Ba)	7.23% (Ba)	7.53% (Ba)	7.67% (Ba)	7.8% (Ba)	7.94% (Ba)	8.13% (Ba)	8.07% (Ba)	7.98% (Ba)	7.48% (Ba)
4d. RCF / Net Debt (5%)	5.12% (Ba)	5.02% (Ba)	5.15% (Ba)	5.46% (Ba)	5.76% (Ba)	5.71% (Ba)	5.64% (Ba)	5.57% (Ba)	5.65% (Ba)	5.73% (Ba)	5.78% (Ba)	5.75% (Ba)
Overall scorecard-indicated rating (FFO IC)	**Baa1**	**Baa1**	**Baa1**	**A3**	**A3**	**A3**	**A3**	**A3**	**A3**	**A3**	**A3**	**A3**
Overall scorecard-indicated rating (AICR)	**A3**	**A3**	**A3**	**A3**	**A3**	**A3**	**A3**	**A3**	**A3**	**A3**	**A3**	**A3**

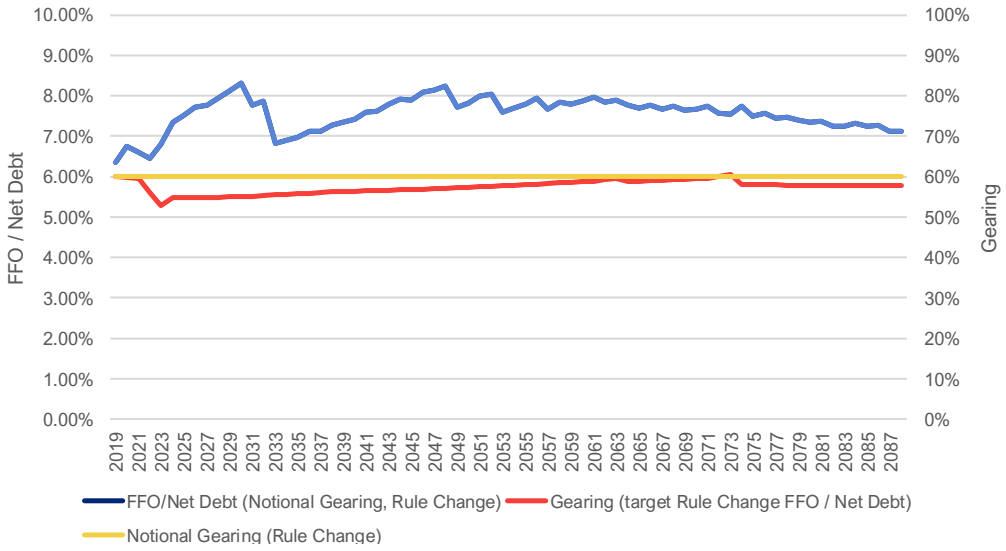
Source: CEPA analysis.

This analysis suggests a scorecard-indicated rating of Baa1 to A3, at the notional gearing level of 60%, under both the rule change and non-rule change scenarios. As noted above, the relative positive outcome indicated by the scorecard rating needs to be balanced against the fact that in its assessment of actual companies, Moody's may ultimately determine a rating that is above or below the scorecard indicated outcome. For example, for TransGrid currently, a rating one notch below the scorecard indicated outcome has been set.

Clearly, in the no rule change scenario, the FFO/Net Debt ratio falls below the 7% guidance currently in place for TransGrid (the actual entity, not a benchmark efficient entity) to maintain its Baa2 rating, and well below the indicated 9% tolerance for TransGrid to receive an upgrade to Baa1. However, we note that the FFO Interest Cover ratio is largely above the 2.4x level associated with guidance for a Baa1 rating, while the alternative AICR metric indicates stronger performance (in line with A3 under either scenario, based on guidance issued for UK energy networks). Further, the Net Debt / RAB ratio of 60% (the notional level) is clearly significantly stronger than the 85-90% level reflected in TransGrid's actual rating. Accordingly, it is by no means certain that a notional TNSP, with this investment profile would not be able to achieve an investment grade rating, and potentially a Baa1 rating. This is in contrast to TransGrid's assertion that if it invested in PEC at the benchmark gearing of 60%, its credit rating would fall below the current Baa2 level.

We also note that under this scenario, the difference between the rule change and no rule change cases is relatively narrow. For example, as illustrated in Table 2.4 and Table 2.5, the scores for the leverage and coverage ratios remain substantially the same as under the no rule change case, and the rule change would not markedly affect the overall scorecard indicated outcome. We also observe that while values for the FFO/Net Debt ratio improve if the rule change were introduced, relative to the base case, performance nonetheless remains below the 9% threshold that TransGrid considers necessary for Baa1. Finally, we note that the TNSP could achieve the same FFO/Net Debt ratio as under the rule change proposal, with a relatively small change away from the notional gearing level. As illustrated in Figure 2.1, under the current regulatory framework with average gearing of 56% over the first three regulatory periods, or 57% over the entire period modelled, the TNSP could maintain FFO/Net Debt ratios consistent with those achieved under the rule change scenario.

Figure 2.1: Gearing required to achieve the rule change scenario FFO / Net Debt (TransGrid – PEC + BAU)



Source: CEPA analysis

We note that a more restrictive assumption in relation to the FFO / Net Debt ratio would naturally suggest a requirement for a lower level of gearing (we consider such scenarios in Appendix B.3). However, as the TNSPs have indicated that the investment profile associated with PEC would be manageable under the rule change proposal, the above analysis would appear to be a reasonable point of comparison for assessing whether the rule change is needed.

ElectraNet – Project EnergyConnect

Table 2.6 and Table 2.7 below presents the scorecard indicated outcomes for ElectraNet.

Table 2.6: ***No Rule Change****: Illustrative credit metrics for Moody's ratings - ElectraNet (Notional) - Existing RAB + PEC*

Scorecard Factors (weighting)	Score / Rating (3-year forward looking average)											
Financial Year	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**
Factor 1: Regulatory Environment and Asset Ownership Model (40%)												
1a. Stability and Predictability of Regulatory Regime (15%)							Aaa					
1b. Asset Ownership Model (5%)							Aa					
1c. Cost and Investment Recovery (Ability and Timeliness) (15%)							A					
1d. Revenue risk (5%)							Aa					
Factor 2: Scale and Complexity of Capital Program (10%)												
2a. Scale and Complexity of Capital Program (10%)							Aaa					
Factor 3: Financial Policy (10%)												
3a. Financial policy (10%)							Baa					
Factor 4: Leverage and Coverage (forward-looking 3-year average) (40%)												
4a. FFO Interest Cover *OR*	2.38 (Ba)	2.49 (Ba)	2.52 (Ba)	2.65 (Ba)	2.78 (Ba)	2.96 (Baa)	3.06 (Baa)	3.11 (Baa)	3.11 (Baa)	3.01 (Baa)	2.9 (Baa)	2.71 (Ba)
AICR (10%)	1.76 (Baa)	1.8 (Baa)	1.85 (Baa)	1.94 (Baa)	2.03 (A)	2.1 (A)	2.12 (A)	2.11 (A)	2.08 (A)	2.02 (A)	1.94 (Baa)	1.86 (Baa)
4b. Net Debt / RAB (12.5%)	60% (A)	60% (A)	60% (A)	60% (A)	60% (A)	60% (A)	60% (A)	60% (A)	60% (A)	60% (A)	60% (A)	60% (A)
4c. FFO / Net Debt (12.5%)	7.27% (Ba)	7.26% (Ba)	6.81% (Ba)	6.78% (Ba)	6.84% (Ba)	7.23% (Ba)	7.4% (Ba)	7.54% (Ba)	7.69% (Ba)	7.72% (Ba)	7.79% (Ba)	7.59% (Ba)
4d. RCF / Net Debt (5%)	6.62% (Ba)	6.4% (Ba)	5.8% (Ba)	5.92% (Ba)	6.21% (Ba)	6.72% (Ba)	6.7% (Ba)	6.64% (Ba)	6.66% (Ba)	6.57% (Ba)	6.46% (Ba)	6.16% (Ba)
Overall scorecard-indicated rating (FFO IC)	**Baa1**	**Baa1**	**Baa1**	**A3**	**A3**	**A3**	**A3**	**A3**	**A3**	**A3**	**A3**	**A3**
Overall scorecard-indicated rating (AICR)	**A3**	**A3**	**A3**	**A3**	**A3**	**A3**	**A3**	**A3**	**A3**	**A3**	**A3**	**A3**

Source: CEPA analysis.

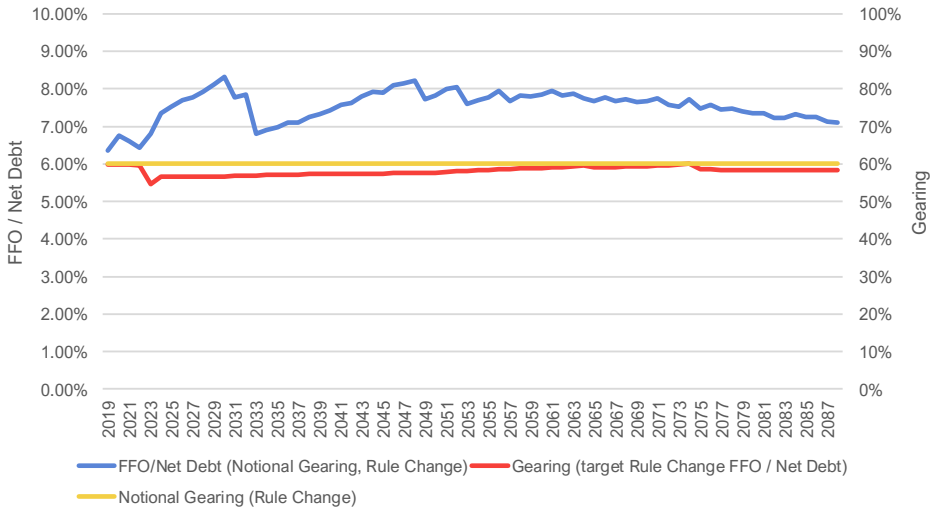
*Table 2.7: **Rule Change**: Illustrative credit metrics for Moody's ratings - ElectraNet (Notional) - Existing RAB + PEC*

Scorecard Factors (weighting)	Score / Rating (3-year forward looking average)											
Financial Year	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**
Factor 1: Regulatory Environment and Asset Ownership Model (40%)												
1a. Stability and Predictability of Regulatory Regime (15%)							Aaa					
1b. Asset Ownership Model (5%)							Aa					
1c. Cost and Investment Recovery (Ability and Timeliness) (15%)							A					
1d. Revenue risk (5%)							Aa					
Factor 2: Scale and Complexity of Capital Program (10%)												
2a. Scale and Complexity of Capital Program (10%)							Aaa					
Factor 3: Financial Policy (10%)												
3a. Financial policy (10%)							Baa					
Factor 4: Leverage and Coverage (forward-looking 3-year average) (40%)												
4a. FFO Interest Cover				2.81	2.92	3.11	3.22	3.27	3.27	3.17	3.04	2.84
OR	2.39 (Ba)	2.56 (Ba)	2.64 (Ba)	(Baa)	(Baa)	(Baa)	(Baa)	(Baa)	(Baa)	(Baa)	(Baa)	(Baa)
AICR (10%)	1.75 (Baa)	1.78 (Baa)	1.83 (Baa)	1.9 (Baa)	2 (Baa)	2.07 (A)	2.08 (A)	2.08 (A)	2.05 (A)	1.99 (Baa)	1.91 (Baa)	1.84 (Baa)
4b. Net Debt / RAB (12.5%)	60% (A)	60% (A)	60% (A)	60% (A)	60% (A)	60% (A)	60% (A)	60% (A)	60% (A)	60% (A)	60% (A)	60% (A)
4c. FFO / Net Debt (12.5%)	7.31% (Ba)	7.61% (Ba)	7.32% (Ba)	7.48% (Ba)	7.4% (Ba)	7.81% (Ba)	7.99% (Ba)	8.14% (Ba)	8.29% (Ba)	8.32% (Ba)	8.39% (Ba)	8.17% (Ba)
4d. RCF / Net Debt (5%)	6.63% (Ba)	6.44% (Ba)	5.87% (Ba)	6.03% (Ba)	6.33% (Ba)	6.87% (Ba)	6.87% (Ba)	6.83% (Ba)	6.88% (Ba)	6.81% (Ba)	6.7% (Ba)	6.41% (Ba)
Overall scorecard-indicated rating (FFO IC)	**Baa1**	**Baa1**	**Baa1**	**A3**	**A3**	**A3**	**A3**	**A3**	**A3**	**A3**	**A3**	**A3**
Overall scorecard-indicated rating (AICR)	**A3**	**A3**	**A3**	**A3**	**A3**	**A3**	**A3**	**A3**	**A3**	**A3**	**A3**	**A3**

Source: CEPA analysis.

Overall, the modelling results indicate similar outcomes to the case of TransGrid, albeit with slightly stronger ratios in both the rule change and no rule change case. The comparison between the rule change and no rule change cases also indicates a relatively small difference between the two scenarios. Consistent with this, the change from the notional gearing required to achieve FFO/Net Debt that is comparable to the rule change case is smaller than for the notional TransGrid TNSP. As illustrated in Figure 2.2, under the current regulatory framework with average gearing of 57% over the first three regulatory periods, or 58% over the entire period modelled, the TNSP could maintain FFO/Net Debt ratios consistent with those achieved under the rule change scenario.

Figure 2.2: Gearing required to achieve the rule change scenario FFO / Net Debt (ElectraNet – PEC + BAU)



Source: CEPA analysis

2.2.3. Additional ISP project scenarios

The rule change proposal relates not only to PEC, but also to all ISP projects that may be identified for the TNSPs by AEMO currently or in the future as 'actionable'. TransGrid has noted that if it invested in more ISP projects under the current framework and at the benchmark gearing of 60%, its credit rating would fall to well below investment grade.[21]

To test this, we have considered scenarios in which the notional TransGrid and ElectraNet TNSPs undertake a considerably larger portfolio of ISP investments.[22] In this section, we report the results for TransGrid to illustrate our findings. The full set of results, including for ElectraNet, are set out in Appendix C.

ISP Scenario 1 – All Actionable Projects (2020 ISP)

This scenario considers an ISP investment program of approximately $6.0b (real $2018/19), over the next decade. This is based on the 2020 actionable ISP projects that have been identified as relating to TransGrid.[23] We note that there is considerable uncertainty around both the cost and timing of these projects, with the 2020 ISP indicating a cost range between approximately $4.9b - $7.0b.

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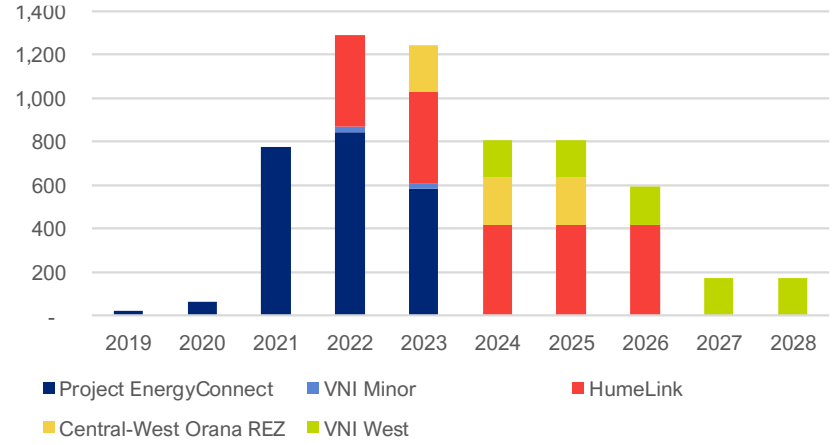
[21] TransGrid, Rule Change Proposal, 30 September 2020, p. 15.

[22] As the rule change request does not apply to 'committed' ISP projects, i.e., projects that are underway and have already received regulatory approval, we do not include these projects in our modelling of rule change impacts and assume that they are included in 'business as usual' capex. The 2020 ISP lists two committed projects relevant to NSW and SA: SA system strength remediation and QNI Minor. See AEMO (2020), p. 14.

[23] This includes actionable projects with decision rules. Note that for this illustrative scenario, we have: assumed the central case for project costs and completion dates; applied simplified assumptions in relation to the profile of capital expenditure; and where projects are shared between multiple TNSPs, we have assumed that the costs are shared equally.

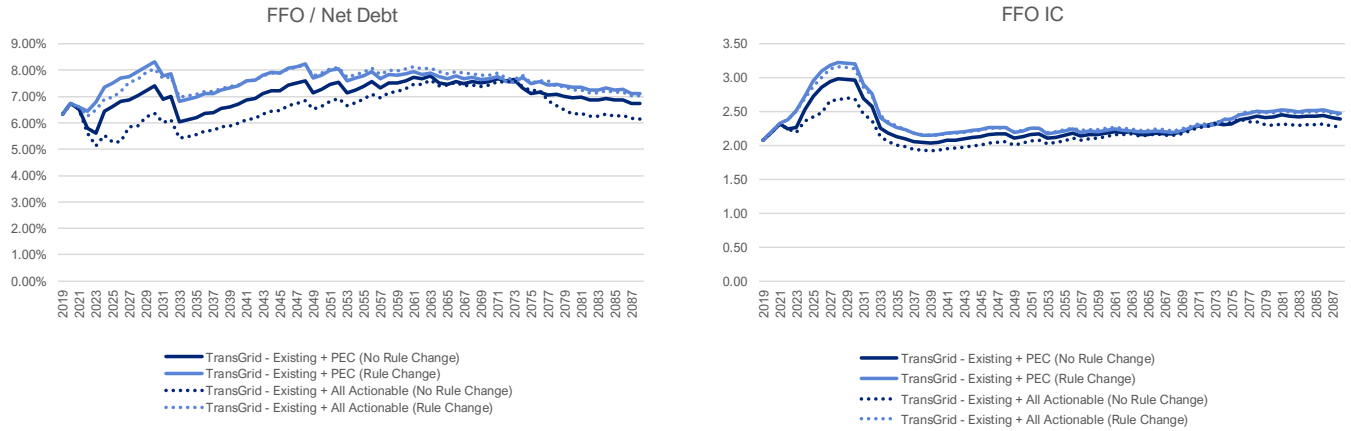
Figure 2.3: TransGrid – ISP Scenario 1: All actionable ISP projects ($m, real 2018/19)



Source: CEPA analysis of AEMO 2020 ISP.

If we assume that the notional TNSP continues to be financed at 60% gearing, the overall scorecard indicated outcome remains within a Baa1 range (as is the case for TransGrid, currently). However, compared to the PEC only scenario, key credit metrics are weaker, and the weakness persists for longer. These outcomes are illustrated in the figures below for selected credit metrics, under both the rule change and no rule change cases.

Figure 2.4: FFO / Net Debt and FFO IC - TransGrid: All actionable ISP projects



In this scenario, the overall scorecard indicated outcomes remains within a Baa1 or A3 range over the period modelled, under both the rule change and no rule change scenarios. However, we can observe that credit metrics are weaker than those indicated above for PEC. Nonetheless, given the relative strength of the gearing metric in these scenarios (assumed to remain at 60%), and the counterbalancing positive qualitative aspects, we do not consider that the evidence supports a strong conclusion that the implied credit rating for a notional company (as opposed to TransGrid, the actual entity) would necessarily fall below an investment grade level.

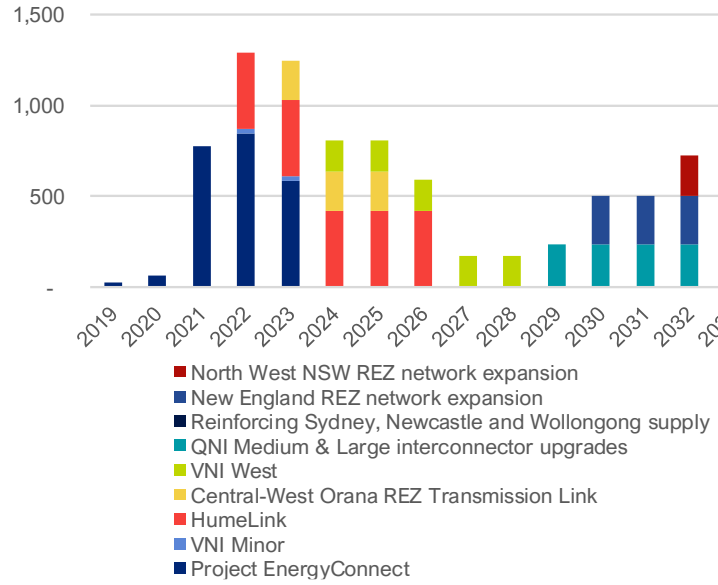
We can also observe that the impact of the rule change proposal is more significant in this scenario, relative to the no rule change case. As a simplistic – and relatively conservative – illustration of the impact of the rule change in this scenario:

- Under the no rule change case, to achieve a minimum FFO / Net Debt ratio of 7% (in all years), the gearing level would need to be reduced from 60% to 49% (modelled as a flat reduction across all years).
- Under the rule change case, the reduced gearing requirement would be 56%.

ISP Scenario 2 – All Actionable and Future Projects (2020 ISP)

This scenario considers an ISP investment program of approximately $9.8b (real $2018/19), over the next decade. This is based on all the 2020 ISP projects that have been identified as relating to TransGrid, both actionable and future.[24] We note that there is considerable uncertainty around both the cost and timing of these projects, with the 2020 ISP indicating a cost range between approximately $7.5b - $12.1b.

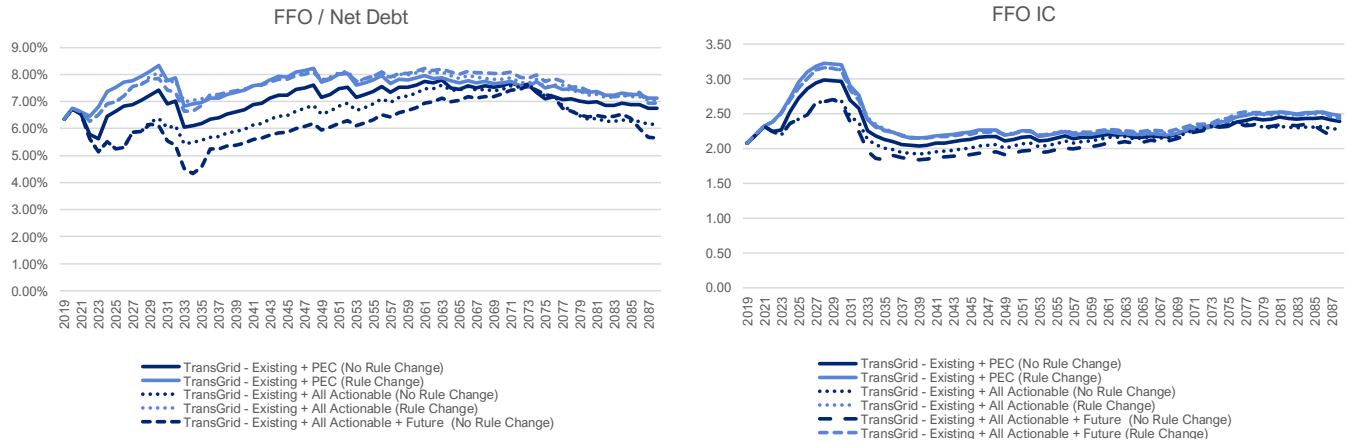
Figure 2.5: TransGrid – ISP Scenario 2: All actionable and future ISP projects ($m, real 2018/19)



Source: CEPA analysis of AEMO 2020 ISP.

If we assume that the notional TNSP continues to be financed at 60% gearing, the overall scorecard indicated outcome remains within a Baa1 range under the rule change scenario (as is the case for TransGrid, currently), but falls to Baa2 for several years in the early 2030s under the no rule change scenario. This is driven by financial ratios that, in the rule change scenario, are broadly similar in both ISP scenarios, despite the higher level of investment. Under the no rule change scenario, we can observe that there is a more marked decline in the performance of the FFO/ Net Debt ratio in particular. These outcomes are illustrated in the figures below for selected credit metrics, under both the rule change and no rule change cases.

Figure 2.6: FFO / Net Debt and FFO IC - TransGrid: All actionable + future ISP projects



[24] As noted above, for this illustrative scenario, we have: assumed the central case for project costs and completion dates; applied simplified assumptions in relation to the profile of capital expenditure; and where projects are shared between multiple TNSPs, we have assumed that the costs are shared equally.

Accordingly, the effect of the rule change proposal is again more significant in this scenario, relative to the no rule change case. As a simplistic illustration of the impact of the rule change in this ISP scenario:

- Under the no rule change case, to achieve a minimum FFO / Net Debt ratio of 7% (in all years), the gearing level would need to be reduced from 60% to 45% (modelled as a flat reduction across all years).
- Under the rule change case, the reduced gearing requirement would be 56%.

Overall, we note that it appears significantly more challenging for a notional company, financed at the benchmark efficient gearing, to achieve an investment grade credit rating at the benchmark gearing level, if it were to undertake a level of investment commensurate with the full portfolio of TransGrid's potential ISP projects. However, we think it is important to balance this assessment against the following factors:

- There is a high level of uncertainty around the outcomes of this analysis, given the wide spread in the cost and timing projections associated with future ISP projects.
- The analysis is also highly dependent on other assumptions, such as the assumed level of BAU capex and future allowed rates of return, which we consider in the following section 2.2.4.
- The illustrative – and relatively conservative – scenarios that we have tested suggest that under the current framework, a reduction in gearing to approximately 45-50% might better support a credit profile consistent with investment grade, under more capex intensive scenarios. As we discuss further in section 3.2.1, while this is lower than the current notional gearing level, it is not necessarily inconsistent with the current rate of return framework, or reasonable expectations of a workable capital structure in the context of substantial RAB growth.

2.2.4. Other sensitivities

Cost of capital

As noted in section 2.1.1, we consider that TransGrid may not have based its analysis on a consistent rate of return scenario. In particular, while the assumed benchmark cost of debt falls in the near term, and then rises in the longer term, the assumed return on equity is fixed at the 2018 RORI indicative level. However, given how estimates for these parameters are constructed under the AER's RORI framework, we would expect some degree of directional relationship between the return on debt and equity (other factors held constant).

We also note that up to the end of FY23, TransGrid and ElectraNet are not subject to a rate of return determined under the 2018 RORI, but rather the allowed return set in their current regulatory determinations. This includes an allowed return on equity of 7.40%, as compared to the indicative 2018 RORI level of 6.36%.

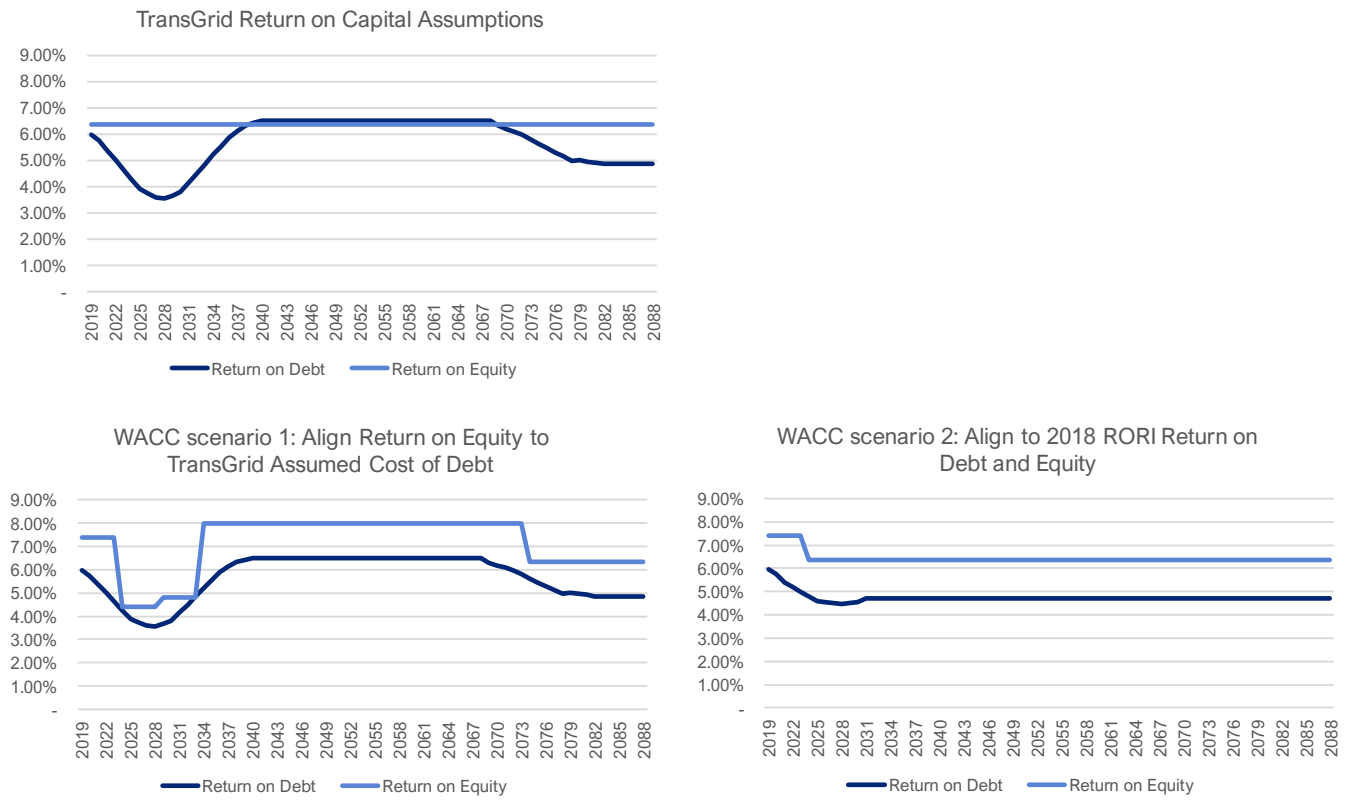
It is beyond our scope for this assignment to construct forecasts of likely future outcomes for the return on capital. Nonetheless, we consider that is important to highlight the impact of these assumptions. To test this, we have constructed two alternative scenarios, that illustrate how these would affect the outcomes of the analysis, relative to the return on capital scenario put forward by TransGrid (on which our analysis in the preceding sections is based).

The alternative scenarios we have considered are:

- WACC Scenario 1: In this illustrative scenario, we retain TransGrid's assumed benchmark cost of debt, but modify the assumed return on equity such that movements in this parameter are more consistent with the direction of the cost of debt. Specifically, we have assumed that annual movements in the assumed benchmark cost of debt are mirrored in the assumed risk free rate that underpins the allowed return on equity. This results in a near term decline in the assumed return on equity, and then an increase in the medium to longer term. In addition, up to the end of FY23, we apply TransGrid's current return on equity allowance.
- WACC Scenario 2: In this scenario, we have retained the 2018 RORI indicative return on equity allowance of 6.36%, but adjust the assumed benchmark cost of debt so that it is consistent with the level indicated at the time of the 2018 RORI determination (4.70%). This results in a cost of debt assumption that is slightly above TransGrid's in the near term, but lower over the longer term. As with Scenario 1, up to the end of FY23, we apply TransGrid's current return on equity allowance.

The rate of return assumptions under each scenario are set out in the figures below and further detailed in Appendix B.2. While we do not consider that these scenarios represent likely outcomes, they are nonetheless illustrative of an overall cost of capital that is, broadly, internally consistent.

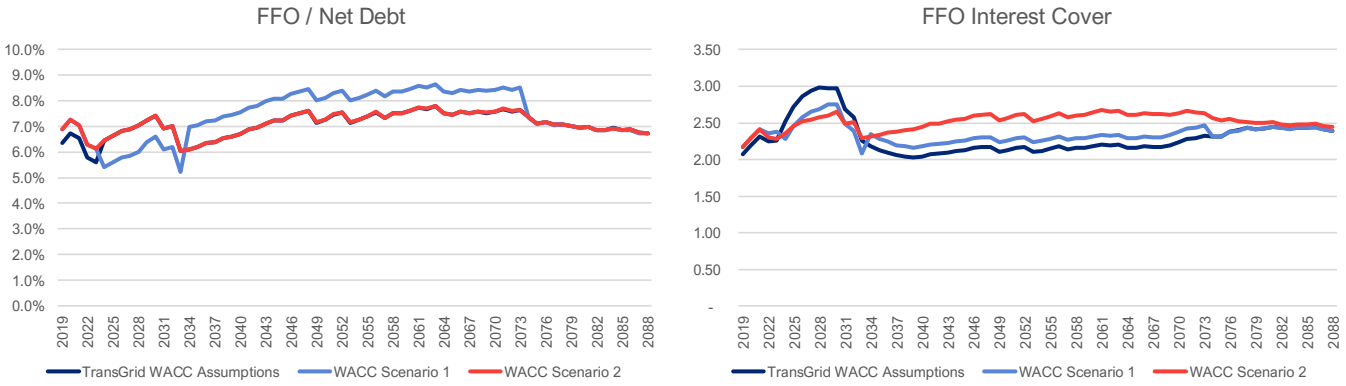
Figure 2.7: Return on capital - illustrative scenarios



Source: CEPA analysis

The impact of these scenarios on selected credit metrics for TransGrid under the current framework is illustrated in the figure below. Additional analysis of financial metrics and credit ratings is provided in Appendix C.2.2.

Figure 2.8: Return on capital - Illustrative scenario outcomes, existing RAB + PEC



Source: CEPA analysis

These scenarios highlight that the impact of alternative cost of capital scenarios on an assessment of credit strength can be material. Ultimately, we note that the future allowed return on capital is subject to considerable uncertainty. Accordingly, this suggests that a cautious approach is required to drawing conclusions on financeability over the long term, where allowed returns may be changing over time.

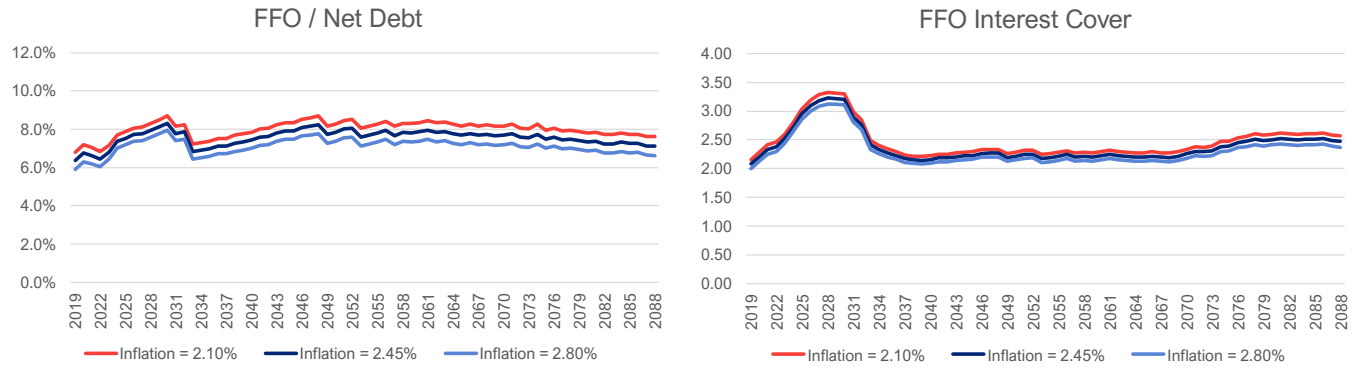
Inflation

As an additional sensitivity, we tested the impact of lower and higher levels of inflation (maintaining the assumption that actual and expected inflation coincide).

In its 2020 review of the regulatory treatment of inflation, the AER adopted a new approach to estimating expected inflation. The AER calculated that, if it used the latest RBA forecasts of inflation, its determination of expected inflation under the new method would be 35 basis points (bps) lower than under its previous method.[25]

We tested an illustrative scenario with inflation 35bps lower than our baseline assumption of 2.45% (adopted in the 2018 PTRM for both TransGrid and ElectraNet), as well as a symmetric scenario for 'high' inflation. The impact of these scenarios on selected credit metrics for TransGrid under the current framework is illustrated in the figure below. Additional analysis of financial metrics and credit ratings is provided in Appendix C.2.3.

Figure 2.9: Expected inflation - Illustrative scenario outcomes (TransGrid), existing RAB + PEC



Source: CEPA analysis. Note: the analysis is based on TransGrid's WACC assumptions.

We note that this analysis relies on an assumption that inflation expectations, as well as actual inflation, will remain constant over the modelling period. While this is an important simplification, the illustrative scenarios indicate that with lower inflation credit metrics would appear stronger (as a consequence of annual revenue allowances being systematically higher compared to the central case), and vice versa.

2.3. INTERPRETATION OF RESULTS

Broadly, the results of our financial analysis are similar to the evidence provided by TransGrid and ElectraNet (allowing for differences in assumptions). That is, with an investment profile consistent with the TransGrid and ElectraNet share of the PEC ISP project, financed at the benchmark efficient entity's capital structure, a notional TNSP would face pressure in relation to its FFO/Net Debt ratio.

However, our analysis also indicates that:

- **Evidence on the FFO/Net Debt Ratio should be balanced against other factors**

  We consider that the TNSPs have provided an overly narrow interpretation of how the observed changes in these ratios would impact whether a company, with TransGrid and ElectraNet's PEC investment profile, could achieve the benchmark credit rating at the benchmark gearing level. In particular, their analysis rests on movements in FFO / Net Debt, just one of several financial ratios that are considered by Moody's, alongside a range of other qualitative and quantitative indicators. Within Moody's assessment framework, while FFO/Net

[25] AER (2020), *Regulatory treatment of inflation,* December, p.64. Under the AER's previous method, the estimate of expected inflation used a 10-year average of the RBA's headline rate forecasts for one and two years ahead, and the mid-point of the RBA's target band (2.5%) for years three to 10. The new approach reduces the averaging period to five years, applying a linear glide-path from the RBA's forecasts of inflation for years 1 and 2 to the mid-point of the inflation target band in year 5.

Debt is an important consideration, it represents just 12.5% of the factors that weigh in the overall credit assessment. The analysis above indicates that performance against other financial ratios, in particular Net Debt/RAB and FFO Interest Cover would likely be stronger than that indicated by the FFO/Net Debt ratio alone. Our analysis indicates that the levels of the FFO Interest Cover metric, with and without the rule change, is broadly consistent with the threshold guidance provided by Moody's for a Baa1 rating, while the gearing ratio is considerably stronger than the tolerance level for Baa1. If we were to consider an overall scorecard approach, inclusive of qualitative elements and the other financial ratios, the overall indicated rating for TNSP in these circumstances could be considered to be consistent with a Baa1 credit profile, or stronger, over the period modelled.

We agree that Moody's may, based on their analysis of other factors, choose to apply a rating that is lower than the grid-indicated outcome. For example, if the utility falls significantly outside the guidance provided on key credit metrics, this could outweigh the evidence of the scorecard rating. However, we consider that it is problematic to conclude that credit metric guidance provided by Moody's in relation to TransGrid and ElectraNet can be assumed to apply directly to a notional entity. Guidance provided by Moody's on the FFO/Net Debt ratio sits within the context of the other credit metrics and qualitative factors that contribute to the network companies' rating. For example, Moody's forward view for TransGrid reflects a Net Debt / RAB ratio in the high-80% range over the next 12-18 months, well above the notional 60% gearing level. Moody's 2-3 year forward view for ElectraNet's Net Debt / RAB ratio is also in the mid- to high-80% range. Further, our review of recent credit opinions for the companies indicates there are a range of company-specific factors that also weigh in the assessment, including the risks associated with non-regulated revenues, and the companies' historical financial policies in relation to targeting a particular credit rating. Accordingly, is not certain that Moody's *would* provide guidance that an FFO/Net Debt ratio of at least 9% would be required for a 'notional' TNSP to achieve a Baa1 rating, had the entity consistently been financed at the benchmark gearing and historically targeted outcomes consistent with Baa1. Therefore, while it is reasonable to have regard to Moody's guidance on particular metrics when considering the financeability of ISP projects, it should not be interpreted as a strict requirement, Therefore, while it is reasonable to have regard to Moody's guidance on particular metrics when considering the financeability of ISP projects, it should not be interpreted as a strict requirement, in particular when it was given for an actual rather than a notional business with different key characteristics, including leverage, corporate policy on maintaining a rating, and additional sources of revenue.

- **The extent of improvement resulting from the proposed rule change is relatively marginal**

  Consistent with the TNSP's modelling, our analysis also indicates that performance against the FFO/Net Debt ratio would likely improve, if the proposed rule change were adopted. However, considered in the context of the TNSPs' existing RABs and maintaining the 60% gearing assumption, the difference in the overall performance against the quantitative and qualitative ratings factors is relatively small. This raises questions of the materiality of the rule change's effect, and consequently the significance of the financeability challenge that has been highlighted by the rule change proponents. Consistent with this result, our analysis indicates that the network companies would need to make a relatively small change from the notional capital structure (i.e. gearing within a range of 55-58%, rather than 60%) in order to achieve ratios consistent with the rule change scenario.

Overall, our analysis suggests that a notional TNSP with an investment profile consistent with TransGrid and ElectraNet's share of the PEC project, financed at 60% gearing and receiving the benchmark rate of return, would likely be able to retain an investment grade rating. While more challenging, the TNSP may also be able to obtain the benchmark rating of Baa1/BBB+, at the notional gearing level, although this would depend partly on the extent to which qualitative factors are weighted in the assessment and the specific tolerance levels that a ratings agency might set for this hypothetical entity. Finally, the small change in gearing that would be required to achieve an FFO/Net Debt ratio consistent with the rule change proposal case is also consistent with a conclusion that this investment profile is financeable within the current framework (see further discussion on changes to gearing below).

We note that this analysis is strongly influenced by the assumptions, in particular in relation to the allowed rate of return, inflation, the timing of ISP projects, and the magnitude of future ISP investments. Our scenario analysis in

relation to these issues indicates that different assumptions could change our assessment. In particular, in a scenario where all identified ISP projects for TransGrid and ElectraNet are reflected in the analysis, while the scorecard-indicated outcome remains consistent with a Baa1 rating, performance against key coverage metrics is weakened, and the change in notional gearing to achieve ratios consistent with the rule change case is more substantial (although not necessarily unreasonable, as discussed further below). The analysis is also sensitive to changes in future rate of return instruments. For example, if we were to assume a return on equity that is more consistent with the cost of debt profile assumed by TransGrid, financial performance of the notional entity would be substantially weaker in the near term, but much stronger in the longer term.

Our analysis, which has considered the full range of evidence that rating agencies use to determine credit ratings, indicates that the ISP investment plans are likely to be financeable under the current regulatory approach. However, in more investment intensive scenarios, the TNSPs may be required to adopt capital structures that differ from the notional assumption. We consider this, and other actions that a TNSP, or the AER, could potentially take to improve credit profiles during an investment-intensive phase, in the following section.

3. ALTERNATIVE APPROACHES

In this section, we consider potential alternative options for addressing the concerns raised by TransGrid and ElectraNet, in particular:

- How a TNSP could potentially respond to address a financeability concern.
- Potential regulatory responses that the AER could take, in the event it considered that action was required.
- Broader alternatives to the current regulatory framework.

3.1. OPTIONS CONSIDERED BY THE RULE CHANGE PROPONENTS

In its rule change request, TransGrid notes that it sees limited scope to address its financeability concerns within the existing regulatory framework:

> *"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."* [26]

Further, TransGrid notes that it has *"…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."*[27] In particular, we understand that TransGrid has considered whether accelerated depreciation and reduced asset lives could materially strengthen its projected FFO/Net Debt ratio. We understand that ElectraNet has not presented its own analysis of potential alternative options.

We consider that the rule change proposals have not fully explored several alternative options, which we discuss in the following sections.

3.2. POTENTIAL RESPONSES BY TNSPS

3.2.1. Alternative capital structure

The rate of return framework for Australian energy networks

TransGrid and ElectraNet have determined that they would not be able to maintain an investment grade credit rating if they both undertook ISP investments and maintained gearing at 60% of the RAB, the notional gearing of the benchmark efficient entity used by the AER in its determination of the rate of return. The TNSPs claim that, as a result, the revenue profile they receive needs to be changed so that they have the ability to both undertake the investments and maintain 60% gearing.

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[26] TransGrid, *Rule Change Request*, page i.

[27] TransGrid, *Rule Change Request*, page 7.

However, our reading of the NEL and NER requirements is that they do not appear to impose a duty on the AER to provide a revenue stream that ensures that a company can maintain a specific gearing level. The Revenue and Pricing Principles in section 7A of the NEL require that network providers should have "*a return commensurate with the regulatory and commercial risks involved in providing the …service*".[28] In particular, the allowed rate of return objective is that the allowed rate of return is to be *"commensurate with the efficient financing costs of a benchmark efficient entity with a similar degree of risk as that which applies to the service provider in respect of the provision of its regulated services"*.[29]

The relevance of the notional gearing of the benchmark efficient entity is that it is used to estimate what the efficient financing costs are. It is a construct: it is not envisaged that actual companies need to be financed at the notional gearing or will be identical to the benchmark efficient entity. As explained in Text Box 3, this is because the benchmark gearing is not set with reference to a particular investment profile, but rather reflects the experience of the comparator sample used to estimate gearing and beta.

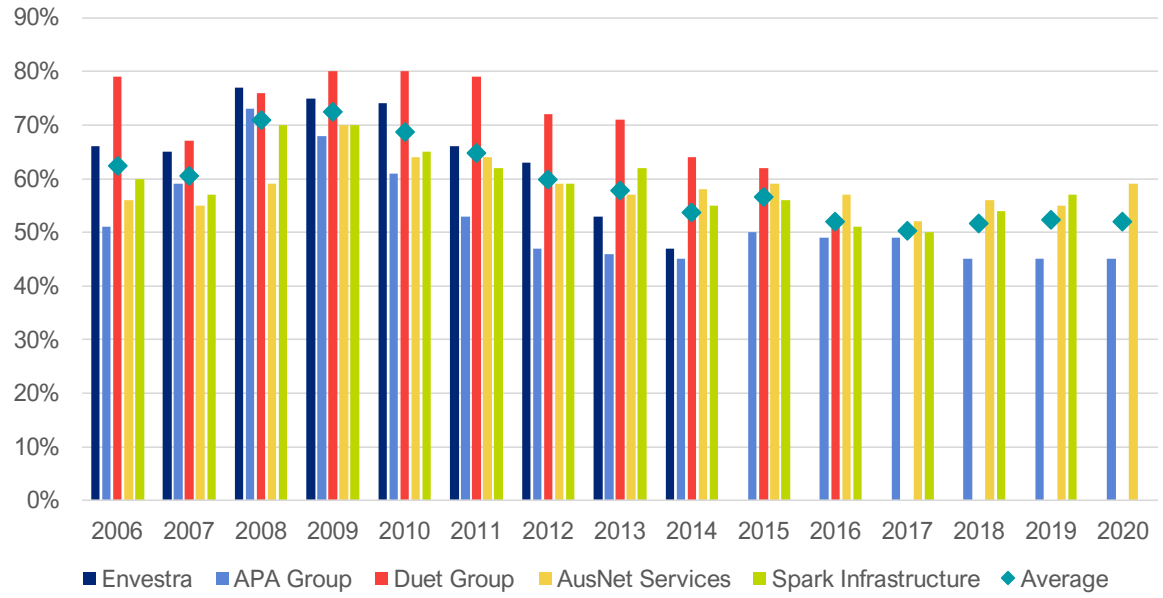
[28] NEL, 7A(5).

[29] NER, Clause 6A.6.2 (c).

Text Box 3: What is the benchmark efficient entity?

- The benchmark efficient entity is a construct for setting the regulated rate of return determined by the AER.
- The AER determines rate of return parameters that are consistent with a benchmark efficient entity with reference to market evidence. For example, in the figure below, we outline the comparator evidence that the AER relied on to set the benchmark gearing level of 60% in the 2018 RORI.

Figure 3.1: Market-based gearing values, listed Australian energy networks



Source: AER (2020), Rate of return instrument – 2020 Update, December, p. 6. Note, the figure includes two additional years of data that have become available after the 2018 RORI determination.

- From this, we can see that the gearing parameter broadly, but not precisely, reflects the average of actual network companies, who are able to finance their operations and therefore by definition 'financeable' (that is, able to finance their particular investment requirements, at their credit rating and cost of capital).
- The benchmark cost of capital parameters are therefore consistent with a *range* of different capital structures and investment profiles, reflecting the underlying diversity of the comparator firms.
- Overall, the benchmark efficient entity framework is intended to provide a long-term efficient return on capital.
- This discussion assumes that the comparator sample, and other market information, used to construct the benchmark efficient parameters are appropriately defined and estimated, which is not an issue raised by this rule change.

Importantly, there is no expectation that a given TNSP will adopt the notional capital structure, nor an obligation on the AER to finance companies at the notional gearing whatever the profile of their capital expenditure. This means that when a TNSP's investment profile departs from 'business as usual', the optimal capital structure for that TNSP may change. In a period of investment and expansion, as will be needed to deliver the ISP projects, cash flow pressures will naturally increase, resulting in a tightening of credit metrics. However, pressure on credit ratings can be mitigated by a more prominent role for equity financing and lower gearing.

Indeed, the Australian regulatory framework anticipates that heavy investment programmes may be accompanied by lower gearing. In the 2018 RORI determination for example, in response to the observation that financial metrics (in particular FFO/ net debt) would be relatively low for some regulated firms, the AER noted that the key countermeasure firms might take would be to reduce their gearing.[30] This approach has been a feature of the regulatory framework for many years and would be anticipated by investors.

[30] AER (2018), *Rate of return instrument, explanatory statement*, December, p. 402.

Therefore, an assessment that a notional company might not achieve the benchmark credit rating, if it finances a particular investment program at the benchmark capital structure, is not sufficient evidence to conclude that there is a fundamental financeability problem under the current regulatory framework.

In a period of investment and expansion, it is likely that gearing below the benchmark level might be needed to maintain the benchmark credit rating (although as we have noted in section 2.2.2, this is not conclusively the case, at least for the projected PEC investment). In less capital-intensive periods, revenues may support the benchmark credit rating under a more highly geared structure. Changes to capital structure of this nature can be considered consistent with a competitive market, in which growth is typically financed by calls on equity and recovered over time.

In recognition of these issues, we note that it is common in regulatory assessments of financeability to consider changes to the notional company's capital structure, to reflect actions that management might take to strengthen the credit profile of the company, including raising equity and re-investing a higher proportion of profits in the growth of the business. We consider how such adjustments have been applied in regulatory settings in section 3.3, but note that these are indicative of changes that *actual* network companies can take to finance new investments.

The rule change proponents' views

However, we note that the rule change proponents have largely dismissed the viability of managing their financeability concerns by reducing gearing below the notional level, on the basis that it would not accommodate the expectations of existing and potential new investors. For example, in its report for TransGrid, Incenta express the view that:

> *"[a]n electricity transmission business – in common with many infrastructure assets – has a clientele of investors that have been attracted by a stable equity return that is at a level commensurate with a relatively high gearing ratio. […] We observe here that the existence of an investor clientele is reasonable and well supported by the evidence such that a regulated network business may encounter difficulties with raising capital for projects that would cause a materially reduced equity returns from the level that is commensurate with the regulatory benchmark 60:40 gearing level."*[31]

Further, Incenta consider that *"[i]t should be no surprise, therefore, that equity investors have formed expectations about the return from regulated energy networks based on an assumption that this benchmark gearing level would be achievable and pursued in practice."* [32]

Our observations

We consider that the analysis provided by the rule change proponents does not conclusively demonstrate that a TNSP would not be able to adopt an alternative capital structure, perhaps in combination with other actions, should this be required to finance its planned investment program.

Firstly, we can observe a range of capital structures for regulated Australian networks over time, both above and below the benchmark gearing level, suggesting that a range of approaches are "pursued in practice" and have been acceptable to investors. This is illustrated in Figure 3.1 above, which reports on the evolution to 2020 of market based gearing values of the comparator firms that informed the AER's 2018 RORI determination of gearing for the benchmark efficient entity. Indeed, the AER itself noted that comparators appear to have decreased gearing in recent years, commenting: *"this appears to shows service providers are able to adjust their gearing to meet their financial needs despite our benchmark being 60%"*.[33]

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[31] Incenta, *Attracting capital for ISP Projects*, September 2020, page 10.

[32] Incenta, *Attracting capital for ISP Projects*, September 2020, page 11.

[33] AER (2018), *Rate of return instrument, explanatory statement*, December, p. 67.

We also note that in the 2018 RORI, the AER decided against reducing the benchmark gearing level to 55%, consistent with the average of the comparator sample over the previous five years. We understand that the primary reason for this decision was that the allowed efficient rate of return was relatively insensitive to fluctuations in the gearing level. That is, at a lower benchmark gearing level, at which implied credit metrics would improve, overall allowed revenues would be largely unchanged (and even slightly lower), suggesting that under the rate of return determination, the companies would be able to adjust their gearing within the overall allowed revenue envelope.

Put differently, had the AER adopted a lower notional gearing level (as was open to it, given the market evidence), the allowed revenues of the network companies would not have been substantially different (and may even have been slightly lower). This led the AER to conclude that "*our regulated return on capital allowance, based on a 60% benchmark gearing ratio, should be sufficient for all regulated firms to finance their operations. To the extent that some firms need to reduce their gearing our analysis indicates our allowed cash flows are expected to be sufficient".* [34]

As outlined in section 2.2.2, a relatively modest change to gearing levels (i.e. 55-58%, rather than 60%) would be sufficient to achieve FFO/ Net Debt ratios consistent with the rule change proposal. As illustrated above, this level of gearing is in line with the market evidence considered by the AER in its RORI analysis.

Secondly, we note that it is clear the current regulatory framework applied in Australia does not make use of financeability assessments and specific cash flow adjustments to support financeability, as have been applied elsewhere. Therefore, it is reasonable to assume that investors would understand this feature of the regulatory framework, and therefore expect that equity contributions may be required to fund substantial RAB growth. Further, we note that in jurisdictions where financeability assessments *are* a key element of the regulatory framework, it is not uncommon for:

- Notional gearing levels to change over time, and in particular for regulators to assume that the notional company would need to make equity injections to reduce gearing levels, in order to address weaknesses in credit metrics (Text Boxes 4 and 5 below).
- Regulators to set notional gearing levels well below 60%, and for regulated energy networks to have actual gearing levels below 60% (Text Box 6).

This suggests that it is reasonable to expect that investors in Australian energy networks – including alternative future investors, as well as current shareholders – would anticipate the need for lower gearing levels in the context of an unprecedented program of investment.

Text Box 4: Ofgem's adjustments to notional gearing

In past determinations, Ofgem has adopted **lower notional gearing structures for companies with large forward investment programs**. One example of this is its RIIO-T1 determination for Scottish Hydro Electric Transmission plc (SHE-T), one of the UK's three electricity transmission network operators (TOs).

Ahead of the RIIO-T1 regulatory determination period, SHE-T projected that its regulatory asset value (RAV) would increase by 300 per cent in eight years, due to expansion and reinforcement of the transmission network to accommodate the anticipated growth of renewable generation.[35]

[34] AER (2018), *Rate of return instrument, explanatory statement*, December, p. 404.

[35] From £1.2b in 2013/14 to £3.6b in 2020/21 (in 2009/10 prices). SHE-T, 2012, *Our Business Plan for the next decade: January 2012 update*, p. 35. https://www.ssen.co.uk/WorkArea/DownloadAsset.aspx?id=1471

For the RIIO-T1 determination, Ofgem "fast-tracked" SHE-T's RIIO-1 business plan alongside SP Transmission Ltd (SPTL).[36] National Grid Electricity Transmission plc (NGET) and National Grid Gas Transmission plc (NGGT) were not fast-tracked and their business plans were exposed to greater scrutiny. Between the companies there were a number of differences in the key financial metrics applied by Ofgem.

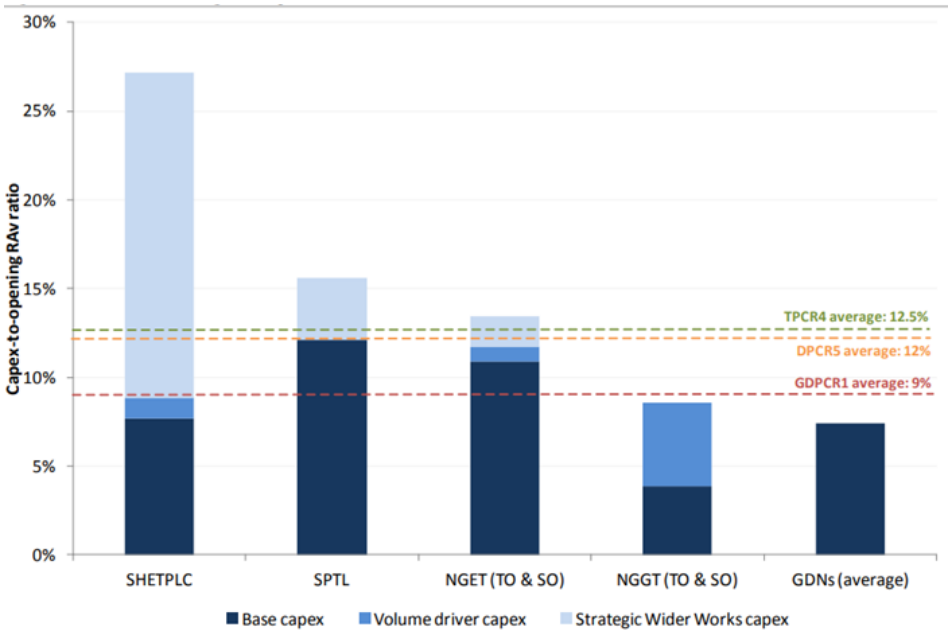
Some of these parameters reflected Ofgem's assessment that SHE-T was a "special case" because of its very high capex/ RAV ratio (as illustrated in the figure below).[37] Most of SHE-T forecast capex was contained within uncertainty mechanisms whereby funding could be 'unlocked' within the price control period based on certain trigger conditions.

In contrast to the other TOs, Ofgem also provided SHE-T with specific adjustments intended to improve its financeability in light of the expected large investment programme:

- A cost of debt based on a 10-year trailing average, weighted by RAB additions.
- A two-period (16 years) transition to the new economic asset life assumption.[38]

SHE-T and SPT received that same cost of equity (7%) and notional gearing (55%) despite having materially different capex/ RAV ratios. NGET also received a cost of equity of 7%, but notional gearing of 60%. NGGT received cost of equity of 6.8% and notional gearing of 62.5%.[39] This suggests differences in notional gearing and cost of equity parameters between companies may have reflected a mix of factors in addition to the projected RAV/ capex ratios, including Ofgem's application of the fast-track process.

Figure 3.2: Average capex-to-RAV ratios in RIIO-T1 and RIIO-GD1



[36] In RIIO-1, if a business provided realistic and well-justified business plans, Ofgem would apply less scrutiny and "fast-track" its final decision by 12 months. A feature of this process was that a fast-tracked company should not be worse off than if it had not been fast-tracked.

[37] https://www.ofgem.gov.uk/sites/default/files/docs/2012/04/spt_shetl_support_ip_0.pdf, paragraph 5.24

[38] Ofgem made a strategy decision to assume an economic asset life of 45 years for new electricity transmission assets compared to the previous 20-year assumption. SPT and NGGT were provided with an eight-year transition period to the 45-year assumption whereas SHE-T was provided with 16-year transition.

[39] https://www.ofgem.gov.uk/sites/default/files/docs/2012/12/4_riiot1_fp_finance_dec12.pdf

Text Box 5: NIE Networks, lower notional gearing at RP5

In its 2012 RP5 price control determination for Northern Ireland Electricity's (NIE) transmission and distribution business, the Utility Regulator (UREGNI) **reduced the notional gearing level** to 50%, as compared to 60% in the previous price control period.

In deciding to reduce notional gearing, UREGNI noted that:

- *"Considering the significant level of capex estimated for renewables (£223 million) this would represent significant growth of the company's RAB (>20% growth in real terms). It is prudent to assume that new capital will be needed. We would expect an investment of this scale to be funded through a mixture of both debt and equity."*[40]
- *"…a lower level of gearing is more appropriate during a growth phase and when there is some investment uncertainty (timing and quantum) […] We consider that this level of gearing should allow NIE T&D to maintain a solid investment-grade credit rating."*[41]

In making this decision, UREGNI was cognisant that *"…the equity beta and therefore the post-tax cost of equity value are lower than the draft determination figures as a result of the change in gearing"*.[42]

In the most recent RP6 determination (2017), UREGNI further lowered the notional gearing level to 45%. In response, NIE *"highlighted that 45% gearing is a relatively lowly geared capital structure in comparison to other regulated networks [and] suggested that the cost of capital should be calibrated to a licensee with gearing of 50%."*[43] However, UREGNI noted that *"the final WACC figure is not especially sensitive to gearing"*.[44]

While noting that the business appeared financeable at the 45% gearing level, UREGNI further noted that *"the appropriate response to any rating pressures that the licensee encounters [at the notional 45% gearing level] would be for the business to seek to finance more of its RP6 investments with equity capital and take on a smaller amount of new borrowing. The allowed rate of return in this determination is capable of supporting a range of capital structures – e.g. the calculated weighted average cost of capital at 40% gearing and 45% gearing would be virtually identical – meaning that NIE's overall revenues need not be viewed as being dependent on any particular forecast on the UR's part about NIE's future levels of gearing."*[45]

Text Box 6: Notional gearing and actual gearing precedent

An examination of regulatory decisions in comparable regimes indicates that it is not uncommon for the notional gearing level to be set well below the 60% assumption reflected in the AER's 2018 RORI decision (Figure 3.3). Further, we can observe that gearing levels for listed utilities globally have also been consistent with lower levels of gearing (Figure 3.4).

This does not imply that the AER should set a different notional gearing level for Australian energy networks, or that it should consider different evidence in reaching its decision. Rather, this supports the view that investor expectations of notional gearing outcomes would reasonably encompass levels below 60%.

[40] UREGNI, *Northern Ireland Electricity – Transmission and distribution price controls – 2012-17 – Final* Determination, October 2012, page 109.

[41] Ibid., page 93-94.

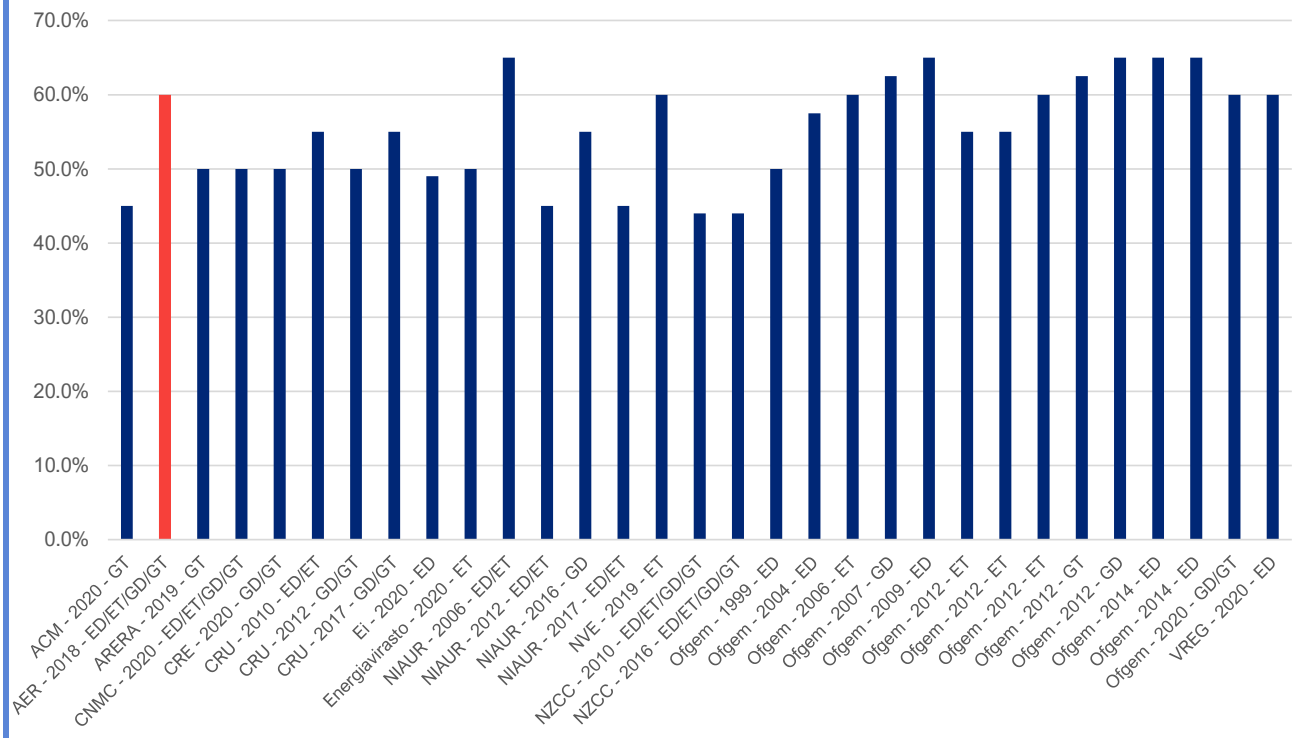
[42] Ibid., page 96.

[43] UREGNI, *Northern Ireland Electricity Networks Ltd – Transmission & Distribution 6th Price Control (RP6) – Final* Determination, June 2017, page 220.

[44] Ibid., page 221.

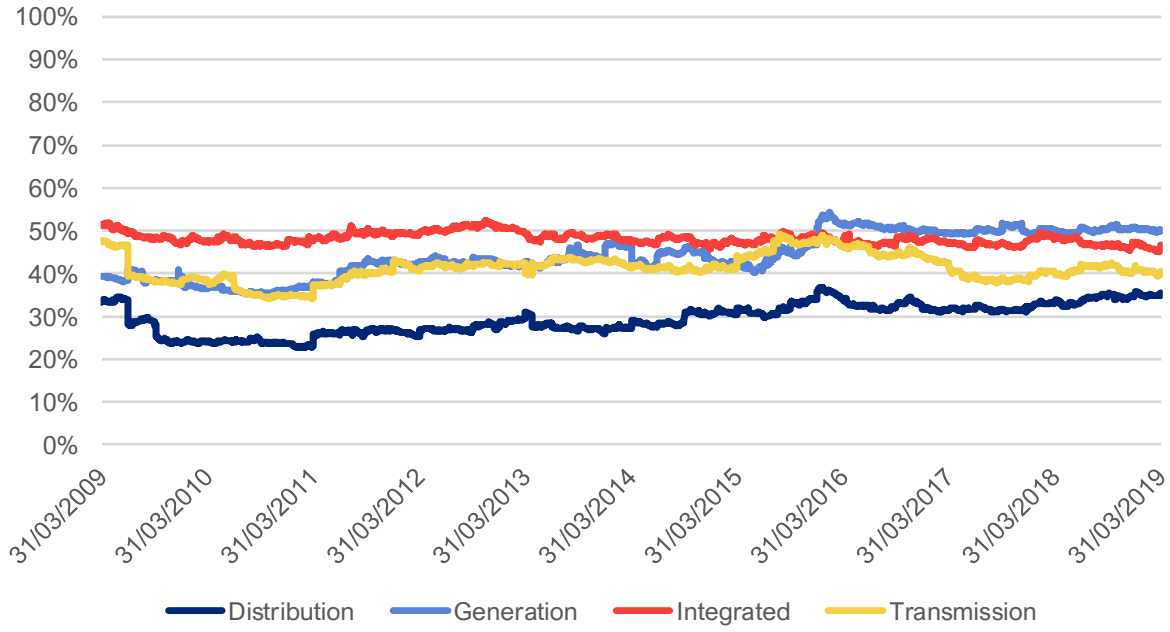
[45] Ibid., page 228.

Figure 3.3: Selected regulatory precedent on notional gearing



Source: CEPA analysis of regulatory determinations

Figure 3.4: Gearing of listed global utilities



Source: CEPA analysis of Bloomberg / Thomson Reuters data.

Thirdly, the TNSPs claim that a reduction in gearing would reduce the return on equity to below the returns required by investors. For example, TransGrid consider that to maintain an investment grade credit rating: "*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". [46]

While we note, in section 2.2.2, that a relatively small reduction in gearing would be enough to achieve FFO/ Net Debt levels consistent with the proposed rule change, we consider that there is a more fundamental issue with TransGrid's interpretation of an 'uneconomic' return on equity.

Indeed, lower gearing reduces return on equity. In the allowed cost of capital, this outcome would be mechanically reflected through a reduction in the equity beta – i.e., the parameter that measures the volatility of returns on the investment relative to the equity returns in the stock market as a whole – and accordingly in the allowed cost of equity. [47] However, TransGrid's argument fails to consider that while deleveraging reduces returns to equity holders, this reflects the lower risk implied by the reduction in gearing. In other words, a reduction in gearing should not be considered 'uneconomic', as it would reduce both risk and returns in a way that is approximately value neutral.

As we note above, the regulatory framework is designed to provide an overall rate of return commensurate with the level of risk faced by the TNSPs, rather than a level of gearing that enables high dividend payments regardless of the size of the TNSPs' investment plan.

While it is possible that the balance of risk and return associated with a lower level of gearing is different from that required by the current shareholders of the TNSPs, it does not follow that the current regulatory framework requires changes in order to make TNSPs an attractive investment. Other potential shareholders may be more interested in funding the growth of the TNSPs under the existing framework. Globally there is substantial demand for attractive infrastructure assets, and Australian TNSPs are sought after "core infrastructure" assets. This conclusion is also supported by the above observations on levels of both notional and actual gearing for Australian and global regulated networks.

We also observe that both TransGrid and ElectraNet have recently been able to raise debt and equity financing despite the perceived risk of being burdened with capex projects which they consider to be uneconomic under the current framework. Many of the projects included in the ISP have been in development for several years though the exact details and costings have changed over time. For example, Spark Infrastructure, as part owner of TransGrid, has in several previous investor presentations outlined the likelihood that TransGrid would proceed with several substantial capex projects in the near future. For example, its February 2018 investor presentation outlined $2 billion to $4.9 billion of future contingent projects.[48]

Evidence of recent issuance, when the likelihood of proceeding with several ISP projects would have been well known, includes:

- The acquisition of a 19.9% stake in TransGrid by OMER in July 2020. We understand the OMER's transaction valued TransGrid at a premium to RAB.
- The issuance by TransGrid of $800 million medium-term notes in September 2020.

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[46] TransGrid, Rule change request, p. 4.

[47] In the WACC calculation, this would partly be counterbalanced by a higher proportion of equity (which is more expensive than debt), meaning that the overall change in the allowed cost of capital would be relatively minor.

[48] Spark Infrastructure (2018), Investor Presentation 26 February 2018 – Future Energy.

- ElectraNet established a $725 million syndicated term loan and revolving credit facility in May 2020.

If we assume that investors were acting prudently these investments would have been made with the assumption that the existing framework would be maintained.

Ultimately, the attractiveness of the investment within the existing framework, i.e., its ability to earn returns that are appropriate for the level of risk faced by investors, depends on the AER's determination of the rate of return parameters.

Fourthly, there is evidence that network companies are able to take action to protect their credit ratings with support from their shareholders. These actions may impact the return on equity in the short term. A recent example is Ausgrid's decision to reinvest rather than distribute dividends in FY20, FY21 and FY22.49 One of the stated reasons for this decision was to support Ausgrid's credit rating. Ausgrid also highlighted a range of other levers available to network companies to support credit ratings. These include operational levers such as cost efficiency, capex program selection and timing as well as capital management levers.

Assessment

Our overall view is that the TNSPs have not provided strong evidence to substantiate the claim that their capital structure could not be varied, to some extent, to assist in accommodating cash flow pressures during a period of growth in the RAB. The regulatory framework envisages the possibility that a TNSP, in a phase of expansion, may be required to decrease its gearing. Examples from both regulatory determinations and actual companies in Australia and overseas suggest that lower levels of gearing are accepted in practice. This evidence is consistent with the view that lower returns on equity are 'economic' if accompanied by a proportionate reduction of risk.

We note that these are ultimately decisions for the actual business and its shareholders, and it is therefore challenging to objectively determine whether new equity from TransGrid and ElectraNet's current investor community would be forthcoming to support the delivery of ISP projects. However, we consider that a key question is not only whether the current investors in regulated networks are necessarily prepared to invest additional equity to fund growth, but whether there is an alternative investor or investors that would be prepared to do so under the current revenue setting framework. We return to this question in section 3.4.

3.2.2. Inflation-linked finance

What is inflation linked finance?

Most bonds are structured to pay a fixed coupon or a variable coupon linked to benchmark rate, in nominal terms. When the bond matures, investors receive the par value of the bond in nominal terms. However, financial securities can be designed to make any stream of payments that their issuers construct and investors are willing to accept. Financial markets have been very creative at constructing innovative securities including with exotic contingent payments.

Inflation linked bonds represents one of the more straightforward financial products as an alternative to nominal financing. A capital linked inflation bond has the following features[50]:

- The amount of the bond repayable at maturity is the issue value increased by the increase in a price index over the period. In Australia, the standard is for the capital value to be adjusted quarterly by movements in the Consumer Price Index.
- A fixed coupon rate, which represents the real interest rate. The payments will vary with the change to the capital value.

[49] Ausgrid (2020), Debt Investor Presentation, July.

[50] Australian Financial Markets Association *Inflation Product Conventions* May 2017.

In Australia, annuity bonds are also available in which the coupon payments increase by an inflation index. We consider here only capital indexed bonds as these are relevant.

Bonds are only one way in which investors may obtain a linkage to inflation. Inflation swaps are a derivative instrument that can be used to replicate the payments of a capital index bond. With these instruments, one side of the swap has payments that represent those of a capital indexed bond, with the other side payments linked to a floating benchmark. The combination of a nominal bond together with an inflation swap can replicate an inflation linked bond.

Rationale for use of inflation linked bonds

Inflation is normally positive, and the RBA sets monetary policy with the aim of achieving inflation within the range 2-3%.

For the **issuer** of an inflation linked bond, with inflation normally being positive, the cash payments associated with the borrowing is lower than for a nominal bond. Coupon payments represent the real interest rate, with the inflation component paid to investors at maturity.

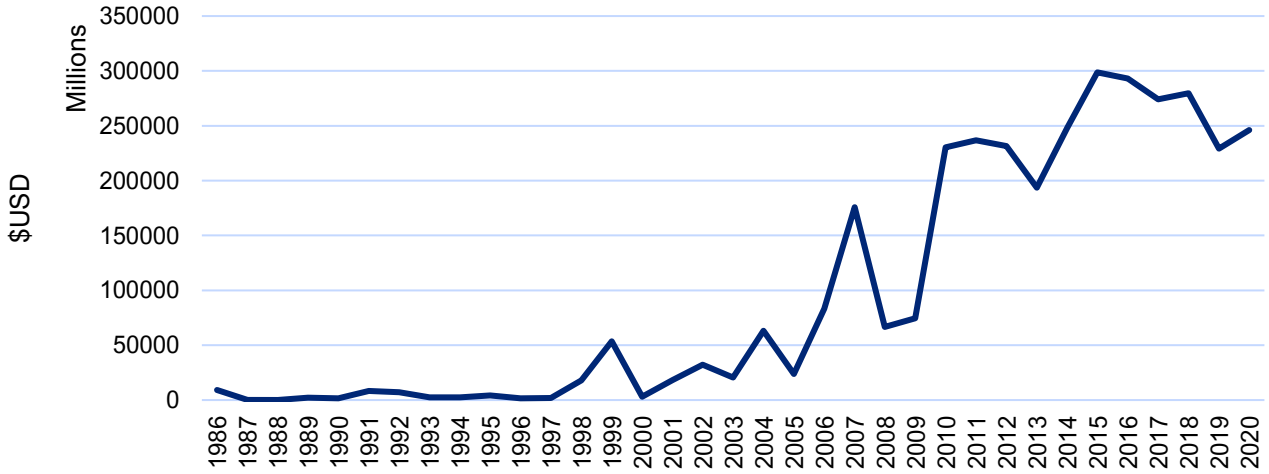
Inflation linked finance makes sense when the underlying assets increase in line with inflation: assets move in step with liabilities. This is the case with energy networks in Australia, where the regulatory framework as set out in the Rules provide for indexation of the regulatory asset values. The lower cash interest costs would improve the credit metrics for company which issues inflation linked bonds. At maturity, the new par value of the debt can be expected to be refinanced, with asset value of the company having increased by the same percentage as the liability.

Inflation linked bonds may be attractive to certain **investors** in particular those which have explicit liabilities linked to inflation or which wish to obtain inflation protection. A superannuation fund with defined benefit obligations is one type of investor for which this type of investment may be particularly suitable, but it can be considered as part of the risk management strategy of any investor seeking balanced growth.

Global experience of index linked finance

While nominal bonds represent the bulk of bond issuance, there has been a steady increase globally in inflation linked bond issuance over the last 20 years. Figure 3.5 shows the volume of issuance globally. Out of total issuance of USD3.4 trillion, the bulk has been by government or government entities, but nevertheless there has been USD258bn from corporate entities.

Figure 3.5. Global issuance of inflation-linked bonds



Source: CEPA analysis of data from Thomson Reuters Eikon[51]

[51] Corporate and government inflation-linked securities, active issuance.

By geography, the largest issuance has been in the US. Corporate issuance of inflation linked securities has been dominated by UK companies, which represents 42% of all corporate issuance. This is not surprising: UK utilities, including those in electricity networks and in water and sewerage provision, have regulatory asset values that increase with inflation. Accordingly, companies have obtained a part of their finance in the index linked market.

Data on companies hedging inflation exposures through swap markets is not readily available. Disclosure on derivative transactions in company accounts is insufficient to derive aggregate statistics. Nevertheless, qualitative disclosure indicates that many companies seek and obtain inflation protection for their liabilities.

Inflation linked finance in Australia

Policy makers have long been concerned about the overall development of the Australian corporate bond market, and this has resulted most recently in the initiation of an Inquiry into the Development of the Australian Bond Market. Characteristics of the Australian bond market have led corporate entities to issue bonds in offshore markets, using swaps to hedge currency exposure, although the pattern of issuance has changed in 2020 in response to the monetary support offered by RBA in response to COVID-19.

In Australia, the bulk of inflation linked securities in issue were issued by the Commonwealth Government. There are currently 39 inflation linked corporate bonds issued, most of which are annuity bonds rather than capital linked. Major companies that have issued capital linked bonds are Sydney Airport, and Commonwealth Bank of Australia.

Given the RAB indexation of assets in Australia, combined with some natural demand for these securities, it is noteworthy that there is limited issuance. We understand that investors wanting this type of exposure express a preference for higher rated bonds, and energy networks are now typically at the lower end of investment grade. With lower levels of issuance and liquidity, the credit margin for these loans on issuance may be higher than those of an equivalent tenor nominal bond. These concerns were expressed e.g. in Spark's submission to the AER as part of its review of expected inflation.[52]

The AER's approach to debt cost indexation in price controls provides a further reason why energy networks have been reluctant to issue inflation linked debt. The AER provides an allowance for the cost of debt which is based on the average cost of debt over 10 years of relevant bond indices of nominal bonds. If a company's debt book is significantly different from this, it bears a risk of out- or under-performance compared to the allowance. Index-linked issuance would increase the residual risk borne by equity holders even though conceptually the approach makes sense.

Corporate issuers of inflation linked bonds in the past typically used a credit wrapper which raised the credit rating through use of insurance. Such insurance has been difficult or impossible to obtain since the global financial crisis. However, even without credit wrapping, we understand that appropriate investors would have interest in such securities, and that use of swap markets provides an alternative way of accessing the market. Discussions with market participants suggest that lack of available issuance to invest in means there is a lack of familiarity with such products.

Assessment

Index-linked finance is a possible option for a company that wishes to retain higher gearing while reducing cash interest costs. The companies proposing the rule changes appear not to have explored this option before making the submission for a rule change. There may be additional costs and risks to companies from this, and we suggest that it would make sense to compare these to alternative actions, and whether this is a better option for customers than the proposed rule change.

If further investigation indicates that it may be worthwhile, we suggest that consideration is given to the AER including inflation linked finance in its approach to estimating the cost of debt.

[52] Spark infrastructure. *Submission to the AER's preliminary position on the regulatory treatment of inflation*. 9 November 2017.

3.2.3. Other alternative financial instruments

Inflation linked instruments are just one option that TNSPs could use to manage cash interest costs while maintaining gearing at the level of the benchmark efficient entity.

We consider that other financial instruments may also support the objectives of financing. For example, zero coupon debt could be issued at a discount to par value, so that investors receive their return through the change in value of the instrument over time, rather than cash interest payments.

A further option would be hybrid securities, which have characteristics of both debt and equity. Preferred equity and contingent securities can be constructed to have returns and risk between those of debt and equity, with cash flow consequences to meet

Financial market participants are creative, and securities that meet the needs of companies and investors are regularly being created. TNSPs could potentially achieve benchmark gearing in effect (i.e. in a way that ratings agencies would recognise, even if the AER in its benchmark gearing would not). While proposing a detailed design for such alternatives structures sits outside the scope of our role for this advice to the AEMC, it is relevant to note that the TNSPs do not appear to have considered them.

3.3. REGULATORY RESPONSES UNDER CURRENT RULES

In this section, we consider ways in which the AER could potentially respond to a financeability concern, should it find that this was required to achieve the NEO and the other requirements of the NEL and NER.

3.3.1. Financeability within the current regulatory framework

In contrast to some jurisdictions, formal financeability assessments do not form part of the AER's revenue setting approach for Australian energy networks operating under the NER. Our understanding is that AER is not prevented from *considering* concerns of the kind raised by TransGrid and ElectraNet. Indeed, the AER has previously considered these issues, for example:

- The AER has previously considered 'financial resilience' analysis in the context of its 2016-2020 determinations for ActewAGL and Networks NSW.[53] However, this analysis was focussed on risks of insolvency, which differs markedly from the financeability assessments conducted by, for example, Ofwat and Ofgem in the UK.
- The AER considered the role of financeability assessments in detail in the context of the 2018 RORI, and we understand that is may revisit this analysis as part of the 2022 RORI.[54]

Accordingly, we consider that it is reasonable to consider under the current rules that the AER is able to assess the merits of the type of arguments put forward by the rule change proponents in making its regulatory determinations, and determinations in relation to key inputs such as the RORI. This is the case in a global sense, not only in the context of specific projects such as the ISP assets. However, as we have noted in section 3.2.1, the AER does not have the same duties as other regulators. As a result, its interpretation of financeability considerations is likely to differ from the interpretations of other regulators.

3.3.2. Potential regulatory responses

Below, we provide a brief overview of the types of responses regulators in other jurisdictions have considered appropriate to address identified financeability issues. It is important to note that we are not implying that these regulators would consider it appropriate to apply these responses in the case of TransGrid and ElectraNet's ISP

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[53] For example, see AER, *FINAL Decision – ActewAGL distribution determination 2015-16 to 2018-19 – Attachment 20 – Analysis of financial viability*, April 2015.

[54] AER, *Rate of Return Instrument Explanatory Statement*, December 2018.

investments. Rather, we are intending to highlight the types of tools that could potentially be applied, and then assess whether these are available to the AER in the context of the NEL and NER.

Approaches in other jurisdictions

Regulators in other jurisdictions have adopted a range of different approaches to address financeability concerns that have been identified for the businesses that they regulate.

An overview of types of approaches that we have identified are summarised in Table 3.1 below. We note that while in the past some regulators have approved NPV-positive adjustments, more recently NPV-neutral approaches have become the norm. Therefore, we have excluded NPV-positive adjustments from this overview.

An overall observation in relation to these approaches is that they require a 'company-specific' element to the assessment of the need for a financeability adjustment to revenue allowances, to guide the choice of the appropriate lever.

Table 3.1: Financeability levers - examples from other jurisdictions

Approach	Description	Examples
1. Adjustments to notional gearing, and other allowed rate of return parameters	This option involves varying cost of capital parameters, including the assumed notional gearing. For example, this might include consideration of whether there is a case for adjustments to the cost of debt for specific types of companies. This would typically rely on an assessment that such an adjustment would appropriately reflect the costs of an efficient company. Changes may also be made over time to the assumptions that underpin the allowed cost of capital, to reflect changes in the way that an assumed efficient company would finance its activities.	In past determinations, Ofgem has adopted different cost of capital parameters for companies with large forward investment programs (see Text Box 4 in section 3.2.1). Over time, Ofwat and Ofgem have adjusted their approach to the allowed cost of debt to reflect the use of index-linked finance. In Ofwat's case, this has evolved to an assumption of 33% index-linked debt in the most recent PR19 review. In the RIIO-2 draft determinations, Ofgem has adopted an assumption of 25%.
2. Reprofiled allowances (NPV neutral)	There are a variety of specific adjustments that could be captured under this broad category, including accelerated depreciation or other reprofiling of allowed revenues.	To offset potential liquidity pressure, in the most recent PR19 review, Ofwat has focused on offering companies two levers to improve financeability within the regulatory period: • Pay As You Go (PAYG) ratio – alters the proportion of totex remunerated through revenue, rather than recovered over time through the return of and on capital. • RAB run-off rates – which represents the annual depreciation amount of the regulated assets. Both approaches reflect altered regulatory assumptions to bring revenues forward.
3. Removing indexation from the RAB	This is (one element of) the approach proposed by the rule change proponents.	As TransGrid note, the New Zealand Commerce Commission (NZCC) applied an unindexed RAB approach for Transpower as part of the 2010 IM review. The NZCC revisited this approach in the 2016 IM, and decided that although there are downsides

	to the arrangement it would be appropriate to maintain the approach. We have not, however, identified other recent decisions by regulators to move from an indexed to un-indexed RAB approach.

Could the AER adopt these approaches?

Our assessment of the scope for the AER to adopt the approaches outlined above under the current regulatory framework is summarised in Table 3.2 below.

Table 3.2: Financeability levers – scope for adoption by the AER

Approach	Our assessment
1. Adjustments to notional gearing, and other allowed rate of return parameters	Through the rate of return review process, the AER is able to adjust the gearing and other cost of capital parameters for the benchmark efficient entity, if it considers this to be appropriate based on the evidence before it. It is also able to set different parameters for gas and electricity networks. However, it is not clear that under the NEL, the AER would have the ability to apply different cost of capital parameters to particular network businesses, to the extent that they considered these would better reflect the efficient cost of capital for a service provider with non-standard circumstances. In particular, we note the following provisions:[55] *"(1) If a rate of return instrument states the value of imputation credits, the instrument must state a single value to apply in relation to all regulated network service providers.* *(2) If a rate of return instrument states a way to calculate the rate of return on capital or the value of imputation credits, the instrument must—* *(a) provide for the same methodology to apply in relation to all regulated network service providers in calculating the rate or value; and* *(b) provide for the methodology to apply automatically without the exercise of any discretion by the AER.* *Example for paragraph (b)—* *The instrument can not include different methodologies or a band of values from which the AER could choose in applying the instrument."* Accordingly, the scope to address a company specific financeability concern through these types of approaches may be limited.
2. Reprofiled allowances (NPV neutral)	Under the provisions of the NER that guide the AER's determination of depreciation allowances, there is some flexibility to adjust the depreciation profile.

[55] NEL, Part 18J—Content of rate of return instrument.

	However, unlike the provisions of the National Gas Rules (NGR), we note that there is no specific guidance that the AER should consider the cash flow requirements of the business in making its determination.[56] Further, the AER's decision must also be consistent with other criteria set out in the NER. For example, NER 6.5.5 (b)(1) requires that depreciation 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"*. Accordingly, the scope to address a company specific financeability concern through these types of approaches would appear to be relatively limited.
3. Removing indexation from the RAB	The NER place clear boundaries around the current indexed RAB approach. [57] Accordingly, our assessment is that a rule change would be required to implement this option.

Assessment

Our overall assessment is that the AER is not prevented from considering financeability in its determinations under the current regulatory framework, although it has no specific duty to do so.

However, the AER appears to have relatively limited flexibility to apply the types of levers that regulators in other jurisdictions have adopted, should it determine that there *is* an issue that requires attention. This reflects a mixture of requirements in the NER (such as those guiding the approach to setting depreciation allowances), but also in legislation (in particular requirements in relation to setting a single RORI). This suggests that there is limited scope for the AER to make company specific adjustments.

Accordingly, while we are of the view that it is not unreasonable for a TNSP to adopt gearing below the notional level, or explore alternative finance options, we note that this limited flexibility could pose some barriers to the TNSPs taking these actions. For example, we note that as a result of the requirement to set a single rate of return instrument:

- If a TNSP is required to adopt gearing below the notional level in a period of rapid RAB growth, the AER may not be able to recognise the additional equity issuance costs that would be associated with this.
- The AER may not be able to consider whether benchmark efficient debt costs should be different for a company with a substantially different investment profile, for example, if it were efficient for such a company to fund a portion of its investment through index-linked debt.
- The AER may not be able to consider whether adjustments to other cost of capital parameters could be appropriate.

Accordingly, it is possible that the current rate of return arrangements could prevent the AER from fully recognising instances were efficient financing costs might be different from the current view of a benchmark efficient entity. While we note that the rate of return framework sits outside the AEMC's scope for a rule change, we suggest that further exploration of these issues may be appropriate.

3.4. Approaches outside the existing regulatory framework

We note that the rule change proponents do not appear to have fully considered broader changes to the current regulatory framework that could potentially be adopted to address any actual or perceived inability of service providers to make investments that are in the interest of consumers.

[56] See NGR, 89(1)(e), which requires that depreciation schedules should be designed *"so as to allow for the service provider's reasonable needs for cash flow to meet financing, non-capital and other costs"*.

[57] In particular, NER 6.5.1.

3.4.1. Targeted financeability adjustments

Our first alternative regulatory approach to meet actual or perceived financeability issues, like the TNSP proposals, would involve adjusting the time profile of revenue allowances. However, rather than applying a new regulatory framework to a particular class of investments, TNSPs would be granted additional revenues for a limited period, offset by lower revenues for a subsequent period. The amount and time period of these additional revenues and the period of the refund would be set to be the smallest deviation from base revenues necessary to overcome any financeability issues. The adjustment would be set to be NPV neutral.

Our proposed process for such an adjustment would be that when a TNSP identifies that it has an actual or a perceived financeability issue, it would make a submission to the AER setting out:

- the evidence that without an adjustment that there would be risks to financeability;
- the alternative options that it had considered (e.g. alternative financing approaches) and reasons why they were not possible or appropriate in the circumstances; and
- the amount and time period for which an advance of revenues would be required.

Following a review of the evidence submitted, If the AER determined that the application had merit, it would make an appropriate determination and make an adjustment to allowed revenues.

The advantages of such an approach compared to the TNSP proposed rule change are that:

- the size of the advance of revenues would match the need for financing, and thus the impact on consumers would be as low as possible;
- the time period for which the adjustment is required would be targeted to the needs of the company, rather than an asset depreciation schedule;
- the adjustment could be reversible in the event that conditions change (e.g. other investment are reduced, financial market conditions change, rating agencies take an alternative approach to the assessment of Australian energy networks);
- the approach would not be limited to specific ISP projects, but could apply to any investment plan which led to an identifiable financeability issue; and
- no change would be needed to the underlying regulatory framework, and there would be no need for the creation of separate regulatory accounts for different classes of asset.

It is possible that rating agencies may not fully reflect NPV neutral adjustments, such as this targeted financeability adjustment, in some of their credit metric assessments. However, if so, this would also apply to the TNSP proposed rule change, which is also an NPV neutral adjustment.

We envisage that adoption of such a mechanism should be seen as a last resort (a ‘safety valve’), but it may provide regulators and government reassurance that investment plans can be financed, while protecting the interests of customers.

3.4.2. Contestable service provision

A second example of an alternative approach, adopted in other jurisdictions, is the implementation of contestable delivery of large investments. Experience with this approach in the UK energy and water sectors has identified a range of benefits, which include:

- Investors’ actual required return on equity being revealed through competition, rather than estimated through a regulatory determination (Text Box 7).

- The potential to attract financing from different classes of investors, where the current investors in a regulated network may be unwilling to contemplate the investments in question, or alternatively where the incumbent company could not support the increase in risk associated with delivery of the project (Text Box 8).

It is important to note that the design and implementation of contestable approaches is a relatively complex change to the current framework, and it would be challenging to implement in the near term. It is also important to highlight that the examples summarised below have provided for a different allocation of risk, compared to the current framework for electricity networks. For example:

- Under the Offshore Transmission Owner (OFTO) model, OFTOs (to date) have only ever taken on commissioned transmission assets built by wind farm developers (known as the 'Generator Build' model).
- The Thames Tideway Tunnel arrangements included a set of government support arrangements which likely contributed to the lower than expected financing costs.

This particular risk allocation arrangements may not necessarily be appropriate for the NEM (although we note that these are not the only approaches that could be envisaged). However, clearly, there would be trade-offs associated with adopting alternative arrangements to fund future ISP projects, that would need to be carefully thought through and weighted against the counterfactual of development by the incumbent TNSP. Interfaces with the existing electricity networks is another area that would require careful consideration.

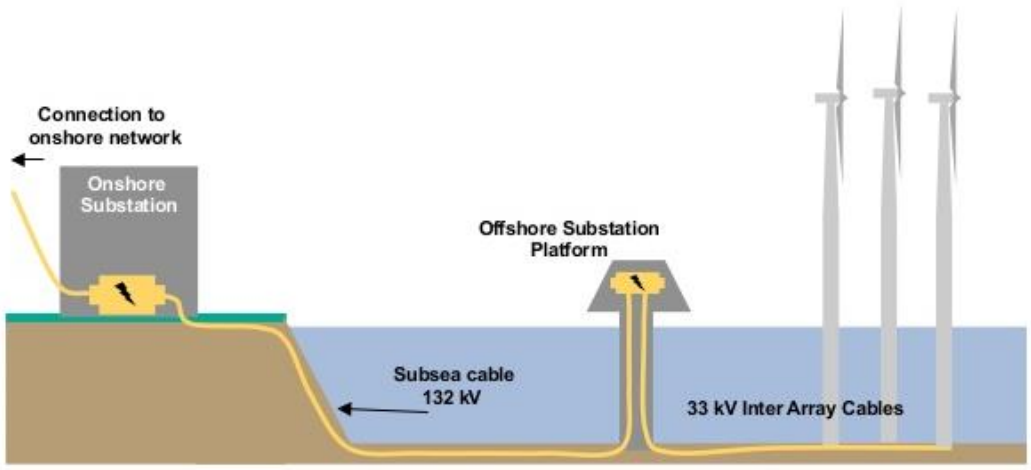
However, given the scale and cost of the ISP programme, and the benefits identified in the case studies highlighted below, we believe that the scope for the rules framework to facilitate alternative financing arrangements merits careful assessment. The potential for third party investment in transmission infrastructure is already a feature of transmission in Victoria and for connection assets.

Text Box 7: UK experience with contestable provision of offshore electricity network assets[58]

The EU's third energy package of legislation mandated the unbundling of energy supply and generation from the operation of transmission networks. In response to this, the UK Government and Ofgem developed the Offshore Transmission Owner (OFTO) framework to apply to transmission network assets connecting offshore wind farms to the onshore network.

The OFTO regime involves competitive tenders to appoint a party to be responsible for operating these assets (see Figure 3.7). The OFTO is entitled to a stable, 20-year, inflation-linked revenue stream (the Tender Revenue Stream (TRS)) in return for operating, maintaining and decommissioning the assets. Our understanding is that OFTOs have primarily dealt with the potential mismatch between nominal debt and an indexed revenue stream by entering into inflation swaps. OFTOs are exposed to commercial risks and face efficiency incentives, primarily through an availability incentive.

Figure 3.6: Illustration of offshore transmission assets



The OFTO's 20-year TRS reflects the costs of acquiring, operating and maintaining the assets. This includes O&M costs, insurance costs, special purpose vehicle (SPV) management costs, decommissioning costs, taxes and financing costs related to the acquisition of the assets from the offshore generation developer. The TRS is paid to the OFTO by the Transmission Operator which then recovers the amounts from generators and suppliers through Transmission Network Use of System Charges (TNUoS).

CEPA was engaged by Ofgem assess the benefits that may have been achieved from the introduction of the OFTO framework. We compared the framework against two alternatives:

1. A regime of licensed merchant generation based on the regulation of oil and gas developments in the UK.
2. Alternative price control-based approaches representing different ways in which the on-shore regulatory regime could have been extended offshore.

We found that across the first three OFTO tender rounds the savings as a percentage of the OFTO tender revenue streams were in the range 19-23% relative to the regulated counterfactuals and 22-31% compared to the merchant alternatives.

The specific sources of savings differ depending on the counterfactual chosen. However, contestability is the overarching driver of benefit. Our analysis suggested that the contestability of the OFTO regime had driven down operating costs and the cost of equity, whilst facilitating a pass-through of historically low debt costs, to a greater extent than under any of the counterfactual scenarios.

The experience of applying the OFTO regime to offshore networks helps to demonstrate the types of circumstances which are likely to derive the greatest benefits from a contestable approach. Chief among these is the presence of large, new and separable assets that can offer opportunities for competition "for the market". We also consider that the following factors contribute to the success of the OFTO regime: the well-defined structure of the OFTO role and revenue stream, transparent tender process and grouping of OFTO opportunities in tender rounds.

Text Box 8: Thames Tideway

The Thames Tideway Tunnel (TTT) is a technical solution to developing London's sewerage system to comply with European standards under the Urban Waste Water Treatment Directive concerning sewerage being released into the Thames.

The project was initially to be delivered by Thames Water as part of its capex programme. However, due to the scale of the project relative to the company's regulatory asset base (RAB) and the financial risks associated with this, Thames Water was able to negotiate that a large amount of the work be delivered by a separate company or Infrastructure Provider (IP).

In 2015, following a competitive IP appointment process, Bazalgette Tunnel Limited, a consortium comprising Dalmore Capital, Allianz Capital Partners, Amber Infrastructure, International Public Partnerships (INPP), DIF and Swiss Life Asset Managers, was formally awarded the license by sector regulator Ofwat for the TTT project. At the time of license award, the project's financial structure reflected a gearing ratio of 40%. Moody's has noted that the project's credit quality benefitted from the front-loaded equity contribution of the consortium.[59]

A key feature of the tender process was a requirement for bidders to submit the cost of capital (termed the 'BWACC') that they required to be applied to calculate the IP's allowed revenues during the construction period of the project. Upon commencing operations, the IP became subject to a price control process administered by Ofwat. Although there are some unique features of the TTT project and its regulatory framework (see below), the project shares many common features with standard price control regimes that apply in other sectors, including that:

- allowed revenues are set using the concept of an index-linked RAB and a building block methodology;
- the IP faces a cost sharing (equity) incentive between outturn costs and target construction costs; and
- under its licence, the IP has the right to appeal regulatory decisions to the Competition and Markets Authority (CMA).

The key differences between the IP's commercial and regulatory arrangements and those of other regulated companies in the UK are:

- TTT is a single project with the risks of the construction programme ring-fenced within the IP company;
- with the BWACC fixed through the competitive appointment process, investors had a level of certainty over some elements of cash-flow for up to 15 years.
- there are elements of the commercial framework that mitigated the extent of construction risk for the IP and its investors, including a bespoke support package developed by the UK Government. Among other elements, this included a contingent equity support agreement. Although the project faced an obligation to raise sufficient finance to complete the project, under this element of the package shareholders would not be obliged to provide additional finance in the event that the project's construction costs exceeded a 'Threshold Outturn'. Rather, the IP had the option to request that the UK Government provide equity finance, subject to certain conditions.
- In 2015, the government put in place the GSP, which transfers some potential project risks from customers and investors to taxpayers (paragraphs 3.15 to 3.17). By reducing potential risks to investors, the GSP was key to Bazalgette financing the project on a lower regulated return than would have been possible otherwise (2.497%). Arrangements put in place in 2015 governing how Bazalgette would earn revenues also provided greater certainty around expected costs. To date Bazalgette has arranged £1.27 billion of equity finance and £2.2 billion of debt.14 The lower than expected cost of finance has helped to reduce the expected impact of Tunnel costs on household bills – in 2011 the Department announced an estimated annual impact on bills at between £70 and £80.1

Although the project is not expected to be completed until 2025[60], a 2017 review of the TTT project by the UK National Audit Office noted that "the lower than expected cost of finance has helped to reduce the expected impact of Tunnel costs on household bills".[61]

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[58] CEPA, *Evaluation of OFTO Tender Round 2 and 3 Benefits*, March 2016.

[59] Moody's, *Balzagette Tunnel Limited: Update following cost increases and negative outlook*, 3 November 2020.

[60] Moody's, *Balzagette Tunnel Limited: Update following cost increases and negative outlook*, 3 November 2020.

[61] https://www.nao.org.uk/wp-content/uploads/2017/03/Review-of-the-Thames-Tideway-Tunnel.pdf, paragraph 33.

3.5. CONCLUSIONS ON ALTERNATIVES

Our analysis in this section indicates that there are approaches to financing that may resolve the issues raised by TNSPs. To the extent that there are barriers to this, there might be scope to address the issues through less significant changes to the rules or the way that they are applied.

We have identified a range of approaches to deal with financeability concerns in other jurisdictions. However, the options available to AER to respond appear to be relatively limited, and in particular their scope to respond to company rather than industry specific issues is constrained.

Finally, if financeability concerns cannot be addressed by the AER, and are not addressed by the incumbent TNSP, there are options to fund investment by parties other than the incumbent TNSP.

4. IMPACT OF THE RULE CHANGE

In this section, we consider the impact of the proposed rule change on customers, the TNSPs, and their investors.

4.1. SUBSTANTIAL CHANGE IN THE REGULATORY FRAMEWORK

Regulation of transmission in Australia shifted from state regulators to the ACCC in 1998 with the commencement of the NEM, transferring to the AER in 2005, and the detailed approach to regulating prices for energy networks has evolved considerably since then. For example, the National Electricity Rules originally had a principle that arrangements should "promote competition in the provision of transmission services and distribution services wherever practical", an objective that has subsequently been removed.[62] The framework has evolved to include approaches to assessing and comparing operating and capital costs, and assessing performance. Established approaches to determining the appropriate allowed return on capital have also been developed.

But at the same time that details have evolved, underlying principles have stayed the same. Prices were indexed by CPI inflation from 1999 onwards, with indexation of asset base set out in AEMC rules from 2006 on.[63] The approach to the building blocks method of setting revenues, while not static, has become well established and understood by companies, investors, and consumers and their representatives.

While the proposed rule change would only apply to a small part of the asset base regulated by the AER, if the reasoning for it is accepted, an increasing proportion of regulated RAB would become subject to nominal rather than real returns with a range of effects on the regulatory framework.

4.1.1. Increases proportion of RAB that is unindexed

This rule change proposal is only requested to apply for a narrow set of projects, with specific characteristics, as defined by the ISP process. However, if the proposal is passed we anticipate that it would lead progressively to a substantially altered regulatory framework, with a number of foreseeable indirect consequences.

First, the characteristic of the actionable ISP projects that the TNSPs argue require a rule change are simply large projects of a scale that is at least a significant proportion of TNSP itself. With the rapidly changing energy market system, actionable ISP projects are likely to represent a significant proportion of overall TNSP investment. If the rule change occurs, a significant part of the TNSP RAB would be represented by such assets, for example TransGrid has identified $9-10bn of projects compared to assets at the start of its price control of $6.4bn.[64]

Second, there are other potential projects that will emerge for TNSPs and DNSPs that may also be very significant compared to the size of the regulatory asset value of a company. These could, for example, be to connect different types of new electricity generation, or a large investment programme will be needed accommodate EVs. Maintenance and/or replacement assets may also be large. This give the potential for such new investments, like the ISP investments to lead to reduced credit metrics for network companies if assumed to be financed at the notional gearing of the benchmark efficient entity (BEE). If this rule change is approved, we see that the same justification may apply to other network investments even if they are not directly related to the ISP.

We therefore see it highly likely that if this proposed rule change is approved, over time, a substantial part of the asset base will be assets the value of which is not linked to inflation, and for which the nominal rate of return applies directly. While the rule change is a proposal for a limited set of assets, it would be prudent for the consequences to be considered if it were to apply to a much larger proportion of assets.

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[62] *National Electricity Rules*, Version 1, clause 6.1.1 page 428.

[63] AER 2020 *Draft position. Regulatory Treatment of Inflation.*

[64] TransGrid, *National Electricity Rules change proposal – 30 September 2020*.

4.1.2. Regulatory complexity

Under the proposed approach, for each TNSP two sets of regulatory models would need to be maintained, for the purpose of the establishing regulated revenues under different principles. The overall asset base for a service provide would comprise these two RABs, constructed with different methods, different regulatory depreciation and indexation, and different treatments of inflation. A number of issues arise including:

- Should notional gearing be the same for a RAB which is treated as nominal rather than real?
- Would assets with a nominal RAB receive the same cost of debt?
- Should full regulatory accounts be maintained for the separate assets, or just asset values?
- What costs would be capitalised in the nominal RAB?

It is obviously not impossible conceptually for separate RABs to be applied for different assets within the same company. However, in practice many issues will need to be considered twice under each system, leading to an enhanced regulatory burden.

4.1.3. Incentives

We consider three types of incentive on network operators:

- The relative incentive to invest in capex rather than opex.
- The incentive to replace assets early.
- Incentives related to timely project completion.

Previous work that CEPA has undertaken for AEMC has looked at the opex / capex bias. We found that incentives were not consistently biased one way or the other. Our examination suggests that the schemes to equalise incentives between opex and capex (e.g. the CESS) will continue to provide appropriate incentives.

The RAB value of these assets will depreciate faster under the proposal than under the current regime. That means that late on in an asset's useful life there will be less incentive to maintain it and try to extend its use because a smaller residual asset will be written off.

Under the proposal, depreciation will be recovered ahead of the commissioning of assets. This means that revenues will be increased before customers receive the benefit associated with the asset investment. We consider that this may weaken the incentives on TNSPs to deliver projects to schedule. However, we note that an as incurred depreciation approach is currently in place for distribution assets.

4.1.4. Inflation risk

One of the most significant aspects of the proposed rule change would be the change to the allocation of inflation risk.

Under the current arrangements, the AER sets the nominal rate of return through the RORI. It makes a determination of expected inflation, which is deducted from the nominal allowed revenues calculated in the PTRM (the model the AER uses to determine expected revenues at the start of the price control) to deliver, overall, a real

return on capital.[65] During the regulatory period, in the annual pricing process, revenues are adjusted to reflect actual inflation. This ensures that the regulatory framework delivers a real rate of return equal to the 'target' real rate of return expected at the start of the price control, including when actual inflation differs from expected inflation.[66] In the RFM, as part of the process of rolling the RAB forward into the next price control, the RAB is also indexed by actual inflation. Therefore, under the current system, networks effectively receive indexation of revenues both within a price control period and across price controls.

There is an ongoing consultation process on the way in which the AER treats inflation,[67] and we do not comment on the issues raised in that process. However, what is clear is that the proposed rule change would alter the allocation of inflation risk. Under the proposed rule change, the RAB associated with ISP projects would not be indexed. This means that the networks would no longer have a natural hedge against inflation for the relevant assets, and nor would customers benefit from this. With actual inflation lower than expected, TNSPs (and their investors) would benefit from a real return on capital higher than the target set at the start of the price control; with actual inflation higher than expected, they would receive real returns lower than the target. The impact on customer bills would be in the opposite direction to the TNSPs' returns.

It follows that investors would be better off under an unindexed RAB approach if they considered that inflation was going to be over-forecast, and vice versa would prefer the current approach targeting the real rate of return if they considered that inflation was going to be under-forecast.

Deviations from the target real return would be symmetric – i.e., a -1% and a +1% difference between expected and actual inflation would have the same impact, with opposite sign. While the overall impact on risk would be limited because the nominal WACC approach would only apply to a proportion of assets, there is scope for this to increase.

Changes in inflation risk were recognised by the New Zealand Commerce Commission in its decision to move to an unindexed RAB approach for Transpower, and its subsequent re-confirmation of this approach in 2016, although it ultimately concluded that this was acceptable in the New Zealand context.

Text Box 9: NZCC determination for Transpower

In its 2010 Input Methodology (IM) decision, the New Zealand Commerce Commission decided not to apply indexation to Transpower's RAB. The Commission assessed this provision again in its 2016 IM review.

During the 2016 review the Commission noted that:

"Our lack of indexation of Transpower's RAB means that capital recovery is front-loaded relative to an indexed approach (as applied to the EDBs). We considered this was appropriate in 2010 given their relatively large investment programme, since an un-indexed approach would likely lead to higher revenues in the near-term that better matched their investment needs. We signalled that we would re-consider the arrangement in the future once their major investment tranche came to an end."[68]

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[65] In practice the AER achieves this outcome through the application of a nominal rate of return to an inflation-indexed RAB. A deduction is then made to the regulatory depreciation allowance, to remove the expected level of inflation that is reflected in the nominal rate of return. This adjustment is to avoid double counting the allowance for inflation. This results in the same outcome as a real rate of return applied to an indexed RAB.

[66] In practice, the delivery of the target real rate of return is not exact, due to practical limitations on when inflation outcomes are known. However, these deviations are minor and symmetrical. See AER (2017), *Regulatory Treatment of Inflation*, p. 66.

[67] AER 2020, *Draft position - Regulatory treatment of inflation*, October.

[68] NZCC, *2016 Input Methodologies Review Decisions – Topic Paper 1 – Form of Control and RAB Indexation for EDBs, GPBs and Transpower*, December 2016, paragraph 307.

In particular, the Commission considered whether it would be appropriate to either apply indexation, or potentially make another adjustment to the revenue determination, due to the inflation risk associated with an unindexed RAB approach:

"Our existing (un-indexed) approach for Transpower delivers ex-post nominal returns, which exposes both consumers and Transpower to the risk that out-turn inflation differs from the inflation expectation inherent in the nominal WACC used."[69]

Ultimately, the Commission *"consider[ed] that the increased compliance and complexity that would be required to change the approach for Transpower do not justify the benefits in terms of protection from inflation risk."*[70] Further, an alternative approach to addressing inflation risk was not pursued on the basis that it *"would be an additional complication that is unlikely to result in significant benefits to suppliers or consumers in the current low inflation environment."* [71]

4.1.5. Asset stranding risk and incentives for efficient investment

We do not consider that this proposal impacts materially upon asset stranding risk. From the point of view of the company a stranded asset is an investment which is no longer able to meet a viable economic return. The AER previously considered the issue of asset stranding with regards to accelerated depreciation.[72] The AER concluded that "*under the current regulatory regime the service providers are not subject to stranding risk. This means accelerated depreciation has no justification in terms of assisting a service provider to recover its asset costs before a customer leaves the network, as these costs can be recovered from the remaining customers."*

We see no reason to disagree with the AER's previous assessment.

A wider issue is whether the incentives to avoid undertaking inefficient or imprudent capex remain unchanged. The current regulatory framework has several mechanisms that aim to prevent inefficient or imprudent capex:[73]

- The overall incentive-based regulation approach means that the company is able to retain a portion of the benefits from spending less than its capex allowance. Customers in turn benefit when at the end of the regulatory control period the RAB is updated for actual capex which is lower if the company made savings. The overall framework is unaffected by the proposal.
- The AER also operates the Capital Expenditure Sharing Scheme (CESS) which shares efficiency gains and losses between networks and customers no matter the year in which they occur. We do not consider that the operation of the CESS is substantially affected by the proposal.
- The AER maintains ex post review measures for capex. This allows the AER to exclude certain types of capex from being included in the roll forward of the RAB. The risk of ex post review creates a disincentive to undertake inefficient or imprudent capex. We do not consider that this proposal changes the strength of this disincentive.

4.2. INTERACTION WITH REGULATORY FRAMEWORK

The table below presents our summary assessment of potential impacts of the rule change proposal on the current regulatory framework. Overall, we consider that the most substantial issues may relate to consideration of whether a differential cost of capital would need to apply to the separate ISP RAB.

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[69] Ibid., paragraph 308.

[70] Ibid., paragraph 316.

[71] Ibid., paragraph 319.

[72] AER (2017), *AusNet Services 2017-22 (Attachment 5 – Regulatory Depreciation)*.

[73] AER (2013), *Capital Expenditure Incentive Guideline for Electricity Network Providers*.

Table 4.1: Interactions with the existing regulatory framework

Building block	Potential impact
Capex	This proposal does not affect the amount of capital expenditure approved by the AER, merely its treatment after it has been incurred.
Return on capital	The AER currently estimates WACC on a nominal basis. The proposal uses a nominal basis for the RAB with no indexation. The nominal WACC basis continues to be appropriate under the proposal. However, as the proposal changes the treatment of inflation this may impact upon inflation risk experienced by the company. The AER explains that despite the current framework effectively setting a real rate of return combined with an indexed asset base inflation-related risks may still be present.[74] Two potential inflation-related risks highlighted by the AER include the first year pricing effect and inflation lags and the effect of fixed nominal debt issuance on equity holders' returns.[75] If the proposal changes the systematic inflation risk, then this will impact upon the beta component. The AER states that the "*equity beta [is] calculated…on equity returns of Australian energy utility firms [the AER] consider reasonably comparable to the BEE*". The *"current inflation approach has applied to these firms across the relevant time period [and] if inflation risk arising from [the AER's] regulatory treatment of inflation meant that networks faced increased (or decreased) systematic risk, then the calculated betas in the CAPM would be higher (or lower) than otherwise."* This argument may no longer hold if the regulatory treatment of inflation changes. Likewise, there may be an impact on the return on debt. The AER states that "*the BEE's credit rating [is] based on the networks' observed credit ratings*". The AER observes that if inflation risk did change the networks' probability of defaulting on debt then the AER would expect it to be captured in the networks' credit ratings. This suggests that a change to the inflation risk associated with a regulatory change would potentially require further consideration in relation to impacts on the return on debt.
Regulatory depreciation	Under the current rules an inflation offset is included in the depreciation allowance to prevent double compensation for inflation. This inflation offset will not apply to assets associated with ISP projects. This will require two depreciation calculations in the AER's regulatory models, or potentially separate models. In addition, the proposal requests that depreciation be calculated on an 'as incurred' basis rather than on an 'as commissioned' basis. This again means that there needs to be two depreciation calculations undertaken by the AER.
Opex and efficiency sharing scheme (EBSS)	We do not consider that this proposal has an impact on the calculation of the opex allowance. Likewise, we do not consider this proposal impacts upon the operation of the EBSS.

[74] AER (2017), *Regulatory Treatment of Inflation*.

[75] AER (2017), *Regulatory Treatment of Inflation*, section 6.2.2 and section 6.3.3.

Building block	Potential impact
Incentive mechanisms (DMIS, CSIS, STPIS)	We do not consider that this proposal has an impact on the operation of these incentive schemes.
Capital expenditure sharing scheme (CESS)	We do not anticipate that this proposal will substantially impact upon the operation of the CESS, although some minor changes could potentially be required to calculate incentive payments under the scheme.
Tax	We have not identified substantial issues relating to the determination of the tax allowance if the proposed rule change were introduced.

4.3. CONSUMERS

4.3.1. Higher prices in the near term

The proposal would lead to a larger increase in prices than the current method, with lower prices later in the life of an asset. Assessed using the WACC used for determining prices, our modelling indicates that the proposal is close to NPV neutral, with the difference being attributable to the impact tax allowance. We have identified that this is because the tax allowance depends on revenue and tax expenses. Tax expenses include interest payments, which are not NPV neutral. In the allowed revenue calculation, this effect is offset by differences in regulatory depreciation, so that revenue is, overall, NPV neutral. This is not the case for tax expenses, as these include tax depreciation, which is unaffected by the rule change. Our analysis indicates that the following order of magnitude effect of this NPV difference:

- For TransGrid, the difference between the rule change and the status quo over the entire modelled period, including all ISP projects, is approximately $200m in NPV terms, compared to a total revenue allowance of approximately $28b.
- For ElectraNet, the difference between rule change and status quo over the entire modelled period, including all ISP projects, is approximately $23m in NPV terms, compared to a total revenue allowance of approximately $8.5b.

NPV neutrality is an important concept in regulatory finance as it ensures that changes to revenue profiles and related cash flows preserve rights of a company, and are neutral to investors. However, NPV neutrality is not the same as neutrality from a customer perspective. For example, as part of the New Reg process, the Customer Forum expressed views about a proposal from AusNet Services to introduce accelerated depreciation for a portion of its transmission assets.[76]

NPV neutrality was discussed in some detail by the AER in a determination on transmission revenues for AusNet Services[77]. It noted that "*NPV neutrality is an important principle but it is also a directionless one as almost a limitless number of NPV neutral depreciation profiles could be developed…NPV neutrality is not equivalent to efficiency. It is adopted as a standard to make sure a business is kept whole…if recovery of funds were deferred by a hundred years in a NPV neutral way, this deferral would likely send the business bankrupt. Similarly, if customers were asked to pay all investment immediately (again consistent with NPV neutrality) those customers could go bankrupt or simply stop consuming. Neither outcome would be efficient.*"

[76] Farrier Swire, 2020. *New Reg AusNet Services Trial, 8 April 2020*. https://www.aer.gov.au/system/files/Farrierswier%20-%20AusNet%20Trial%20Monitoring%20Report%20-%20Stage%203%20-%202020.pdf

[77] AER 2016. *Draft decision. Ausnet Services transmission determination 2017-18 to 2021-22. Attachment 6 – Regulatory depreciation.*

Our modelling has shown that customer prices near term would rise, and the evidence from customer fora is that they do not see that this is in their interests. We estimate that, between 2020 and 2035 the price impact of Project EnergyConnect alone on TransGrid's and ElectraNet's customers would be on average 0.05 cents/kWh (real 2018$) higher under the proposed rule change compared to the status quo, with peaks of over 0.1 cents/kWh around project completion. The price impact of the rule change becomes larger if additional ISP projects are considered. We provide additional details on this price impact calculation in Appendix C.

4.3.2. Efficient pricing / intergenerational effects

One approach to designing an efficient profile of prices for monopoly infrastructure is to align the revenue profile with that of the benefits. ElectraNet has suggested that this alignment is demonstrated by the rule change, with a chart of the nominal revenue associated with investment, associated with a separate chart of the discounted summary benefits.[78] However, this appears to compare a nominal revenue with discounted benefits. If (undiscounted) nominal revenues are compared to the undiscounted benefits, the alignment is much closer between the revenues under the current approach rather than the proposed rule change.

There has been academic literature on the optimal depreciation paths for determining the revenue of regulated services which has been considered by the AER[79]. The literature they examined found that technological change leading to competition emerging for the monopoly service may require front-loading of depreciation; that if demand and costs are constant, the literature indicates that either constant real output prices or the back end loading of depreciation is optimal.

The evidence suggests that the proposal may not result in an efficient profile of prices.

4.3.3. Revenue smoothing

When a regulated utility invests and its asset base increases, it is normal for allowed revenues to increase. When returns are based on nominal returns on nominal assets, there is a large increase in the allowed revenues and accordingly customer prices also increase. There is still an increase in revenues and prices when assets subject to inflation indexation are replaced, but it is less sharp, or as the AER states[80]: "*Indexation of the RAB leads to smoother revenue and prices. It also significantly reduces the increase in revenues that invariably happens when assets are replaced at the end of their useful life*.

While we have not quantified the volatility of revenues that would result from a widespread move to nominal RAB, it would be a likely consequence of its adoption.

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[78] AEMC. *Public forum on financeability of ISP projects rule change requests.* https://www.aemc.gov.au/sites/default/files/2020-11/AEMC%20public%20forum%20-%20Financeability%20of%20ISP%20projects%20-%2026%20November%202020.pdf

[79] AER 2016. *Draft decision. Ausnet Services transmission determination 2017-18 to 2021-22. Attachment 6 – Regulatory depreciation.*

[80] AER. *Why do we index the regulatory asset base?.* https://www.aer.gov.au/system/files/Fact%20sheet%20-%20Indexation%20of%20the%20regulatory%20asset%20base.pdf

4.4. INVESTORS

4.4.1. Improvement in short term revenues vs longer term growth

As has been described above, the switch to the use of a nominal return rather than a real one, and ending indexation of the asset base by inflation would increase revenues in the early years of the asset life, and lower them in the later years. Our modelling confirms that the approach proposed is net present value-neutral, using the AER WACC as the discount rate.

In theory, therefore, an investor should be neutral between the proposal and the status quo. However, in practice, there are two offsetting factors:

- the opportunity earlier cash flows to allow companies to improve credit metrics which may lead to a reduction of the cost of debt.
- investors may have a preference RAB growth, which points to the use of the indexed RAB of the current approach rather than unindexed RAB proposed. This issue was investigated by CEPA in previous work for the AEMC.[81] The work reported included analysis of a selection of analyst reports, and concluded that RAB growth "is a *generally* desirable outcome in investors' consideration of regulated businesses.".

4.4.2. Investor demand for inflation-linked revenues

Since the foundation of the NEM, there has been significant growth in investor interest in global infrastructure assets including energy networks. Demand from investors for "core infrastructure" has been strong. The evidence from the actions and statements made by such investors indicates a significant appetite for assets like transmission networks with stable revenues which also offer inflation protection.

Two quotes from investors in Australian energy network assets illustrate this:

> IFM: *"Core infrastructure in developed markets offers portfolio diversification along with stable cash yields and protection from inflation. As such, we target investments with reliable revenue streams that have a link to inflation and/or participate in economic growth, and focus on countries with established regulatory environments and strong rule-of-law.*[82]
>
> Spark infrastructure: *"The regulatory regime remains incentive based with a range of opportunities for out-performance and various in-built protections.* ***Importantly, it provides inflation protection of revenues and the Regulated Asset Base*** *and pass-throughs for operating and capital costs. [emphasis added]* [83]

The evidence suggests that an important reason why investors have been attracted to Australian energy network infrastructure because of the inflation protection that it offers. There are relatively few opportunities to invest in such assets. It is not the only reason, but removing or weakening the inflation linkage risks may weaken investment incentives from onshore and offshore investors, whether in debt or equity.

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[81] CEPA 2018. *Expenditure incentives faced by network service providers*. Report for the AEMC.

[82] IFM investors website. https://www.ifminvestors.com/investment-capabilities/infrastructure.

[83] Spark Infrastructure. 2016. The Australian infrastructure network specialists shareholder review. Page 3. https://sparkinfrastructure.com/sites/sparkinfrastructure.com/files/documents/16270_spark-shr16.pdf

5. OVERALL ASSESSMENT

In this section, we provide an overall assessment of the rule change proposals against the NEO.

We have structured our overall assessment of the rule change proposal around the evaluation framework set out in the AEMC's Consultation Paper. In particular, drawing on our analysis in preceding sections, we consider the extent to which the proposed rule changes advance the NEO, in relation to:

- Impact on the economic regulatory framework model.
- Impact on consumers.
- Impact on efficient investment, in the context of the revenue and pricing principles set out in section 7A of the NEL.
- Impact on risk allocation.
- Impact on the efficient operation of providing electricity services.

Impact on the economic regulatory framework model

Under this element of its assessment framework, the AEMC has proposed to consider whether ISP projects should be treated differently from other projects, what the capital market impacts are of applying a different regulatory framework to some transmission assets in selected NEM regions, what the temporal impacts are given the trailing average cost of debt arrangements and whether a change to an unindexed RAB is in the long-term financial interests of consumers.

In relation to these issues:

- It is a strength of the Australian regulatory framework that alternative approaches to regulation are considered and adopted if they can be shown to be in the interests of customers, and satisfy the NEL.
- We consider that the transition of some assets into a framework under which energy network assets are not indexed to inflation to be a significant departure from the established principles of regulation in Australia developed over the last twenty or more years.
- While the proposals apply to a small proportion of assets now, if the principles are adopted, we consider that there would be a progressive move away from indexation as other large investment programmes of networks would face the same issues.
- There are two distinctive features of ISP projects: they are large in the context of the asset values of the network companies; and they are separable from the other assets.
- These two characteristics mean that it may be warranted to consider whether an alternative regulatory regime may be necessary to ensure that these projects are delivered in a time, at a cost, and with a revenue profile that is better aligned to the interests of customers than the current model. An alternative regulatory regime for such investments cannot be ruled out: the issue is whether a new regulatory regime is necessary, and/or whether it has benefits to customers, or if there is possibly an alternative regulatory regime that would better meet the needs of customers.
- The proposed approach would not clearly advance the interests of customers. While it is net present value neutral to companies[84], customers have consistently expressed a preference for prices to be deferred, and it is sound economic pricing principle that the timing of benefits should be aligned with price profiles. This also better satisfies concerns of inter-generational equity.

[84] Save for the effects we have identified in relation to the tax allowance.

- The proposed approach would bring a significant increase in complexity, with the management of alternative classes of assets within the regulatory framework, and ensuring the rate of return instrument appropriately applies for both nominal and real rates of return.
- The scale of the ISP investments means that a hasty change with long term effects is unlikely to be in the long-term interest of customers.

Impact on consumers

Under this criterion, the AEMC propose to consider whether there are benefits to consumers from the proposed changes to the regulatory framework, and the potential impacts on consumers if ISP projects cannot be financed.

In relation to these issues, we note that:

- There would likely be a material impact on consumers if ISP projects could not be financed, as the evidence related to their approval processes shows that they offer a net benefit (for those projects that have gone through the required approvals).
- The rule change proponents have presented evidence that their relative shares of the PEC ISP project would not be financeable under the current regulatory framework. Our analysis indicates that for this ISP investment, their conclusion is open to question. Consideration of other factors that are considered by ratings agencies suggests that this project may be able to achieve an investment grade rating, and the benchmark level of gearing.
- We note that it would appear more challenge for a notional company, financed at the benchmark efficient gearing, to achieve a credit rating consistent with the benchmark level if it were to undertake a level of investment commensurate with the full portfolio of TransGrid or ElectraNet's potential ISP projects. However, we think it is important to balance this assessment against the following factors:
    - There is a higher level of uncertainty around the outcomes of this analysis, given the wide spread in the cost and timing projections associated with future ISP projects.
    - Experience in other jurisdictions suggests that there are a range of alternative financing options that could be considered, where incumbent regulated networks are either unwilling or unable to fund substantial investments.
- A key issue is therefore whether such alternatives could:
    - Better meet consumers' preferences and priorities, considering the near term price impacts of the proposed rule changes.
    - Harness other efficiency benefits from contestable investment approaches that have been observed in other markets.
    - Development and assessment of such alternatives is complex exercise, but in our view, it is worthwhile in the context of the scale and scope of the potential ISP program.

Impact on efficient investment

In this part of the assessment framework, the AEMC will consider whether transmission network operators are able to recover their efficient costs under the current regulatory framework, taking into account the revenue and pricing principles described in the NER.

- Our analysis indicates that the current arrangements are consistent with these principles. In particular, we consider that:
    - the revenue and pricing principles, together with the rate of return objective, do not require the AER to ensure that a TNSP can achieve a *particular investment profile* at the notional gearing and/or credit rating of a benchmark efficient entity.

- Importantly, there is no expectation that a TNSP will adopt a benchmark efficient entity's capital structure. In a period of investment and expansion, it is likely that gearing below the benchmark level might be needed to maintain the benchmark credit rating. In other periods, revenues may support the benchmark credit rating under a more highly geared structure.
- Overall, the benchmark efficient approach is structured to provide a long-term efficient return on capital (assuming correctly estimated).

- We do not consider there to be a clear argument that there will be very significant impacts on incentives for companies to make inefficient investment or encourage efficient investment.

Impact on risk allocation

This criterion considers whether any changes that the proposed rule changes may make to the allocation of risk between different parties are likely to result in efficient outcomes.

- There would be an impact on risk. The most important change would be that under the proposals, customers would bear inflation risk. Customers would be worse off in a low-inflation scenario, and better off in a higher inflation scenario. Under the current system, customers (for the purpose of electricity pricing) are indifferent to the level of inflation. In the first instance the impact on risk would only be related to identified ISP assets and therefore relatively limited, but we note that the scale of investments encompassed by the approach is likely to increase, exacerbating the risk impact.

Impact on the efficient operation of providing electricity services

Finally, the AEMC has proposed to consider whether the proposed changes to the regulatory framework may impact on incentives for ISP projects to be delivered in a timely manner.

- The proposal for assets to enter the regulatory asset base when costs are incurred rather than when they are commissioned weakens incentives on companies to deliver projects in a timely manner.
- This element of the proposal therefore has a negative effect on the efficient operation of providing electricity services.

Appendix A CREDIT RATINGS

The table below compares the credit rating scales used by S&P's and Moody's.

Table A.1: Credit rating scales

S&P's	Moody's	Grade	
AAA	Aaa	Prime	Investment grade
AA+	Aa1	High grade	
AA	Aa2		
AA-	Aa3		
A+	A1	Upper medium grade	
A	A2		
A-	A3		
BBB+	Baa1	Lower medium grade	
BBB	Baa2		
BBB-	Baa3		
BB+	Ba1	Non-investment speculative	Non-investment grade
BB	Ba2		
BB-	Ba3		
B+	B1	Highly speculative	
B	B2		
B-	B3		
CCC+	Caa1	Substantial risk	
CCC	Caa2	Extremely speculative	

Source: S&P's and Moody's

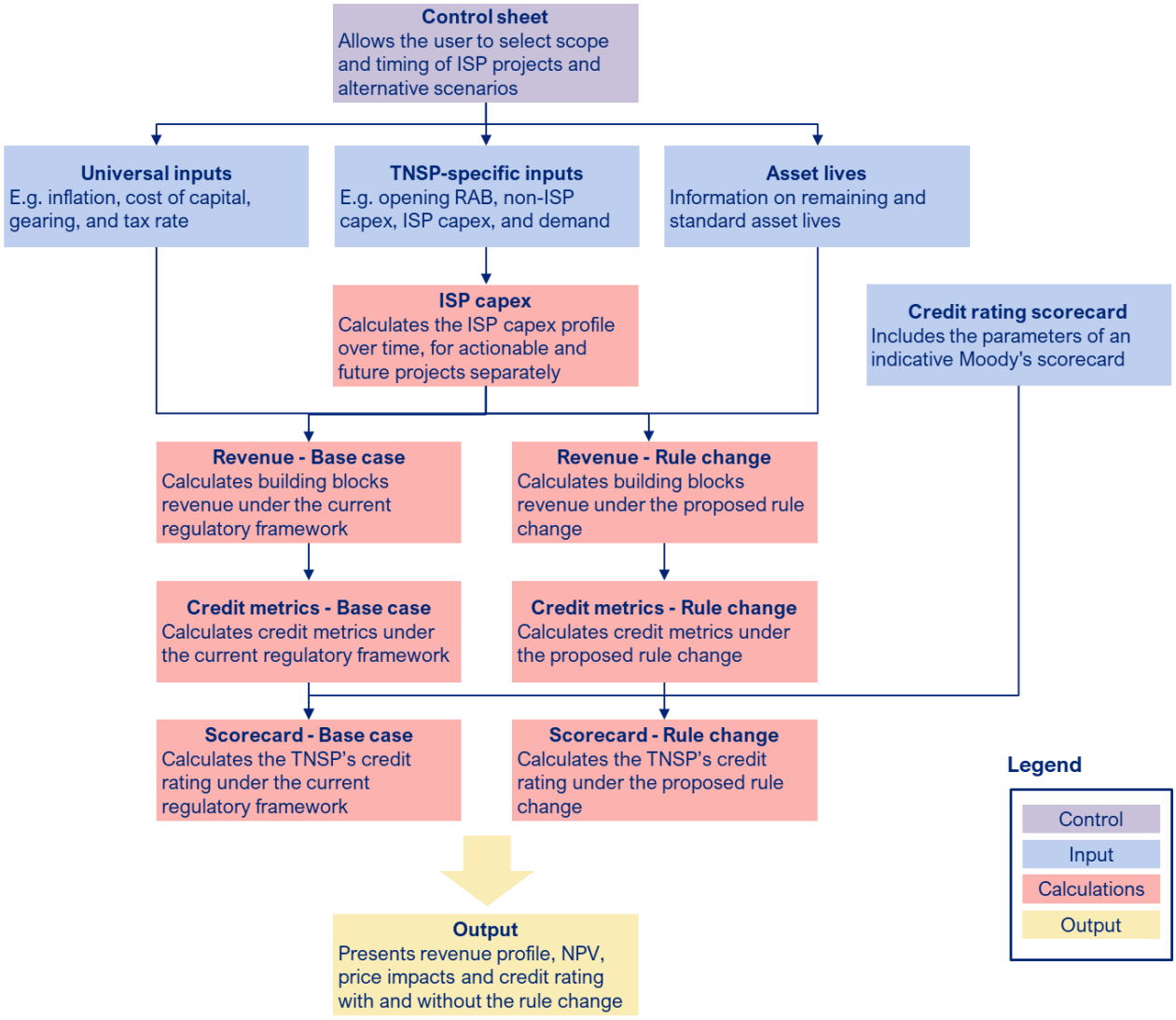
Appendix B MODELLING APPROACH AND ASSUMPTIONS

B.1. MODEL STRUCTURE

To assess the impact of the proposed rule change, we have modelled regulated revenues and credit metrics for two transmission network companies with an assumed 60% gearing (equivalent to the AER's determination for a benchmark efficient entity) and the investment profile of TransGrid and ElectraNet. The model calculates TransGrid's and ElectraNet's annual building block revenue requirement for 14 consecutive five-year regulatory periods, from FY19 to FY2088.[85]

The model then uses cash flow and debt information from the revenue calculation to produce key financial ratios which, combined with other qualitative criteria set out in an illustrative rating agency's scorecard, provide an overall credit rating for the TNSPs. Modelled revenue is also used to produce a simple forecast of price impacts in c/kWh. Figure 5.1 illustrates the model structure.

Figure 5.1: Model structure



Note: this structure is repeated for each TNSP.

[85] This allows modelling the full depreciation of ISP projects commissioned until 2038, assuming a maximum asset life of 50 years.

B.2. MODELLING REVENUE

Calculation of revenue under the current regulatory framework

In the model, the calculation of revenue under the current regulatory framework is based on the AER's inflation review simulator,[86] which replicates the key calculations of the AER's Roll-Forward Model (RFM) and Post-Tax Revenue Model (PTRM) sequentially for multiple regulatory periods.

The RFM section of the revenue calculation rolls the RAB forward by adding new capex and inflation to the RAB and subtracting regulatory depreciation. Calculations in the RFM are based on **actual inflation**. The closing RAB from the RFM feeds into the PTRM section of the calculation, which determines the TNSP's annual revenue requirement for the following five-year period based on the nominal RAB, after adding new capex and subtracting depreciation, using **expected inflation**. This feature allows for a relaxation of the assumption, used in TransGrid's model, that actual and expected inflation always coincide.

The model calculates return on capital and regulatory depreciation separately for non-ISP capex and three different types of ISP projects, based on the categorisation in the 2020 ISP: actionable ISP projects, actionable ISP projects with decision rules, and future ISP projects.

Calculation of revenue under the proposed rule change

We modelled the proposed rule change by making the following alterations to the calculation of the RAB and regulatory depreciation, relative to the current framework:

- In the RFM section, the RAB is not indexed, i.e. **actual inflation is not added to the RAB**.
- In the PTRM section, the depreciation of the opening RAB is not adjusted for cumulative inflation and **the regulatory depreciation allowance is not offset by the inflation on the opening RAB**.
- In addition, **depreciation is calculated based on capex as incurred**, rather than as commissioned. I.e., for depreciation purposes, capex is added to the RAB in the year it is incurred, rather than on project's completion.

These alterations are limited to capex associated with ISP projects. Revenue streams from non-ISP expenditure are not affected by the proposed rule change.

Tax calculation

While the approach to calculating the TNSPs' tax allowance is not affected by the rule change request, we note that there is a difference between TransGrid's model and the AER's prescribed approach to calculating tax depreciation. The AER recommends applying the diminishing value method to new capex additions to the tax asset base (TAB) and fully depreciating each asset at the end of its standard life. In other words, the residual value not yet depreciated using the diminishing value formula is entirely written off at the end of the asset's assumed life.[87]

TransGrid instead assume that residual values are only written off at the end of the period covered by their model, i.e. 2073. As our model follows the AER's approach, there are some differences between our estimate of the tax allowance and TransGrid's, particularly towards the end of the modelled period.

TransGrid's model also does not appear to remove the half-year's outturn inflation from capex additions when rolling forward the TAB. This explains some smaller differences between our estimate of the tax allowance and TransGrid's in the earlier part of the modelled period. In line with the AER's inflation review simulator, we remove the half-year's outturn inflation for consistency with the treatment of inflation on capex additions in the RFM.

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[86] AER - Inflation review 2020 - Simulator v2.1 - October 2020.xlsx.

[87] AER (2020), *Final decision: Amendment - Electricity transmission and distribution network service providers, Post-tax revenue models (version 4)*, April, p. 13.

Model inputs and controls

Some of the key inputs into the revenue calculation, including expected inflation, the opening asset base, and its remaining life are sourced from the PTRMs published by the AER in its most recent determinations on TransGrid and ElectraNet (both in 2018).

ElectraNet's standard asset lives and non-ISP capex additions to FY23 are also from the PTRM. New non-ISP capex after 2023 is assumed constant in real terms at its FY19-FY23 average. For TransGrid, standard lives and values of non-ISP capex additions are sourced from TransGrid's own illustrative model, which assumes a repeating five-year investment pattern. We also applied TransGrid's illustrative model's assumptions on the composition of ISP projects by type of asset and their standard lives to both TransGrid's and ElectraNet's ISP-related capex.

As our central scenario, we have adopted the return on debt and equity reflected in TransGrid's analysis, although we test alternative scenarios. Other key inputs (gearing, tax rate, value of imputation credits) are from the AER's rate of return instrument.[88]

The model includes a number of controls that allow the model user to select between alternative input assumptions, including:

- The difference between expected and actual inflation (if any).
- The cost of capital scenarios introduced in section 2.2.4 and described in detail below.
- The electricity demand forecast scenario (e.g. 'slow change' or 'fast change') used in the calculation of price impacts. The electricity demand forecasts are from the Australian Energy Market Operator's (AEMO's) 2020 Electricity Statement of Opportunities (ESOO) and cover the period to 2050.[89]
- The timing and value of ISP projects. The model includes all ISP projects described in AEMO's 2020 Integrated System Plan. The model user can select low, central, and high estimates of expenditure associated with these projects, based on the 2020 ISP, vary the projects' start and end dates, or exclude specific projects from the analysis altogether.[90] An exception to this is the timing and value of Project EnergyConnect, which is a fixed input into the model based on TransGrid's and ElectraNet's Contingent Project Applications (CPAs).[91] As a default setting in the model, we have assumed the central estimate of costs from the 2020 ISP, and an indicative timing based on the dates set out in the 2020 ISP. The cost of ISP projects is assumed to be equally distributed in each year between their start and end dates.

Cost of capital scenarios

In its illustrative modelling, TransGrid assumed that cost of debt would fall in the near term, and then rise in the longer term, while return on equity would remain fixed at the 2018 RORI indicative level. However, given how estimates for these parameters are constructed under the AER's RORI framework, we would expect some degree of directional relationship between the return on debt and equity (other factors held constant). We also note that up to the end of FY23, TransGrid and ElectraNet are not subject to a rate of return determined under the 2018 RORI, but rather the allowed return set in their current regulatory determinations. This includes an allowed return on equity of 7.40%, as compared to the indicative 2018 RORI level of 6.36%.

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[88] AER (2018), *Rate of return instrument – Explanatory statement*, December.

[89] AEMO (2020b), *2020 Electricity Statement of Opportunities,* August. Data can be downloaded from AEMO, National Electricity and Gas Forecasting, http://forecasting.aemo.com.au/. Accessed 1 December 2020.

[90] AEMO (2020a), *2020 Integrated System Plan,* July, Table 14. A number of assumptions have been made in the model in relation to the ISP projects, including for example that TransGrid bears only half the cost of certain projects shared with other TNSPs. We excluded one project (reinforcing Sydney, Newcastle, and Wollongong supply) from our analysis, as the ISP does not provide an estimate of the associated investment.

[91] ElectraNet (2020), *Project EnergyConnect: Contingent Project Application for the South Australian component,* September; and TransGrid (2020), *Project EnergyConnect: Contingent Project Application*, June.

To highlight the impact of different cost of capital assumptions, we have constructed two alternative WACC scenarios.

WACC Scenario 1

In this illustrative scenario, we retain TransGrid's assumed cost of debt, but modify the assumed return on equity such that movements in this parameter are more consistent with the direction of changes in the cost of debt.

Specifically, we assume that:

- annual movements in the benchmark cost of debt are mirrored by the annual risk free rate;
- the cost of debt is calculated using the AER's 10-year trailing average approach which is assumed to continue;
- every four years the AER, through the RORI, updates the risk free rate that underpins the allowed return on equity, based on the risk free rate prevailing at the time; and
- the return on equity from the most recent RORI applies when the AER sets the WACC in its regulatory determination for the TNSPs[92] – the exception is the 2018-2023 regulatory period, for which the allowed cost of equity of 7.40% (determined before the 2018 RORI was finalised) is assumed to apply.

This results in a near term decline in the assumed return on equity, and then an increase in the medium to longer term.

WACC Scenario 2

In this scenario:

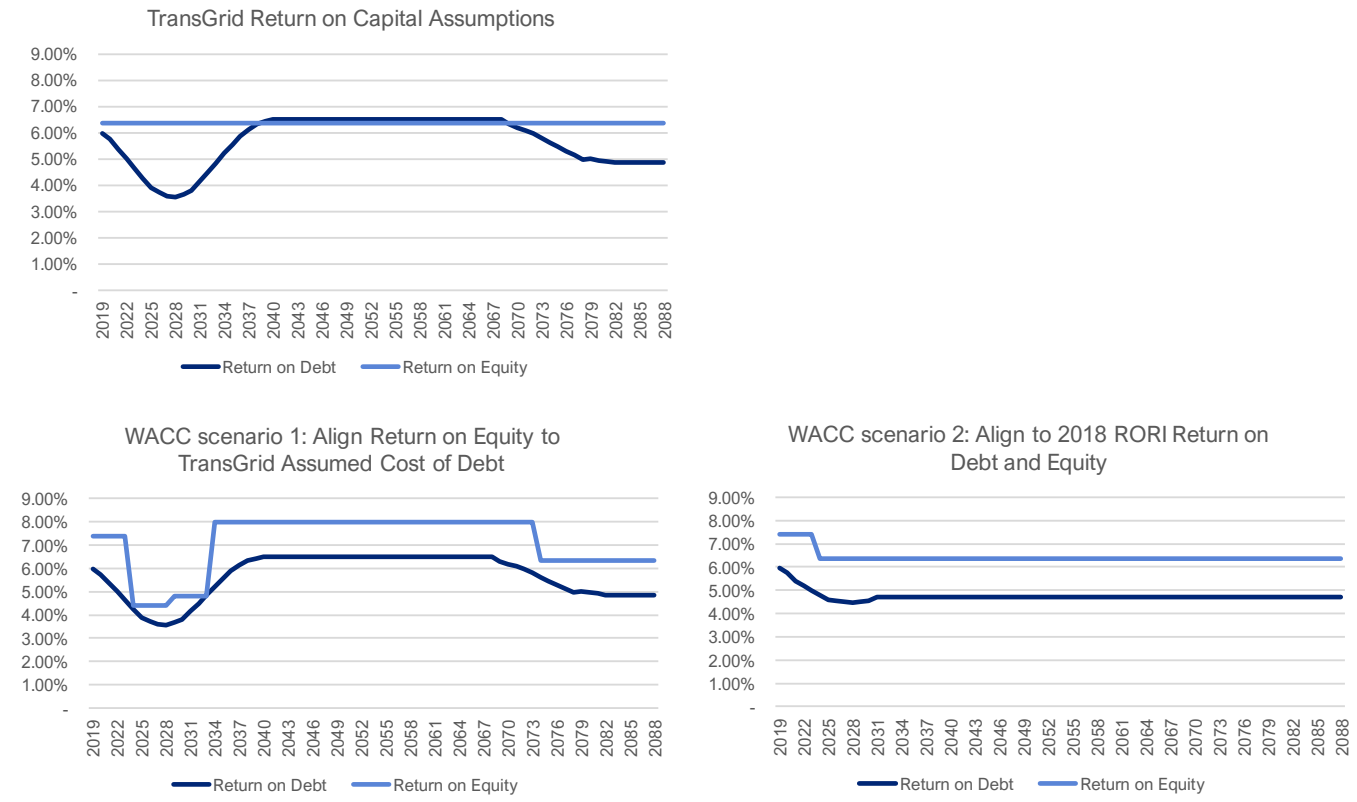
- we retain the 2018 RORI indicative return on equity allowance of 6.36% – this is similar to TransGrid's assumptions, except, as with Scenario 1, up to FY23 we apply TransGrid's current return on equity allowance of 7.40%;
- we adjust the assumed benchmark cost of debt so that it is consistent with the level indicated at the time of the 2018 RORI determination (4.70%) – in practice, we calculate the allowed cost of debt using the AER's 10-year trailing average approach, assuming a constant yield of 4.70% from FY22 onwards;
- in the near term, however, we assume cost of debt consistent with TransGrid's actual allowance, up to FY21.

This results in a cost of debt assumption that is slightly above TransGrid's in the near term, but lower over the longer term.

The rate of return assumptions under each scenario are set out in the figures below. While we do not consider that these scenarios represent likely outcomes, they are nonetheless illustrative of an overall cost of capital that is, broadly, internally consistent. The impact of these scenarios on selected credit metrics for TransGrid under the current framework is illustrated in section 2.2.4 and in Appendix C.2.2.

[92] We assume regulatory periods of five years.

Figure 5.2: Return on capital - illustrative scenarios



Source: CEPA analysis

Assumptions

The model relies on a number of assumptions that simplify some aspects of the PTRM and RFM:

- Non-ISP capex as commissioned coincides with non-ISP capex as incurred.
- There are no ongoing debt or equity raising costs.
- There are no revenue adjustments (e.g., from incentive schemes).
- The TNSP receives its building block annual revenue requirement, without smoothing.[93]

These assumptions are in line with TransGrid's own illustrative modelling.

B.3. Modelling credit metrics

Based on the cash flows from the revenue calculations and the associated values of RAB, debt, and interest, the model calculates simplified financial statements for the two TNSPs. These financial statements include key financial ratios which, combined with other qualitative criteria set out in the rating agency's scorecard, provide an indicative

[93] We note that, according to the NER (6A.6.8), smoothed and unsmoothed revenue should coincide in NPV terms. The NER also requires that smoothed revenue in the final year of the regulatory period is 'as close as reasonably possible' to the annual building block revenue requirement. In practice, the AER has generally implemented this rule by ensuring that the difference between the expected revenue and the annual revenue requirement in the final year is no greater than +/- 3%. The AER previously noted that these constraints mean that in practice the underlying unsmoothed costs largely determine the revenue profile even after smoothing is applied, i.e. while smoothing may reduce some fluctuations in the revenue requirement, it cannot alter the revenue profile fundamentally. See AER (2018a), *New Reg: Towards Consumer-Centric Energy Network Regulation AusNet Trial – AER Staff Guidance Note 6: Revenue Path Profile*, August.

credit rating for the TNSPs (details of the scorecard approach are provided in section 2.2.1). The four main ratios we considered are:

- **FFO / Net Debt** – This is the only credit metric considered in TransGrid's illustrative model. The FFO is calculated as the revenue allowance minus opex, tax payable, and interest on the opening debt balance. In line with TransGrid's model assumptions, net debt is calculated using the average annual debt balance, based on the TNSPs' gearing and average between opening and closing RAB for the year. We also assume that the TNSPs have no unrestricted cash, thus net debt equals total debt.
- **FFO Interest Coverage** – Calculated as FFO plus interest expense, divided by interest expense.
- **Retained Cash Flow (RCF) / Net Debt** – Where the RCF is calculated as FFO minus the dividends paid out by the TNSP. Dividends are calculated as a percentage of the network's post-tax revenue. The model also allows for a portion of the dividends to be reinvested in the business rather than paid out to shareholders.[94]
- **Net Debt / RAB** – For consistency with the calculation of net debt, this ratio is based on the average of the opening and closing RAB. This means that this ratio remains constant at the notional gearing level of 60%.

As an alternative measure of the TNSPs' ability to cover its interest expenses, rating agencies may consider an **Adjusted Interest Coverage Ratio** (AICR) instead of the FFO interest coverage. The AICR seeks to improve the comparability of interest coverage across regulated networks by removing from the FFO those cash flows that can be influenced by specific features of the regulatory regime, such as regulatory depreciation, differences between actual opex and statutory operating expenses (e.g., inclusive of expensed capex), and other revenue adjustments. We calculate the ICR as FFO minus regulatory depreciation, plus interest expense, divided by interest expense.

Target gearing

The model user can manually select the level of gearing underpinning the credit metrics calculations (for example, to target specific levels of certain financial ratios) and potentially set it to a different level than the notional gearing used in the revenue allowance calculation.

This allows the model user to test the impact of different gearing levels on financial metrics and, consequently, on the TNSPs' credit rating.

[94] In line with the AER's 2018 Rate of Return Instrument, the model assumes a payout ratio of 90%. In line with TransGrid's 2018 PTRM, dividend reinvestment is capped at 30% of total dividends.

Appendix C MODELLING RESULTS

C.1. REVENUE AND PRICE IMPACT

The proposed rule change would alter the revenue profile of the TNSPs by bringing ISP-related revenue forward. The overall impact on the TNSP's revenue requirement (excluding the tax allowance), however, would be neutral in NPV terms. The figures in this section compare the TNSPs' revenue profile under the current regulatory framework (i.e., the 'base case') and the proposed rule change, for different assumptions on the cost of capital, expected inflation, and the scope of the ISP program. [95]

We have also used the TNSPs' modelled revenue profiles to derive an estimate of the price impact of the proposed rule change. This is based on a simple calculation that divides the TNSPs' revenue requirement by a forecast of annual electricity consumption in the TNSPs' state (excluding electricity from solar PV and small non-scheduled generation). Additional figures in this section compare the price impact of ISP projects with and without the rule change, for different assumptions on the scope of the ISP program, under AEMO's 2020 ESOO 'Central' demand scenario.

[95] As the rule change request does not apply to 'committed' ISP projects, i.e., projects that are underway and have already received regulatory approval, we do not include these projects in our modelling of rule change impacts and assume that they are included in 'business as usual' capex. The 2020 ISP lists two committed projects relevant to NSW and SA: SA system strength remediation and QNI Minor. See AEMO (2020), p. 14.

Figure 5.3: TransGrid - Annual revenue requirement associated with Project EnergyConnect (Real $m 2018) under TransGrid's WACC assumptions.

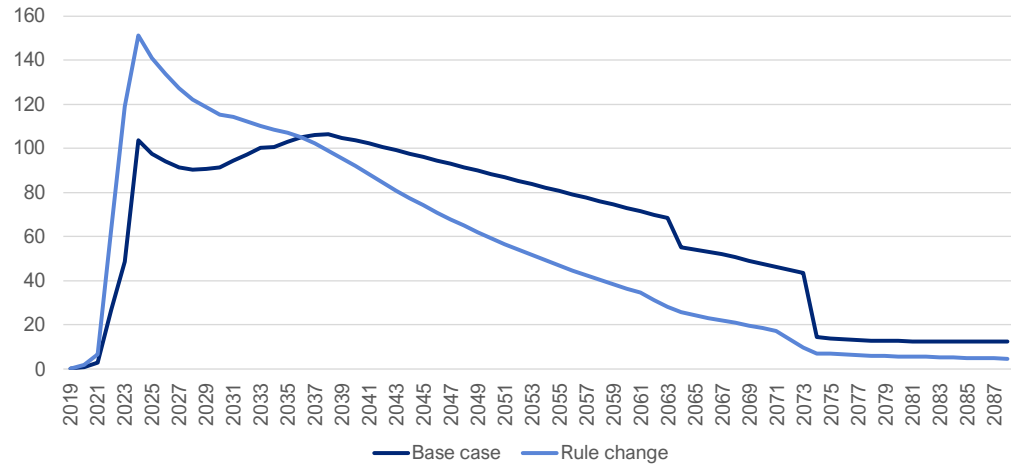


Figure 5.4: TransGrid - Annual revenue requirement associated with Project EnergyConnect (Real $m 2018) under WACC scenario 1.

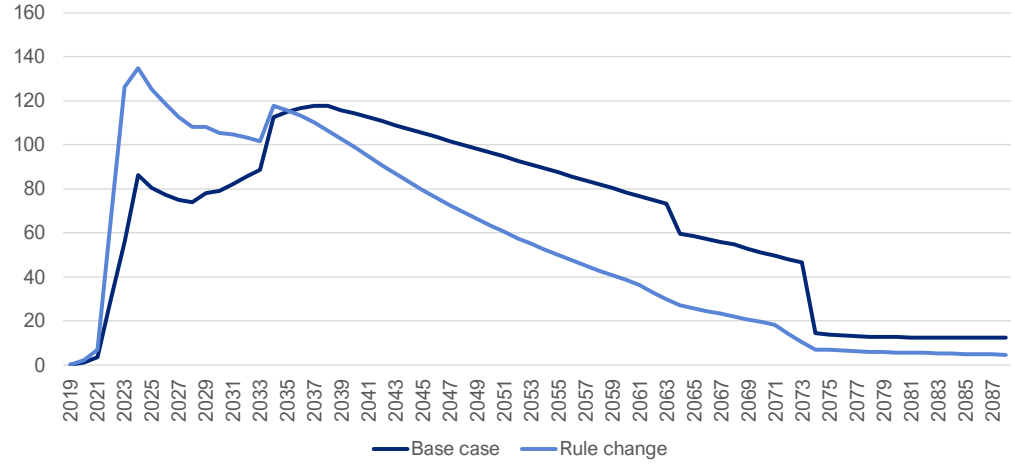


Figure 5.5: TransGrid - Price impact of proposed rule change: Project EnergyConnect (Real 2018 cents/KWh) under TransGrid's WACC assumptions.

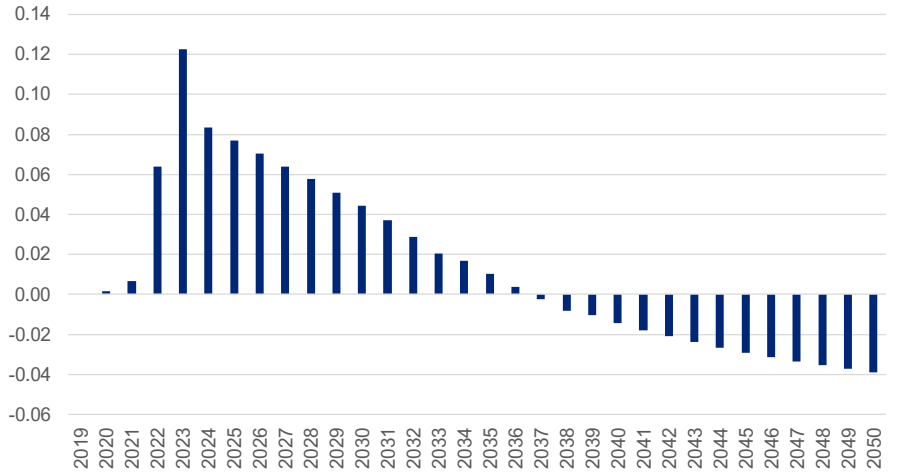


Figure 5.6: TransGrid - Annual revenue requirement associated with Project EnergyConnect (Real $m 2018) under WACC scenario 2.

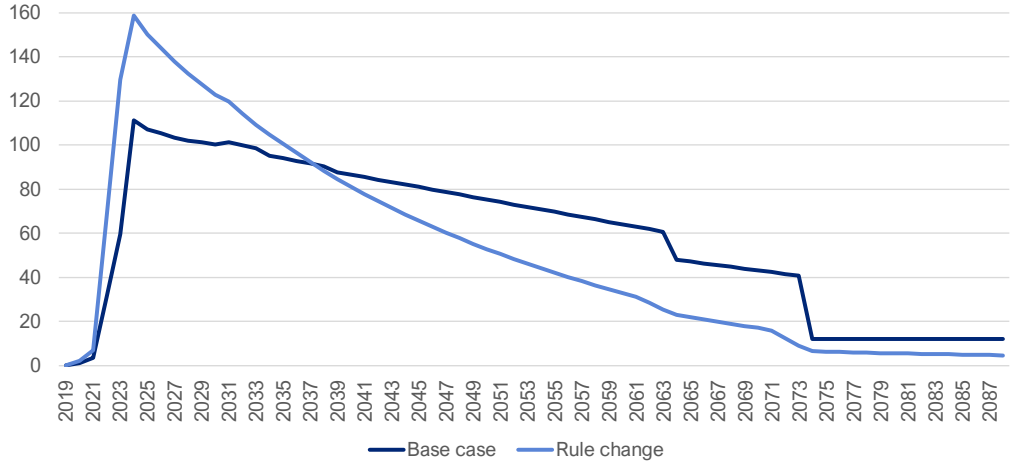


Figure 5.7: TransGrid - Annual revenue requirement associated with all actionable ISP projects (Real $m 2018) under TransGrid's WACC assumptions.

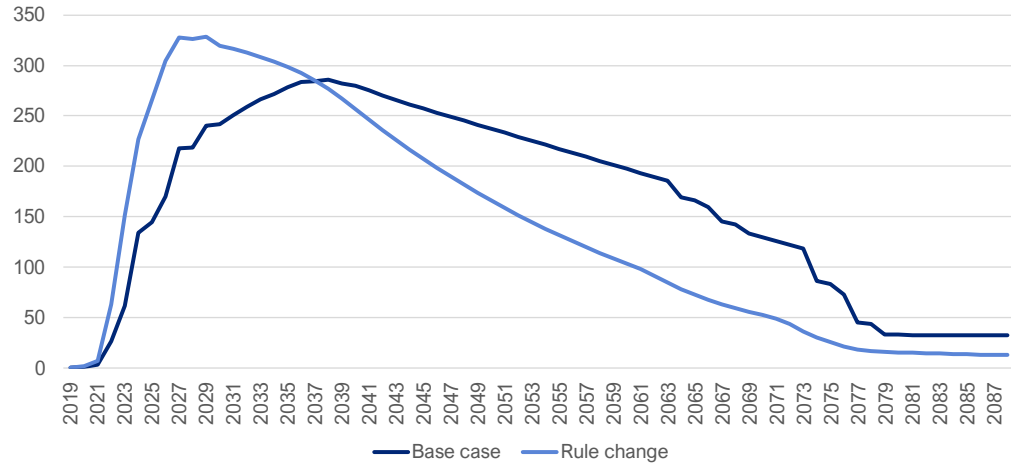


Figure 5.8: TransGrid - Annual revenue requirement associated with all actionable and future ISP projects (Real $m 2018) under TransGrid's WACC assumptions.

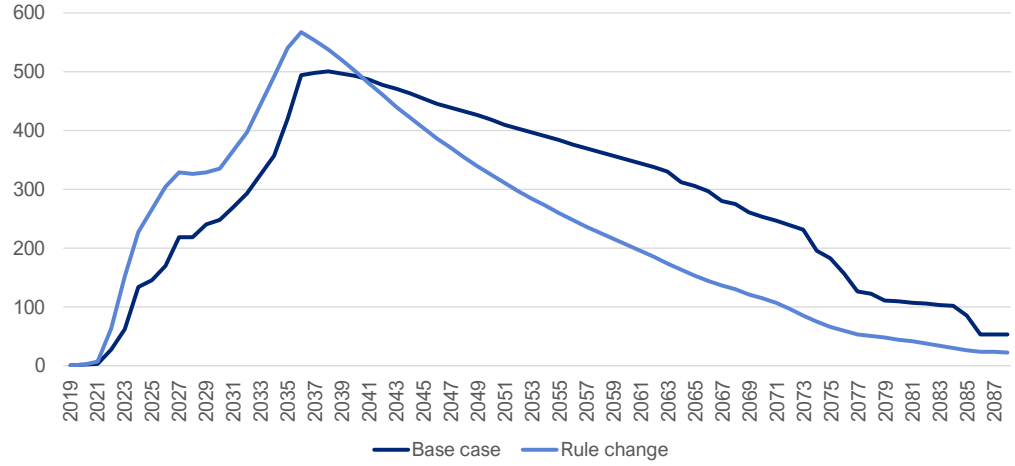


Figure 5.9: TransGrid - Price impact of proposed rule change: all actionable ISP projects (Real 2018 cents/KWh) under TransGrid's WACC assumptions.

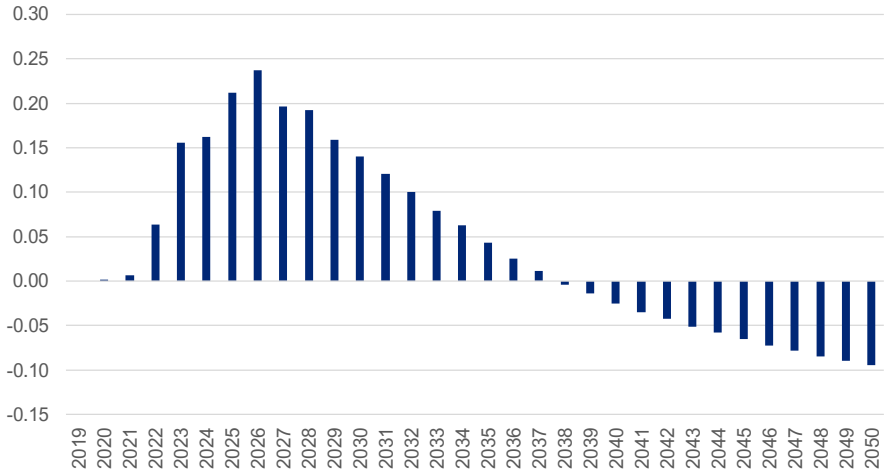


Figure 5.10: TransGrid - Price impact of proposed rule change: all actionable and future ISP (Real 2018 cents/KWh) under TransGrid's WACC assumptions.

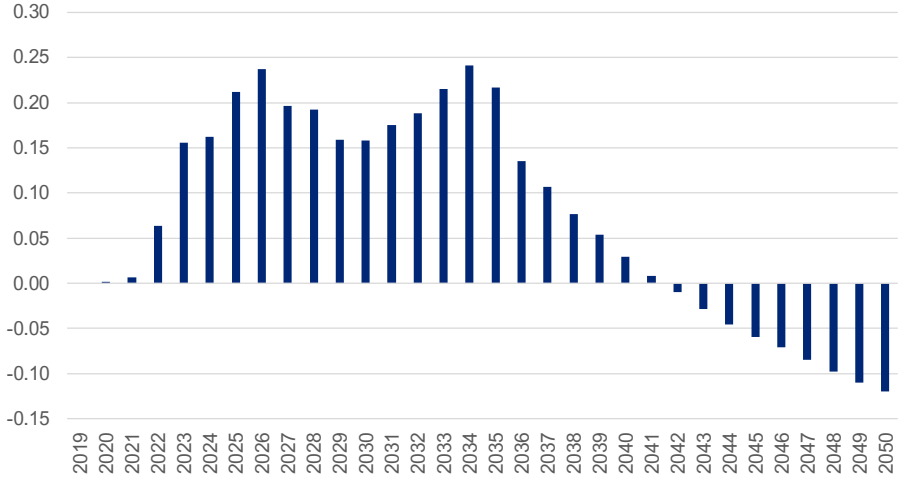


Figure 5.11: ElectraNet - Annual revenue requirement associated with Project EnergyConnect (Real $m 2018) under TransGrid's WACC assumptions.

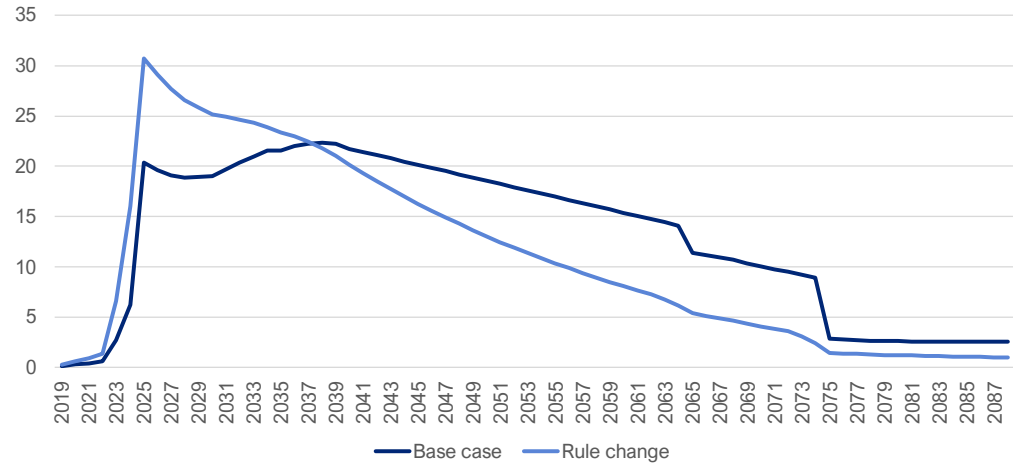


Figure 5.12: ElectraNet - Annual revenue requirement associated with Project EnergyConnect (Real $m 2018) under WACC scenario 1.

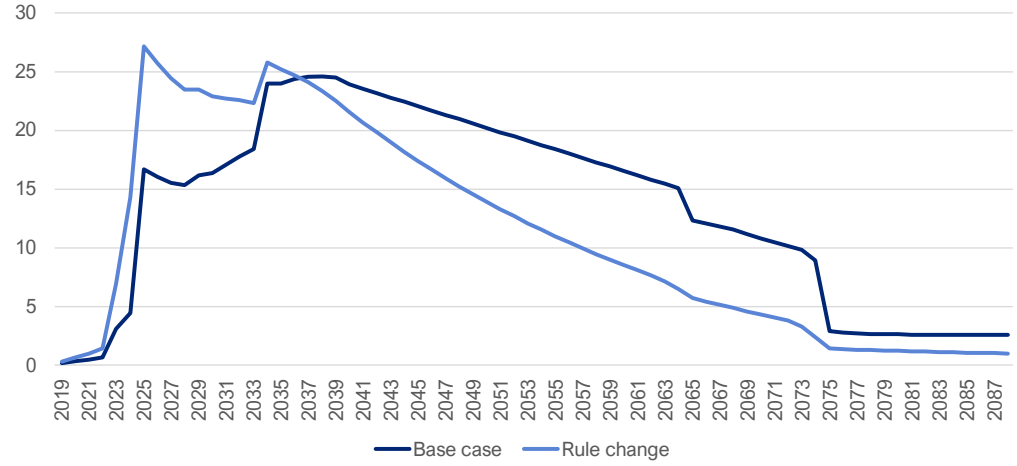


Figure 5.13: ElectraNet - Price impact of proposed rule change: Project EnergyConnect (Real 2018 cents/KWh) under TransGrid's WACC assumptions.

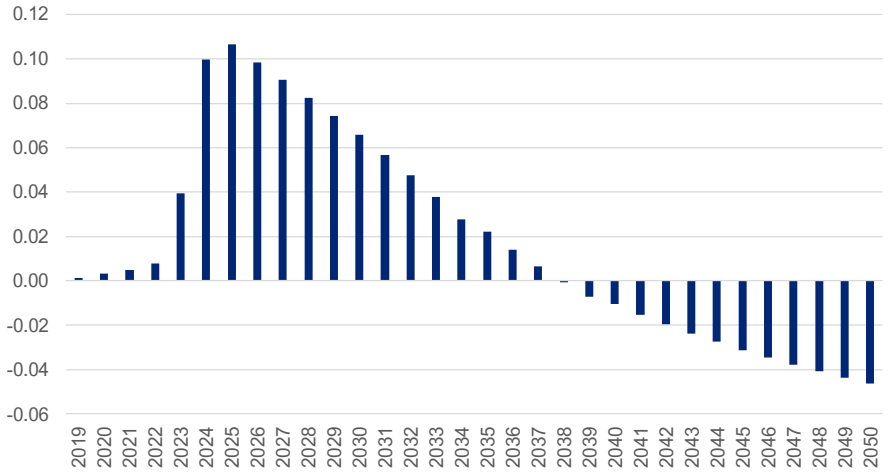


Figure 5.14: ElectraNet - Annual revenue requirement associated with Project EnergyConnect (Real $m 2018) under WACC scenario 2.

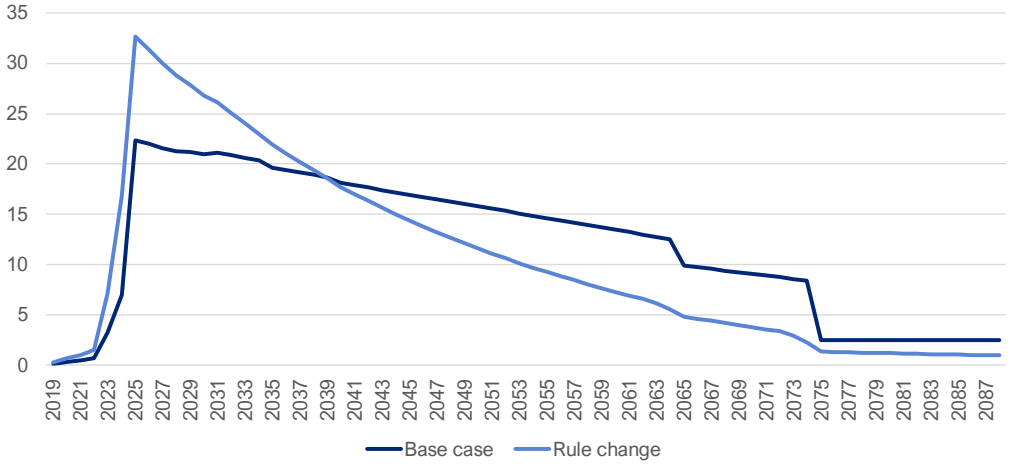


Figure 5.15: ElectraNet - Annual revenue requirement associated with all actionable and future ISP projects (Real $m 2018) under TransGrid's WACC assumptions.

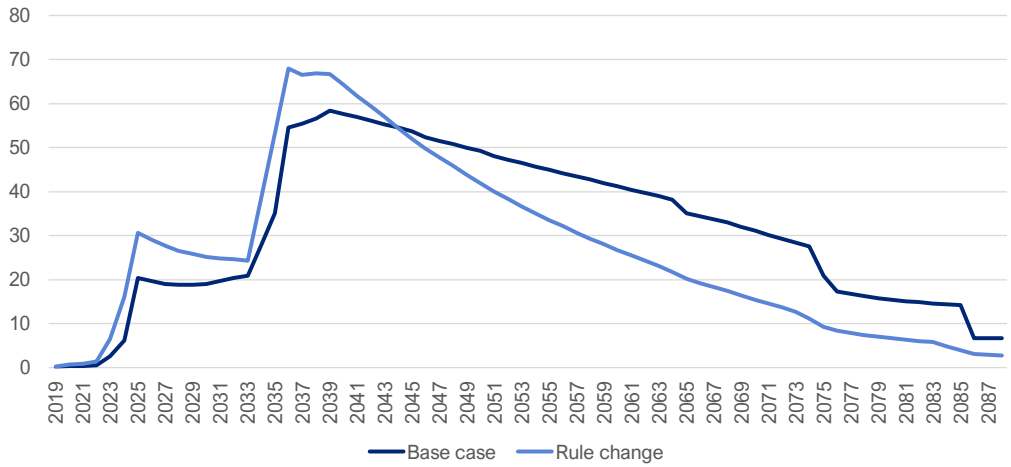


Figure 5.16: ElectraNet - Price impact of proposed rule change: all actionable and future ISP projects (Real 2018 cents/KWh) under TransGrid's WACC assumptions.

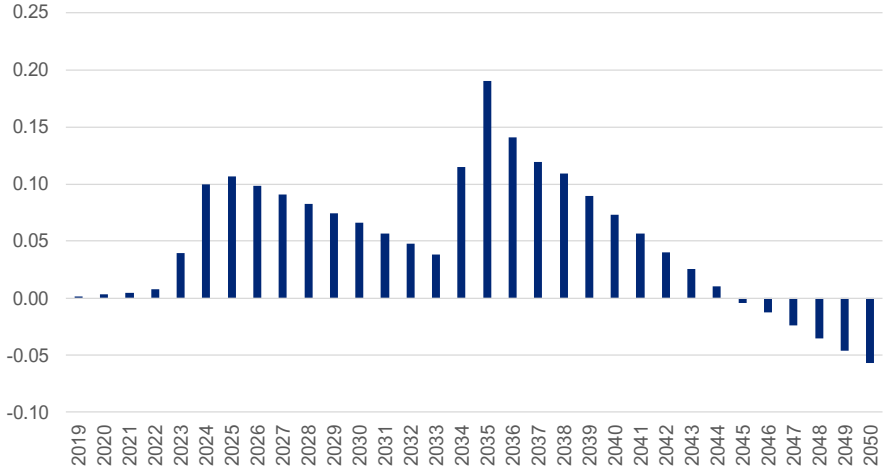


Figure 5.17: TransGrid - Annual revenue requirement (base case) associated with non-ISP RAB + Project EnergyConnect (Real $m 2018) under TransGrid's WACC assumptions and different inflation scenarios.

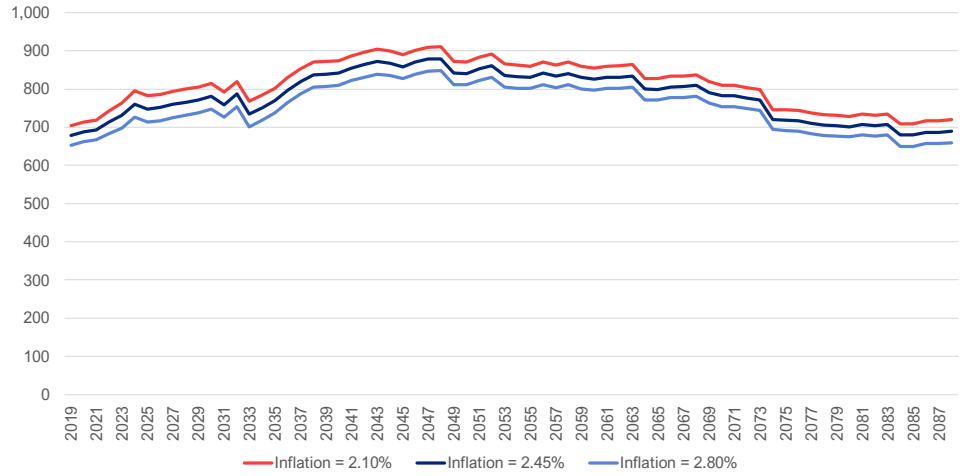


Figure 5.18: ElectraNet - Annual revenue requirement (base case) associated with non-ISP RAB + Project EnergyConnect (Real $m 2018) under TransGrid's WACC assumptions and different inflation scenarios.

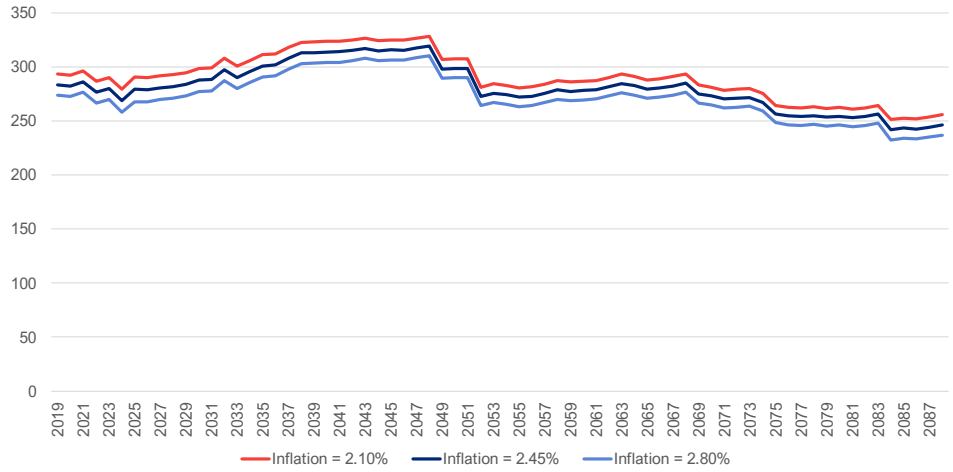


Figure 5.19: TransGrid - Annual revenue requirement (rule change) associated with non-ISP RAB + Project EnergyConnect (Real $m 2018) under TransGrid's WACC assumptions and different inflation scenarios.

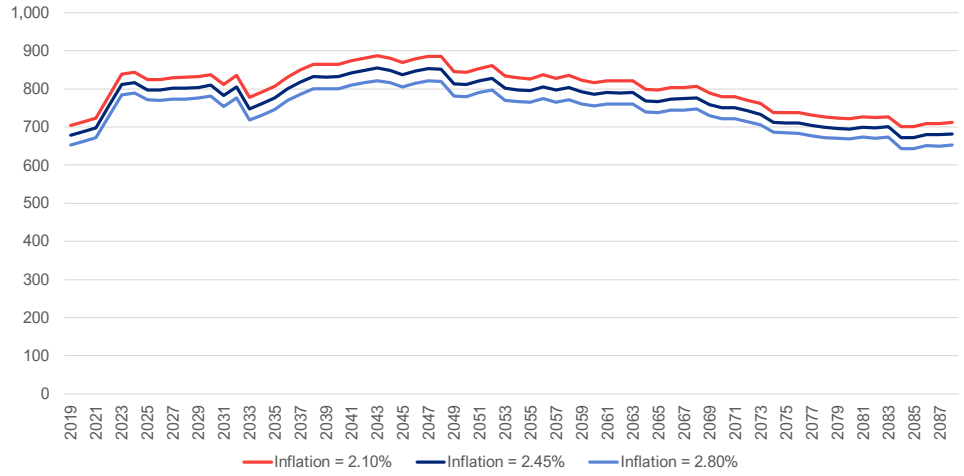
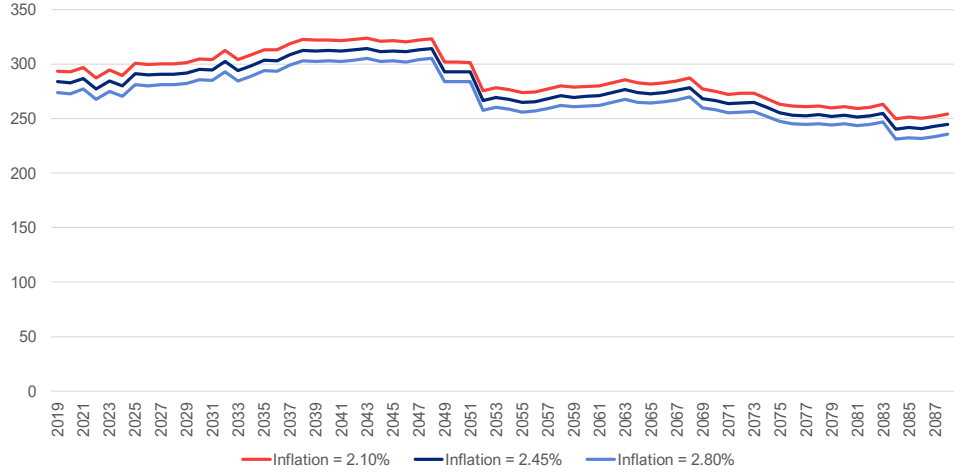


Figure 5.20: ElectraNet - Annual revenue requirement (rule change) associated with non-ISP RAB + Project EnergyConnect (Real $m 2018) under TransGrid's WACC assumptions and different inflation scenarios.



C.2. FINANCIAL RATIOS AND CREDIT RATINGS

This section presents modelling results for two key financial ratios used in the credit rating scorecard – FFO/ Net Debt and FFO Interest Cover[96] – as well as the TNSPs' overall scorecard indicated credit rating, under both the current regulatory framework (base case) and the proposed rule change, for different assumptions on cost of capital, the scope of the ISP program and the TNSPs' actual gearing.

For example, Figure 5.21 to Figure 5.23 overleaf describe a scenario where TransGrid's ISP program is limited to project EnergyConnect and the current regulatory framework applies. Each figure plots the TNSP's credit metrics/ overall rating against the rating bands used by Moody's to attribute a sub-factor/ overall rating. Each figure provides three series: one based on the assumption that the TNSP's actual gearing coincides with the notional gearing of 60% used to determine the annual revenue allowance; and two other series based on an assumed actual gearing level set to keep FFO/ Net Debt above the thresholds of 7% and 9% over the whole modelled period. This is a relatively crude assumption, as it assumes a flat rate of gearing throughout the modelled period. However, it is helpful for comparing outcomes between different scenarios. This is repeated in the following pages for alternative scenarios.

Section C.2.1 presents scenarios based on the WACC assumptions used in TransGrid's illustrative model. Section C.2.2 presents results for alternative WACC scenarios. Section C.2.3 presents results for alternative inflation scenarios.

[96] Additional qualitative rating factors and financial metrics are presented in section 2.2.2.

C.2.1. Financial ratios and credit ratings – TransGrid's WACC assumptions

TransGrid – Non-ISP capex + PEC – Base case

Figure 5.21: TransGrid FFO/Net Debt – Non-ISP capex + Project EnergyConnect

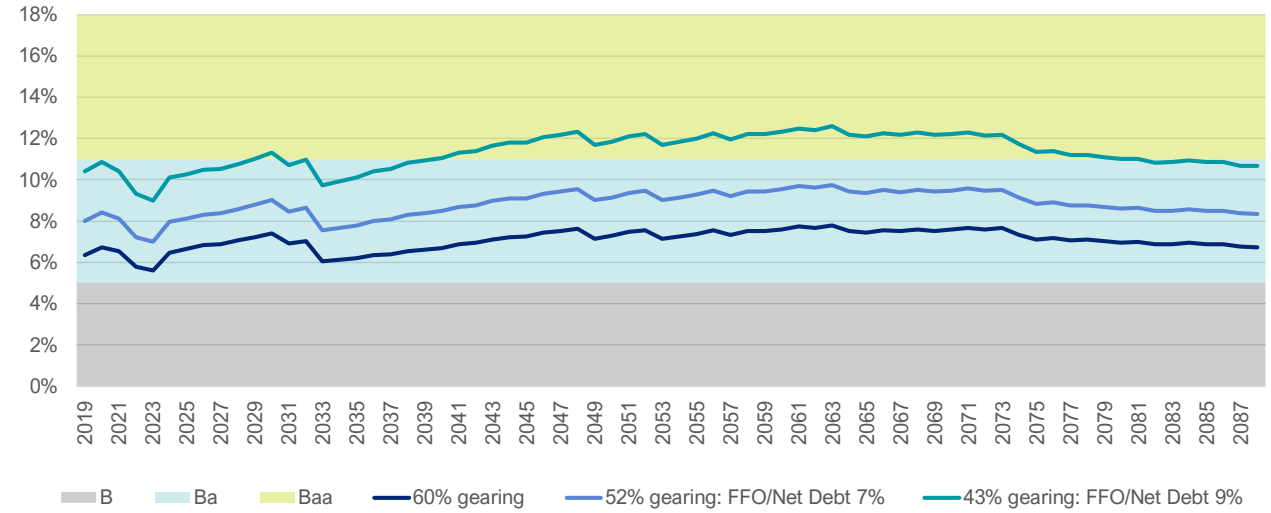


Figure 5.22: TransGrid FFO Interest Cover – Non-ISP capex + Project EnergyConnect

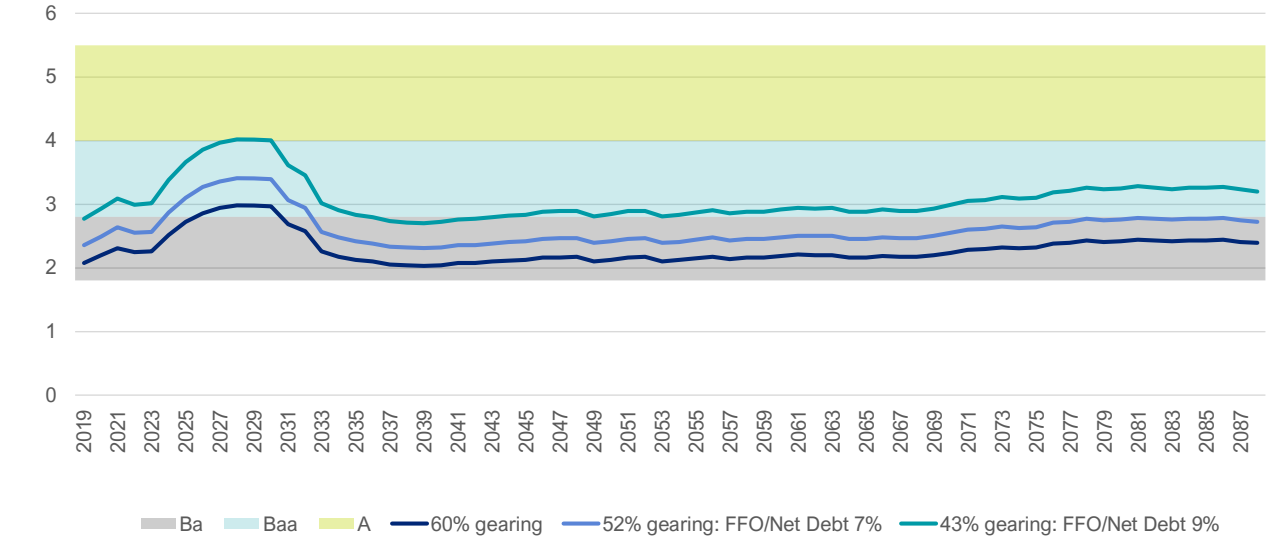
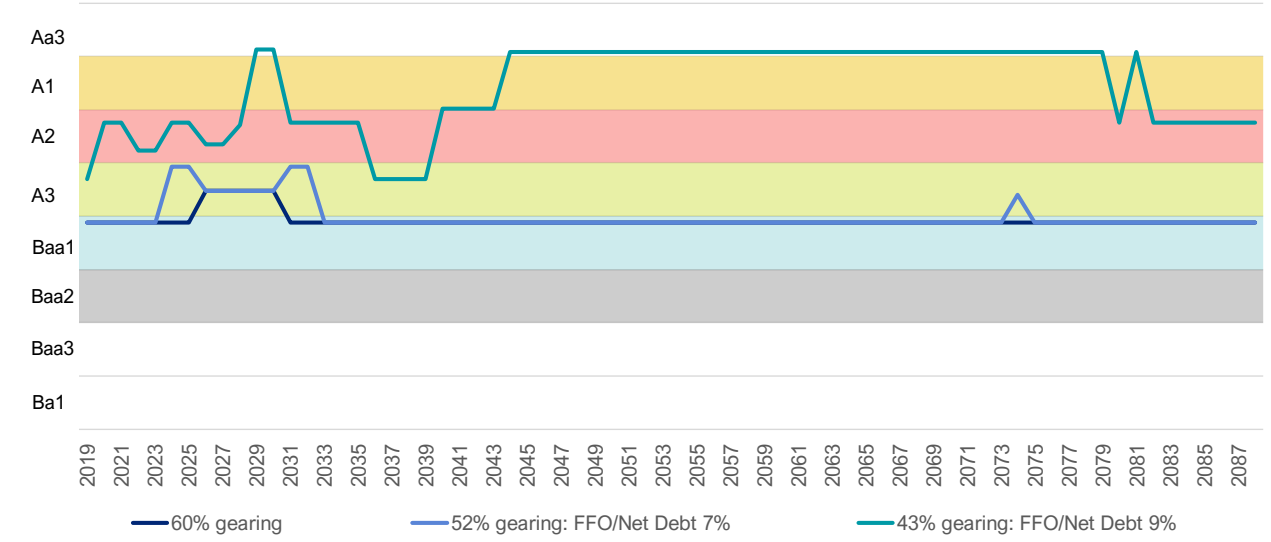


Figure 5.23: TransGrid overall scorecard-indicated credit rating – Non-ISP capex + Project EnergyConnect



TransGrid – Non-ISP capex + PEC – Rule change

Figure 5.24: TransGrid FFO/Net Debt – Non-ISP capex + Project EnergyConnect

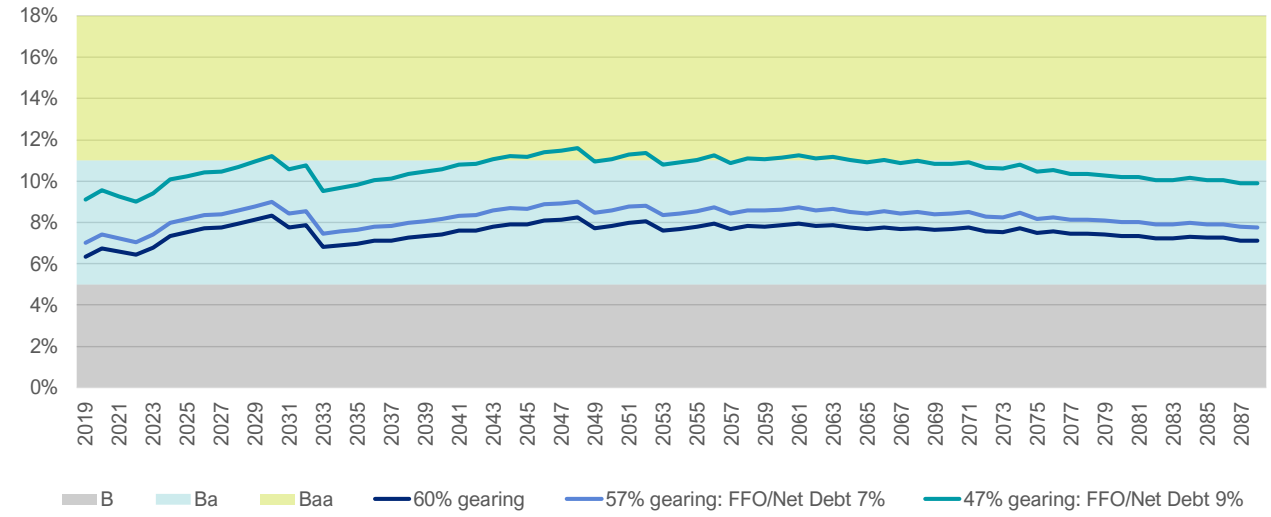


Figure 5.25: TransGrid FFO Interest Cover – Non-ISP capex + Project EnergyConnect

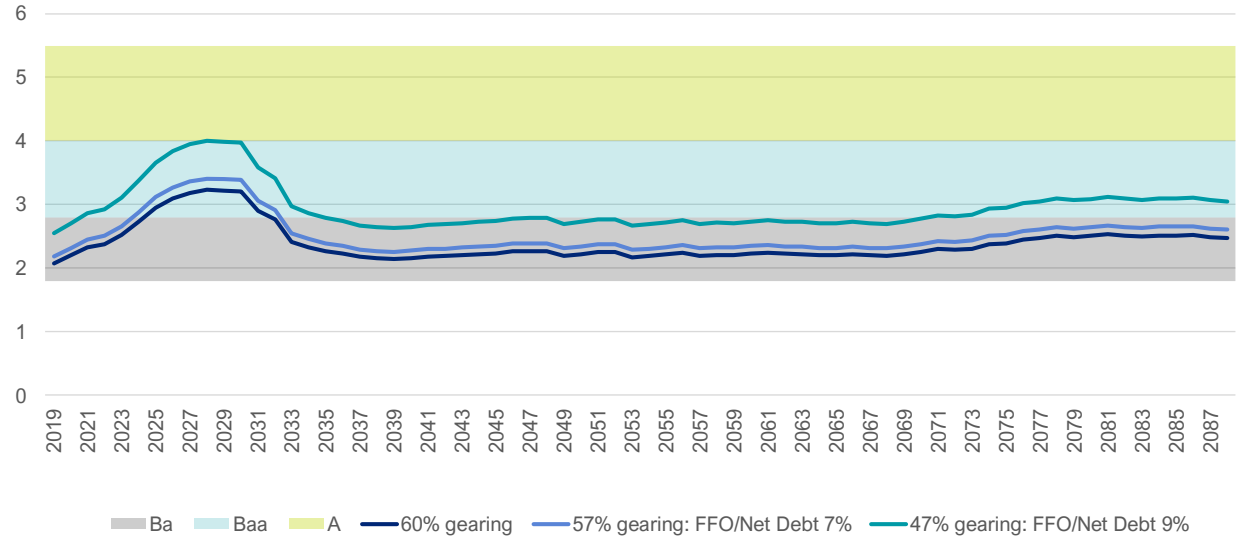
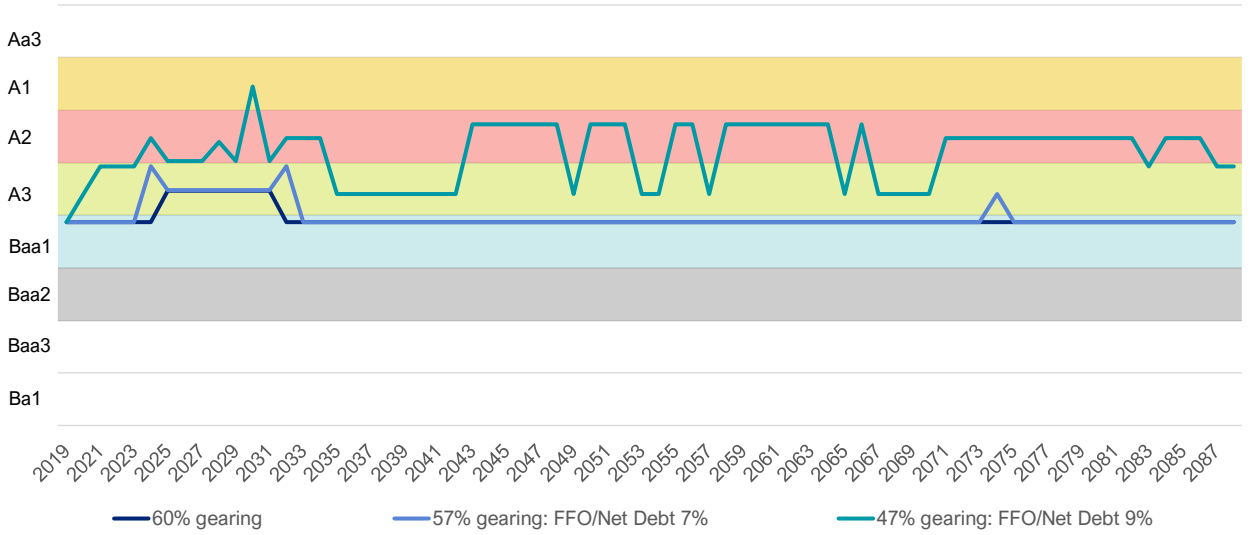


Figure 5.26: TransGrid overall scorecard-indicated credit rating – Non-ISP capex + Project EnergyConnect



TransGrid – Non-ISP capex + All actionable ISP projects – Base case

Figure 5.27: TransGrid FFO/Net Debt – Non-ISP capex + All actionable ISP projects

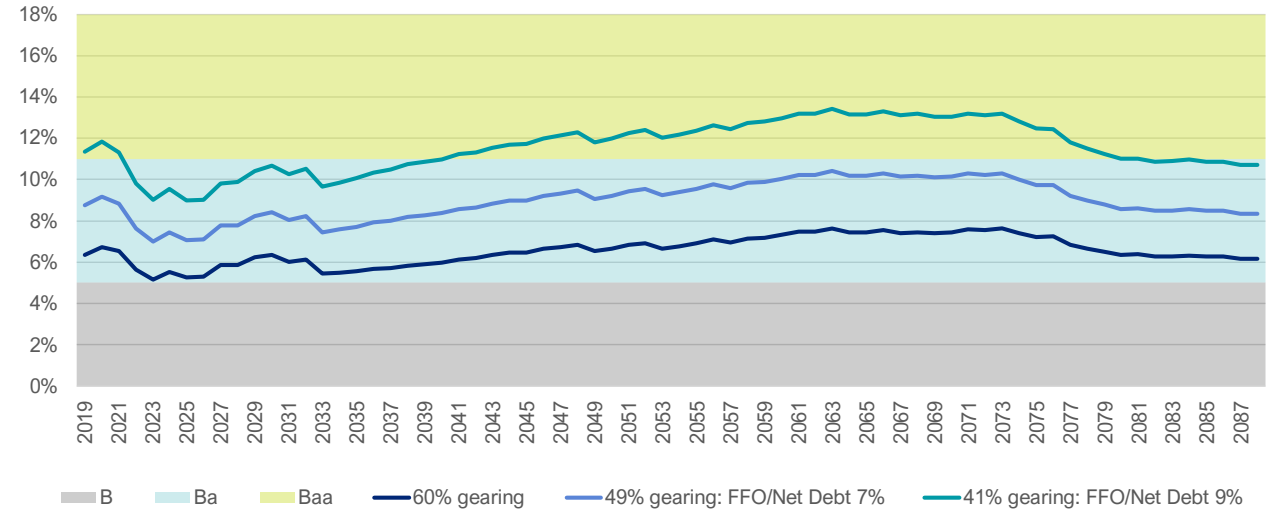


Figure 5.28: TransGrid FFO Interest Cover – Non-ISP capex + All actionable ISP projects

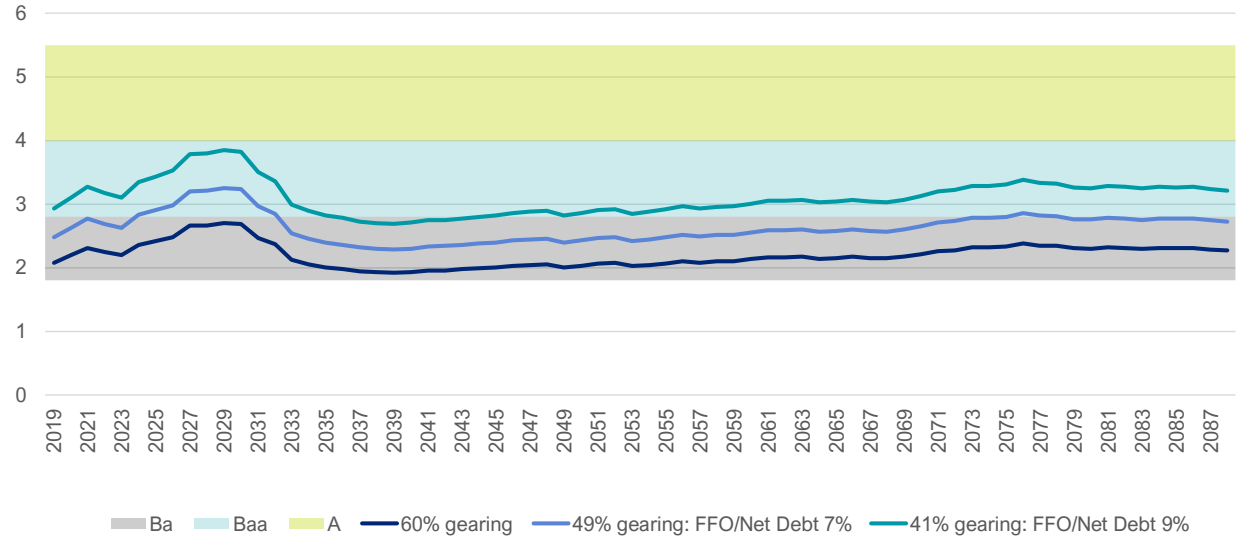
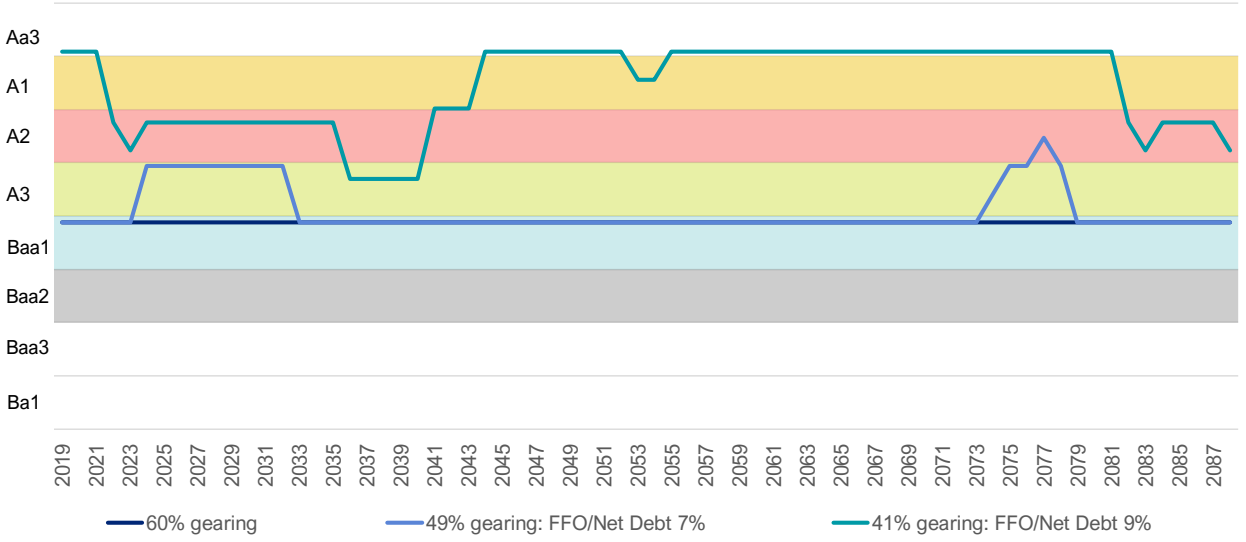


Figure 5.29: TransGrid overall scorecard-indicated credit rating – Non-ISP capex + All actionable ISP projects



TransGrid – Non-ISP capex + All actionable ISP projects – Rule change

Figure 5.30: TransGrid FFO/Net Debt – Non-ISP capex + All actionable ISP projects

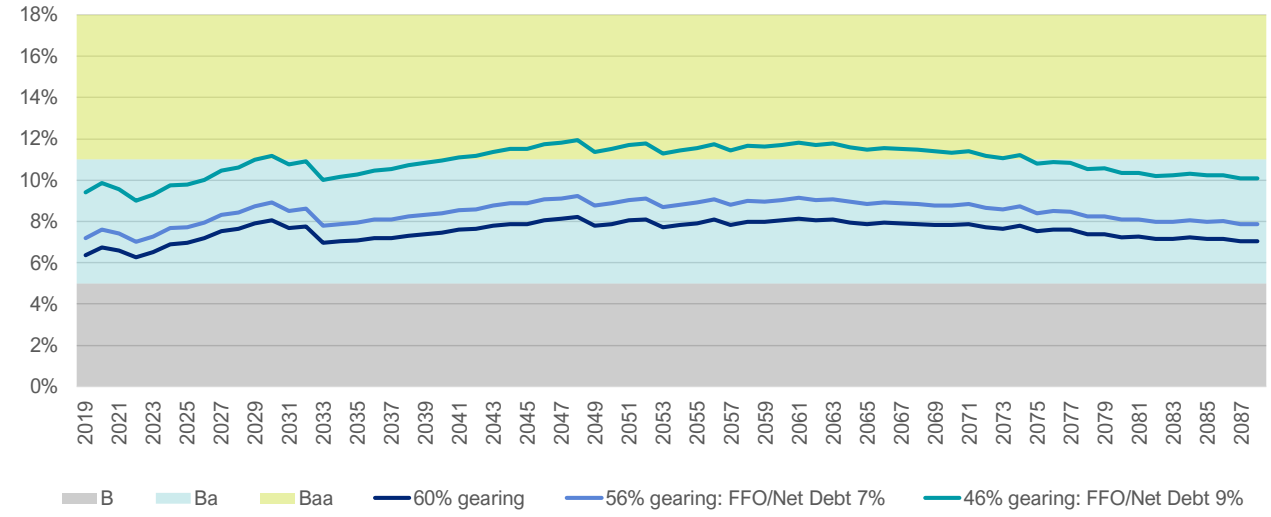


Figure 5.31: TransGrid FFO Interest Cover – Non-ISP capex + All actionable ISP projects

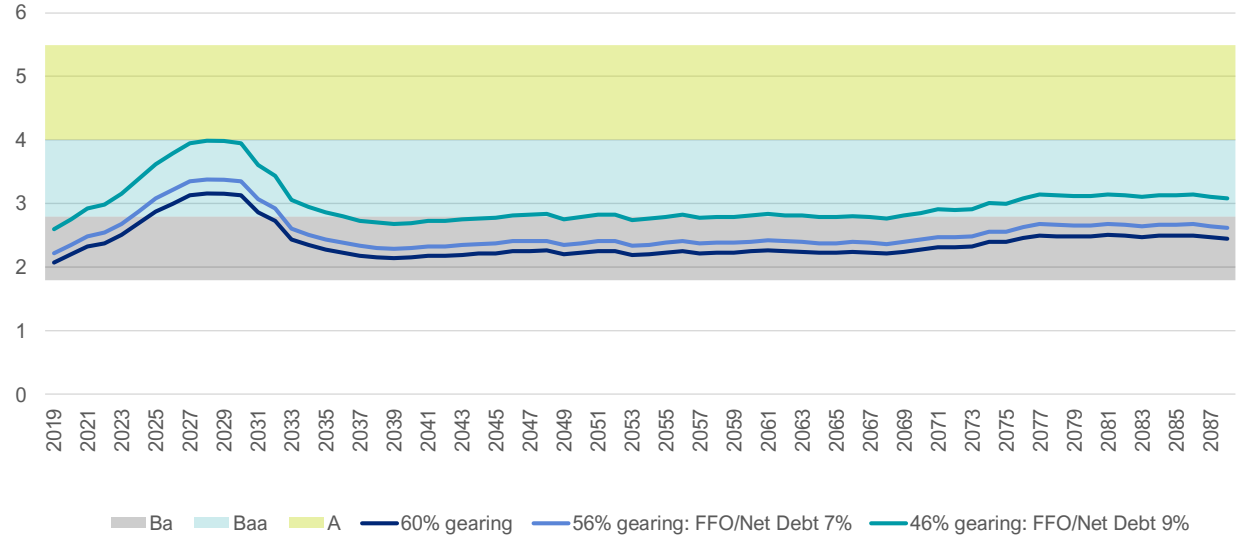
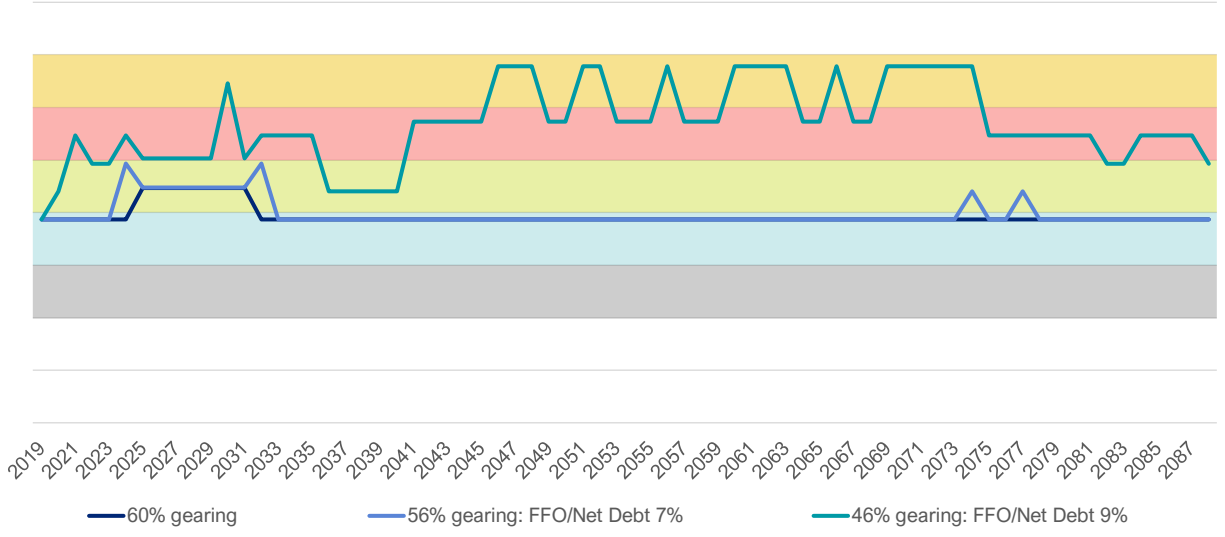


Figure 5.32: TransGrid overall scorecard-indicated credit rating – Non-ISP capex + All actionable ISP projects



TransGrid – Non-ISP capex + All actionable and future ISP – Base case

Figure 5.33: TransGrid FFO/Net Debt – Non-ISP capex + All actionable and future ISP projects

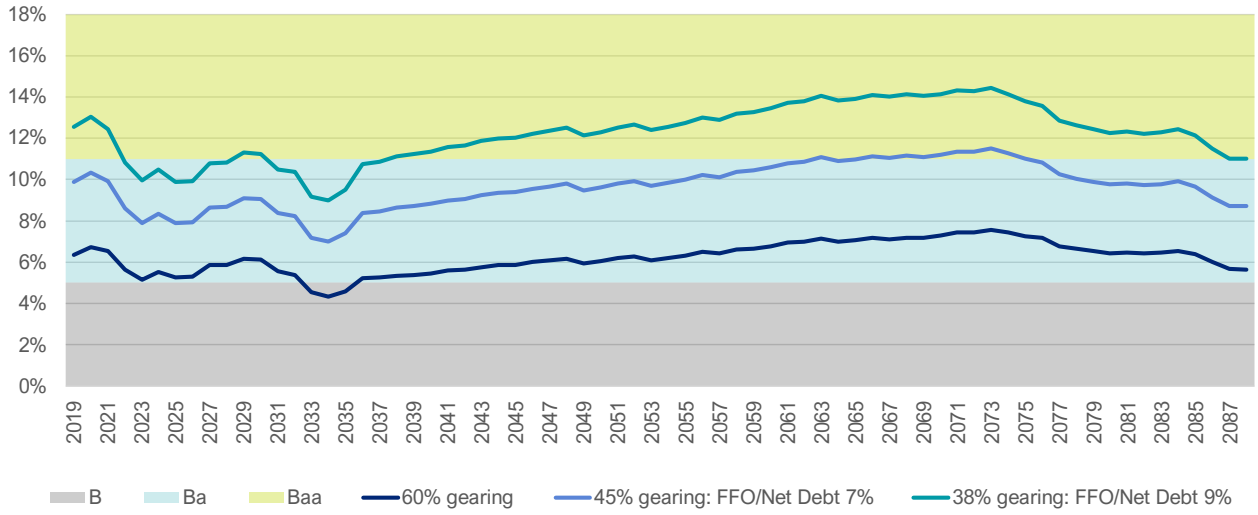


Figure 5.34: TransGrid FFO Interest Cover – Non-ISP capex + All actionable and future ISP projects

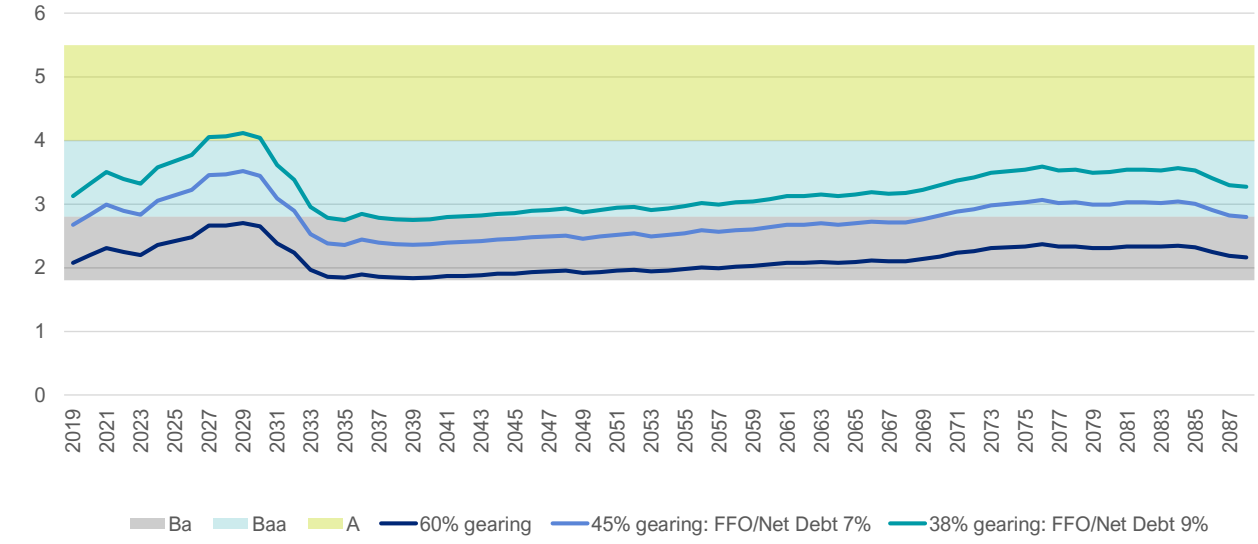
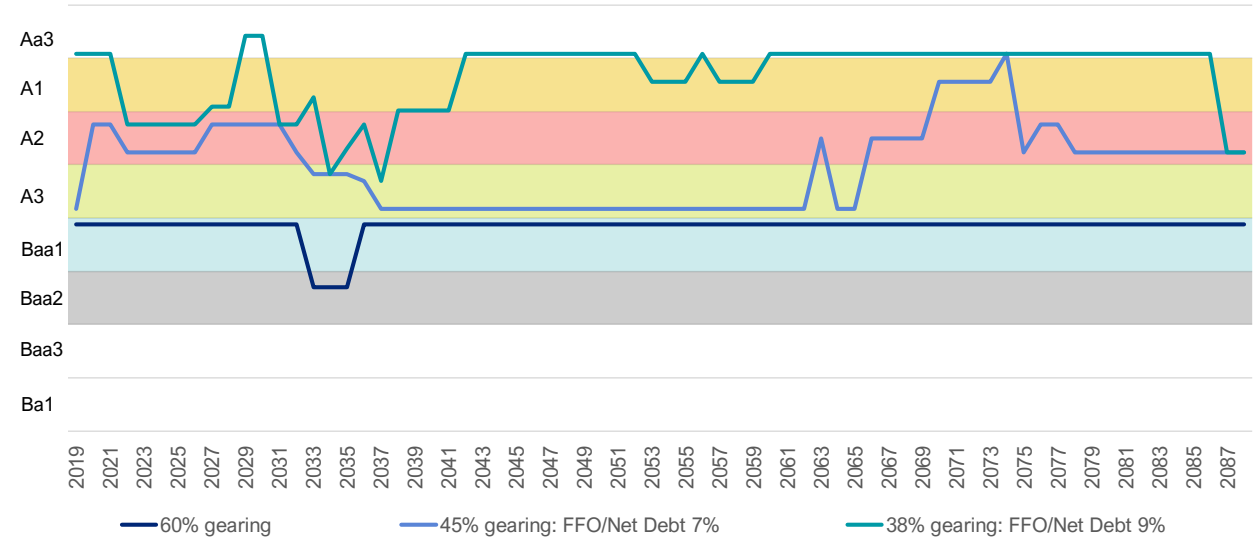


Figure 5.35: TransGrid overall scorecard-indicated rating – Non-ISP capex + All actionable and future ISP projects



TransGrid – Non-ISP capex + All actionable and future ISP – Rule change

Figure 5.36: TransGrid FFO/Net Debt – Non-ISP capex + All actionable and future ISP projects

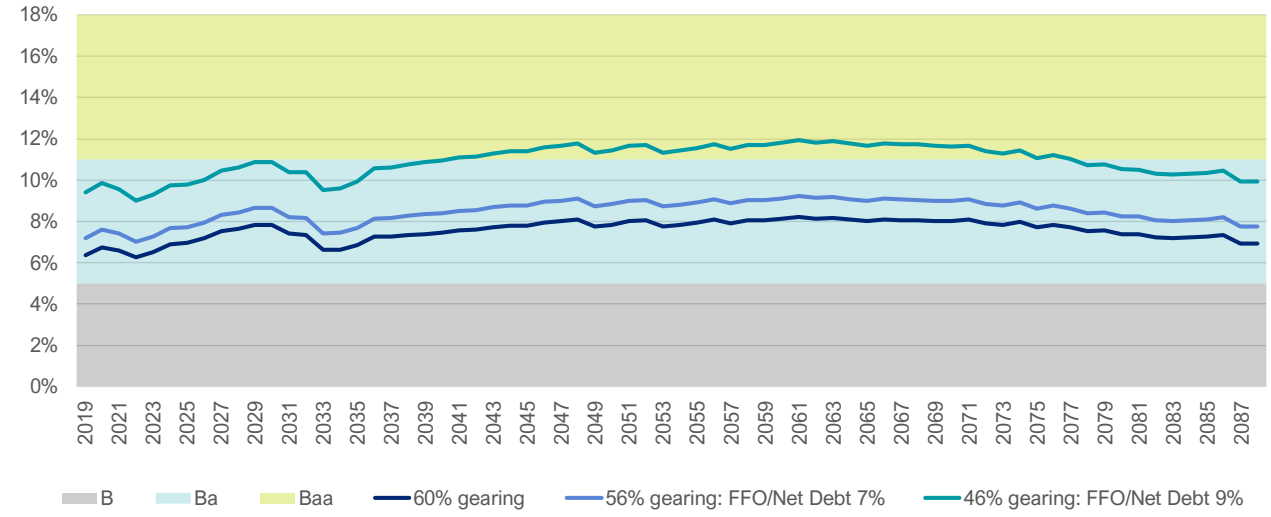


Figure 5.37: TransGrid FFO Interest Cover – Non-ISP capex + All actionable and future ISP projects

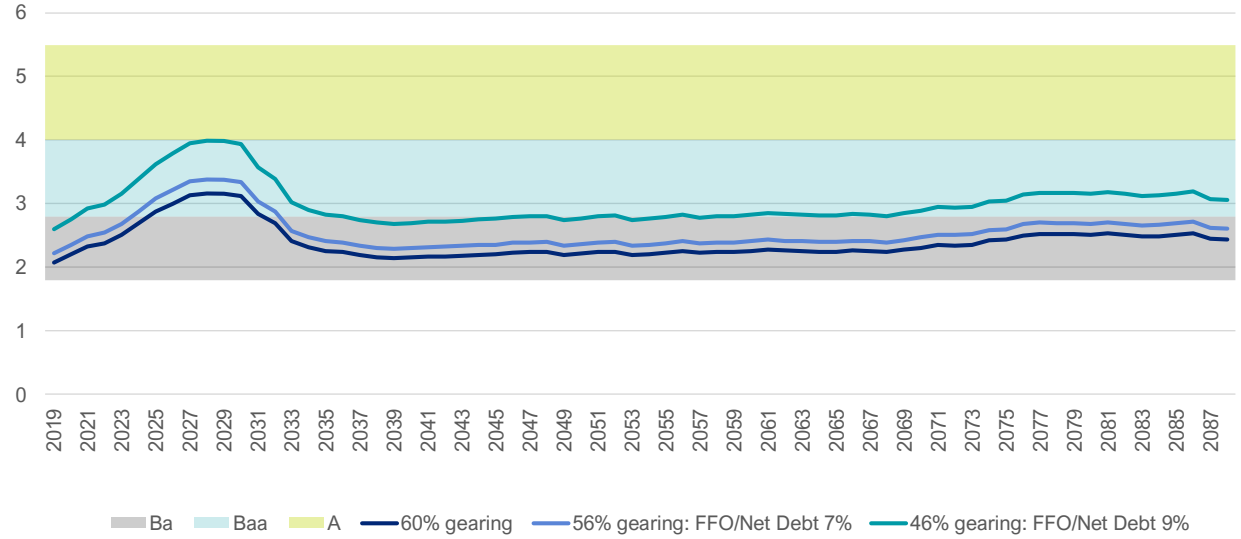
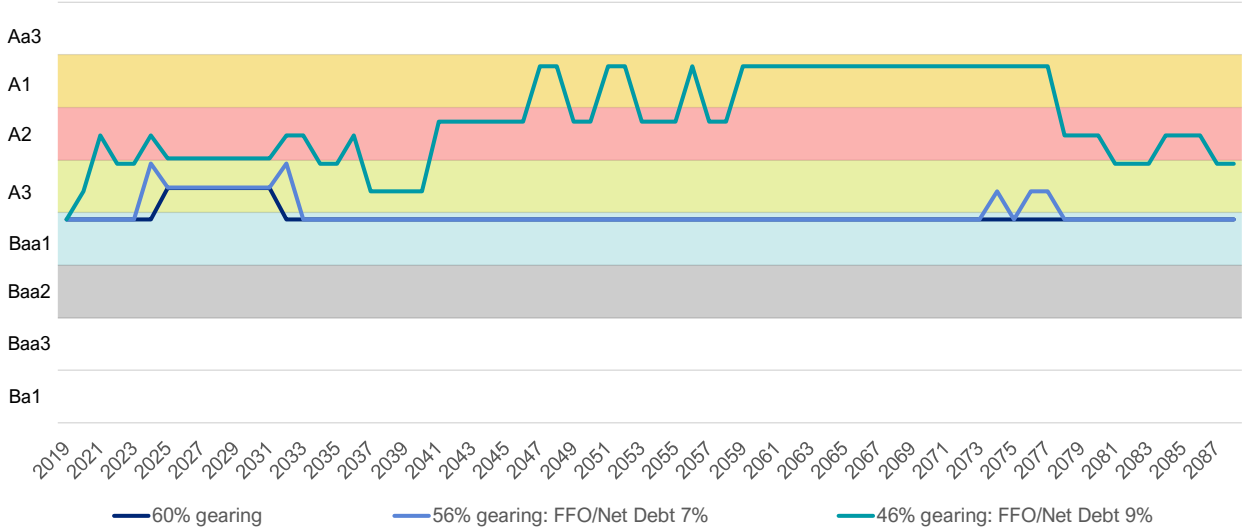


Figure 5.38: TransGrid overall scorecard-indicated rating – Non-ISP capex + All actionable and future ISP projects



ElectraNet – Non-ISP capex + PEC – Base case

Figure 5.39: ElectraNet FFO/Net Debt – Non-ISP capex + Project EnergyConnect

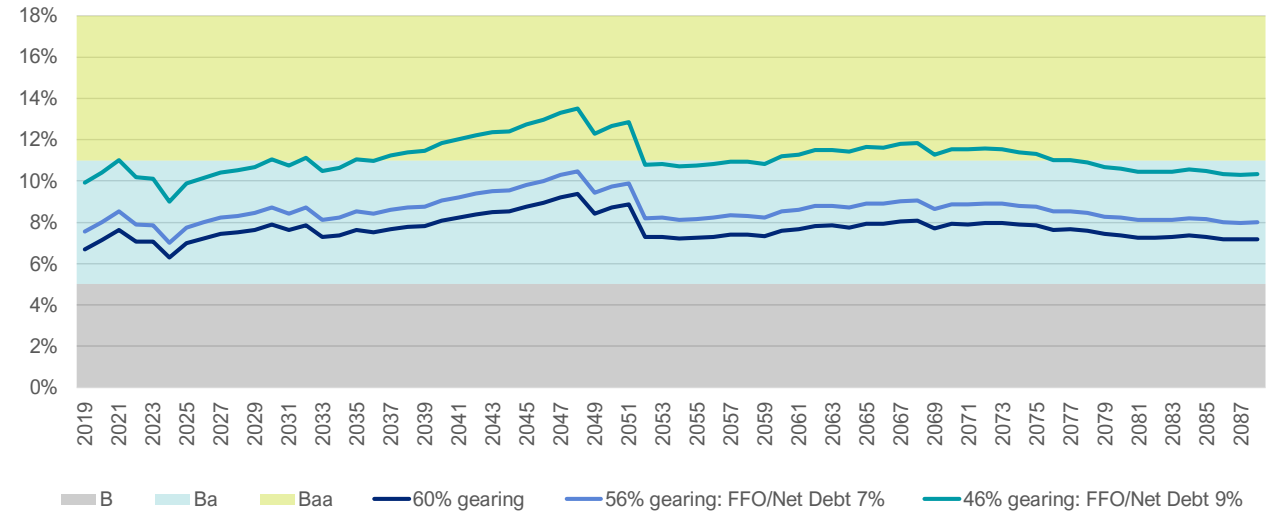


Figure 5.40: ElectraNet FFO Interest Cover – Non-ISP capex + Project EnergyConnect

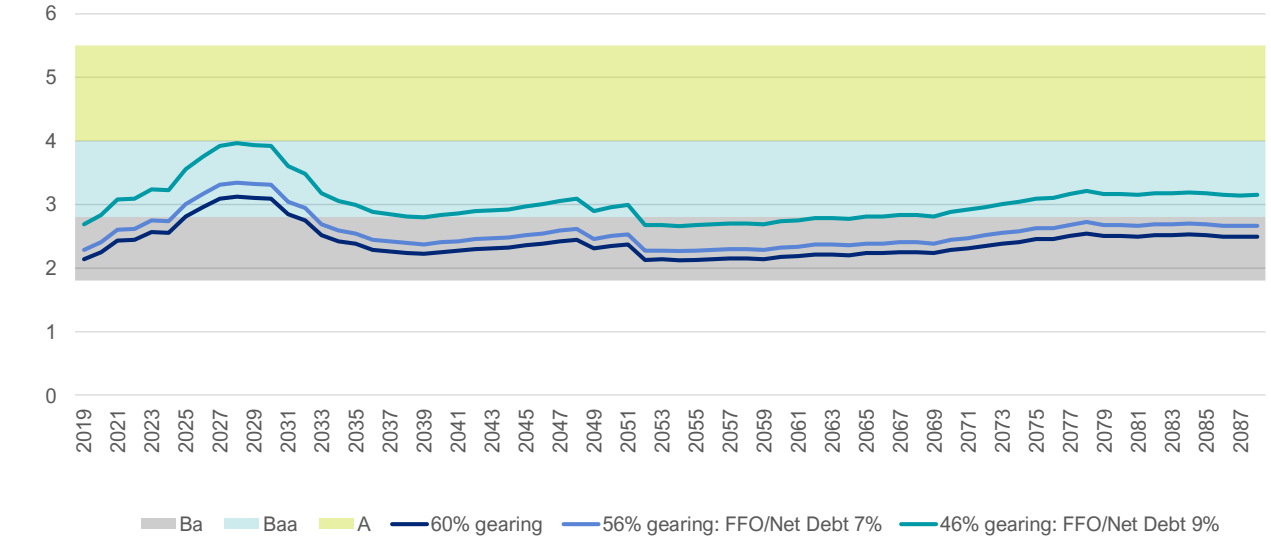
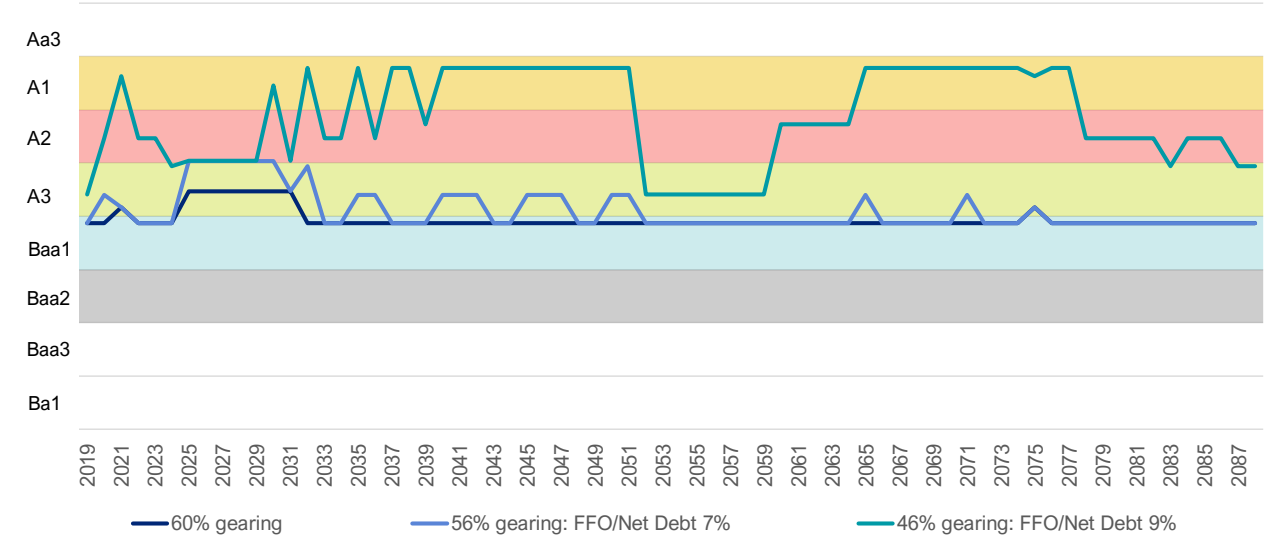


Figure 5.41: ElectraNet overall scorecard-indicated credit rating – Non-ISP capex + Project EnergyConnect



ElectraNet – Non-ISP capex + PEC – Rule change

Figure 5.42: ElectraNet FFO/Net Debt – Non-ISP capex + Project EnergyConnect

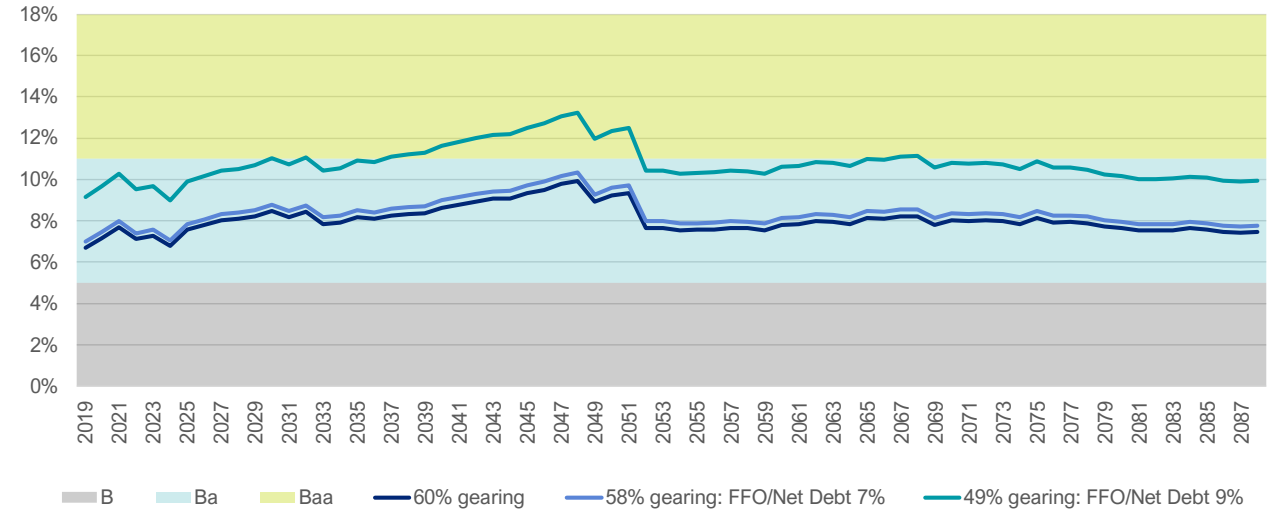


Figure 5.43: ElectraNet FFO Interest Cover – Non-ISP capex + Project EnergyConnect

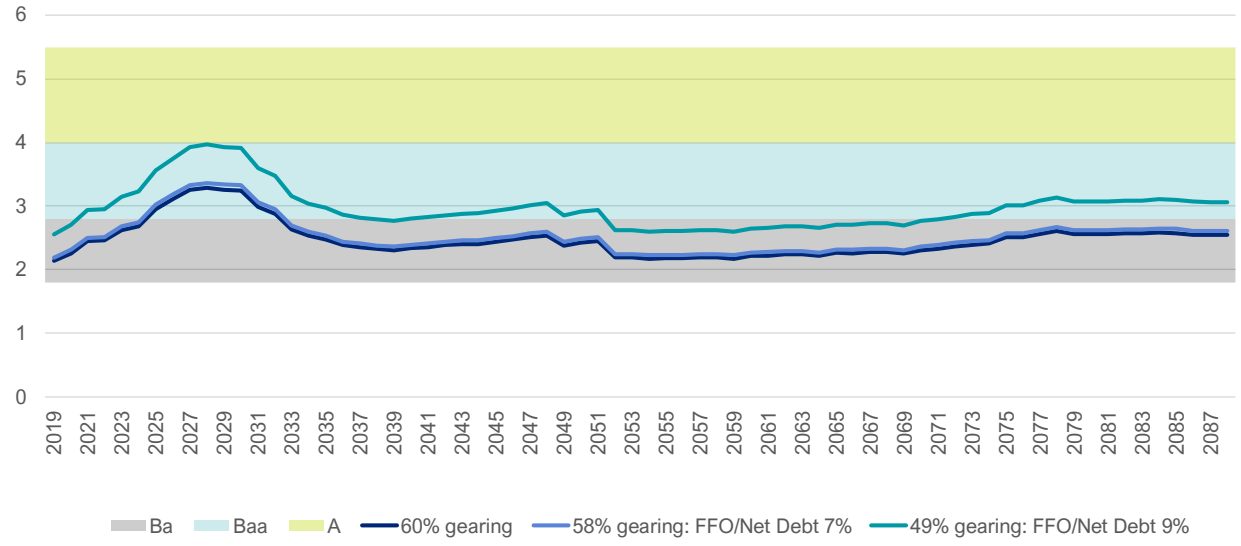
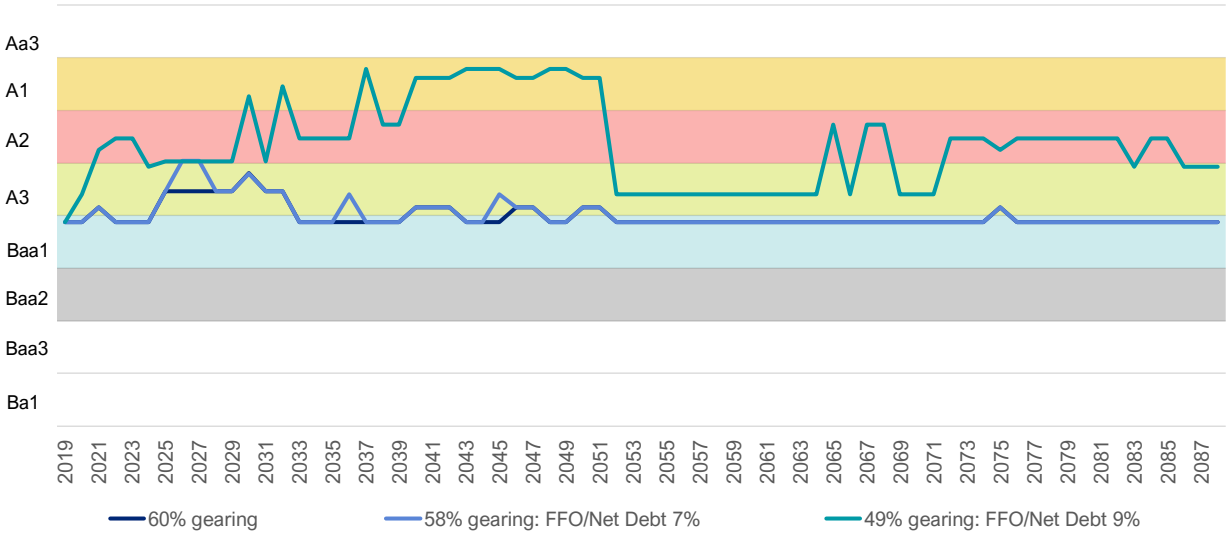


Figure 5.44: ElectraNet overall scorecard-indicated credit rating – Non-ISP capex + Project EnergyConnect



ElectraNet – Non-ISP capex + All actionable and future ISP – Base case

Figure 5.45: ElectraNet FFO/Net Debt – Non-ISP capex + All actionable and future ISP projects

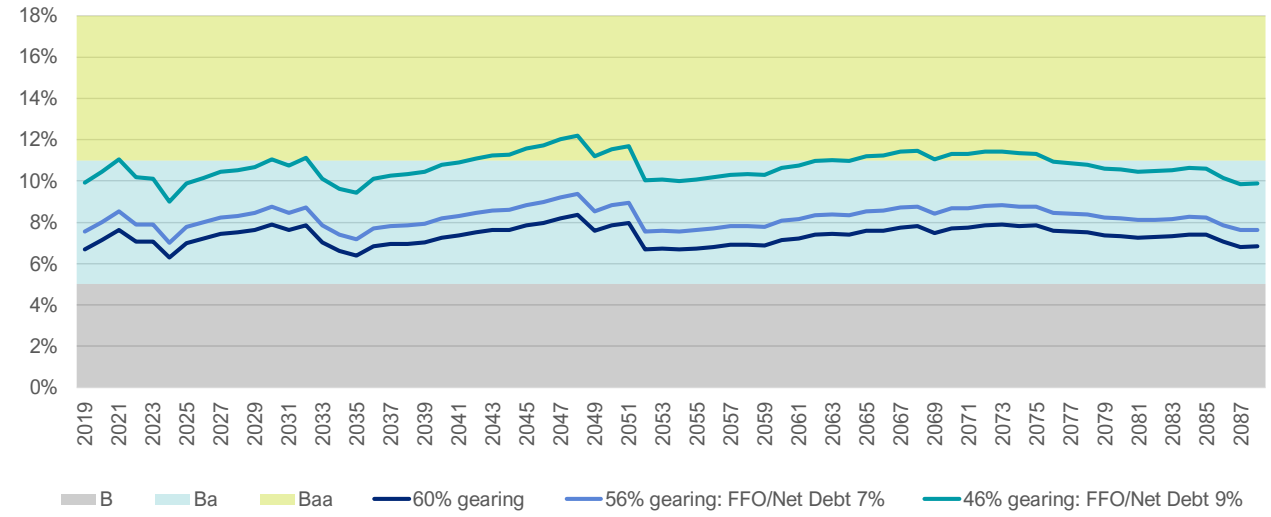


Figure 5.46: ElectraNet FFO Interest Cover – Non-ISP capex + All actionable and future ISP projects

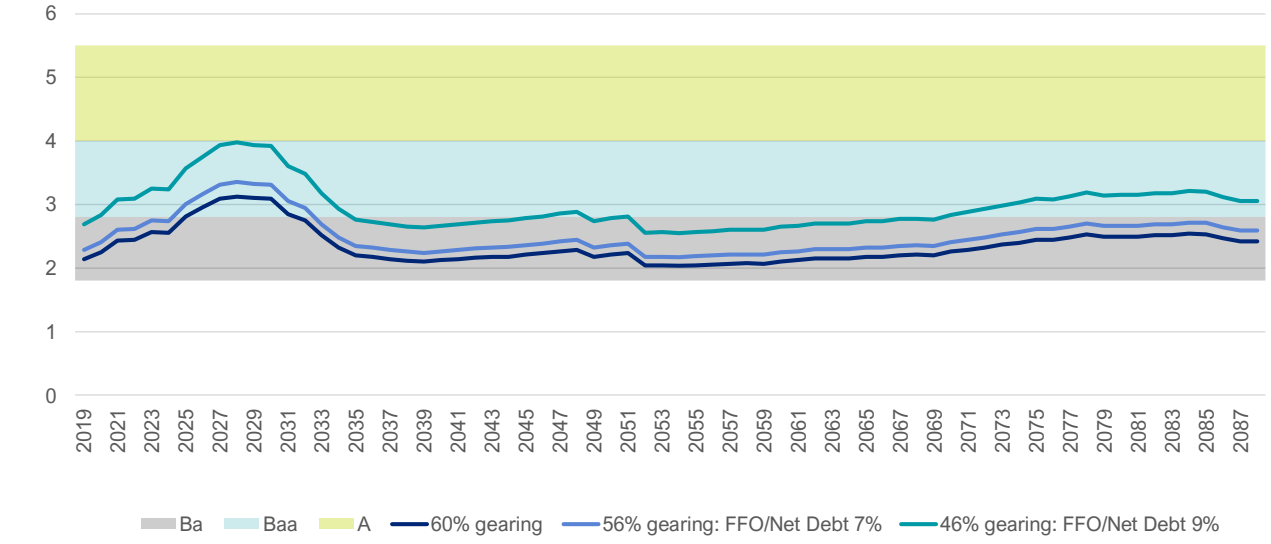
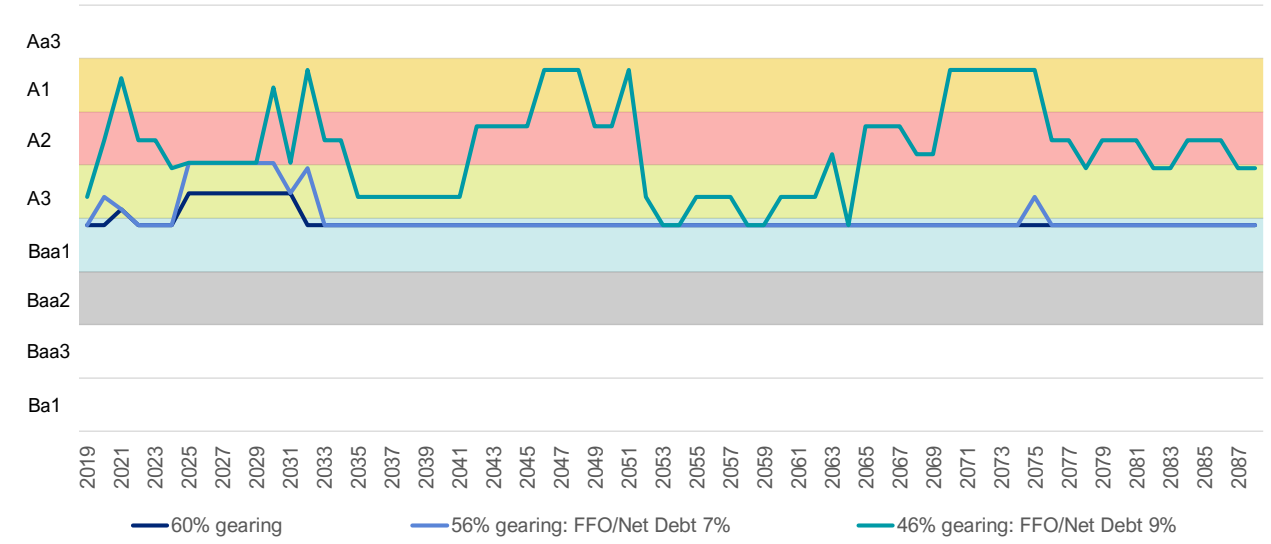


Figure 5.47: ElectraNet overall scorecard-indicated rating – Non-ISP capex + All actionable and future ISP projects



ElectraNet – Non-ISP capex + All actionable and future ISP – Rule change

Figure 5.48: ElectraNet FFO/Net Debt – Non-ISP capex + All actionable and future ISP projects

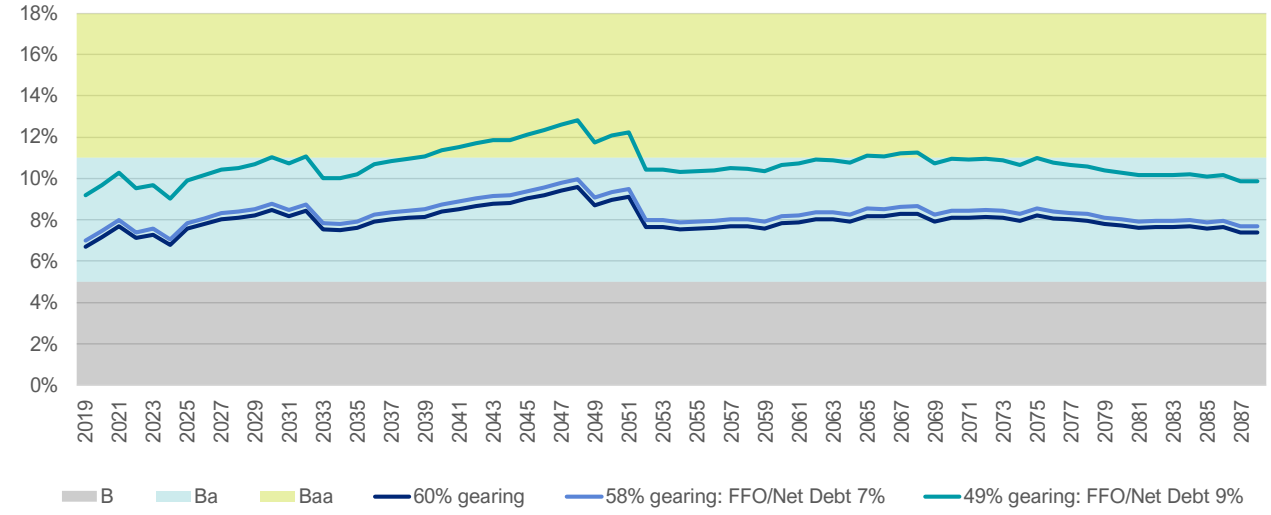


Figure 5.49: ElectraNet FFO Interest Cover – Non-ISP capex + All actionable and future ISP projects

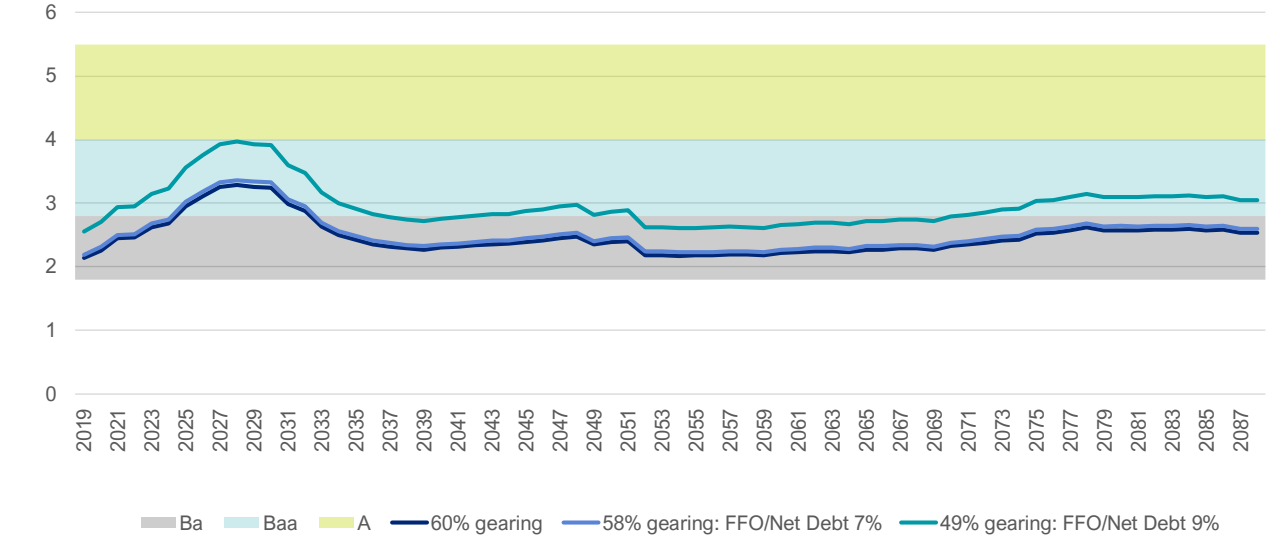
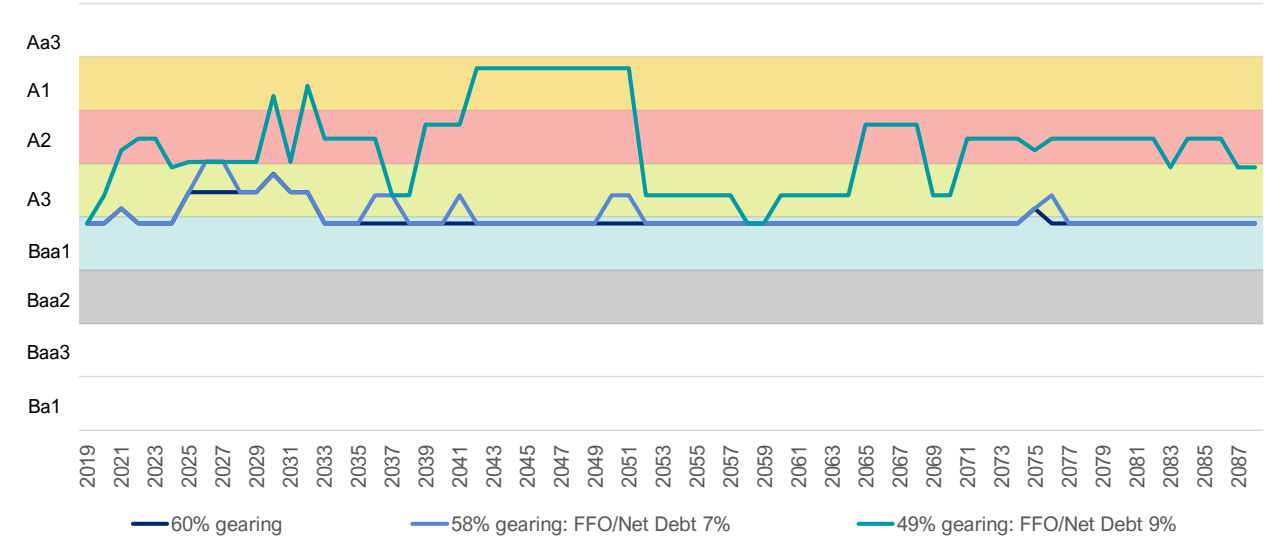


Figure 5.50: ElectraNet overall scorecard-indicated rating – Non-ISP capex + All actionable and future ISP projects



C.2.2. Alternative WACC scenarios

TransGrid – Non-ISP capex + PEC – Base case (WACC scenario 1)

Figure 5.51: TransGrid FFO/Net Debt – Non-ISP capex + Project EnergyConnect

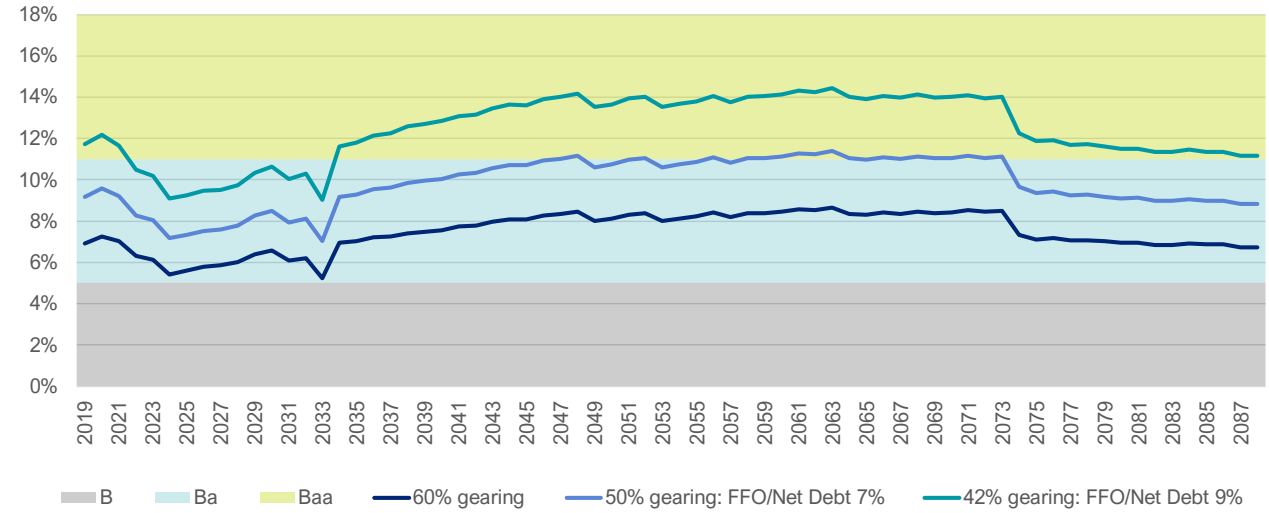


Figure 5.52: TransGrid FFO Interest Cover – Non-ISP capex + Project EnergyConnect

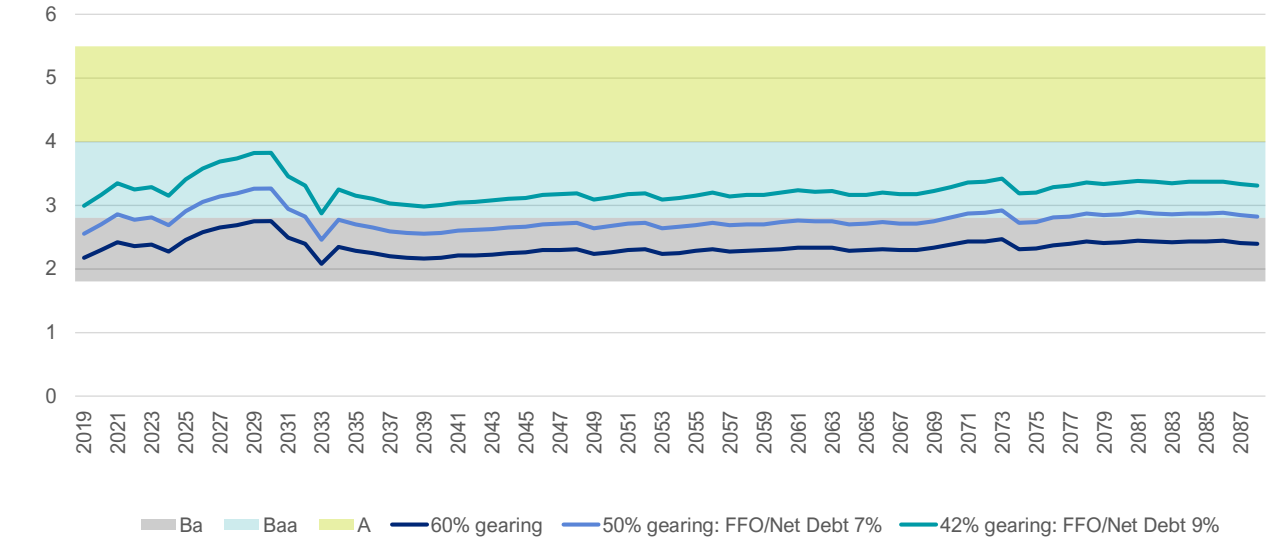
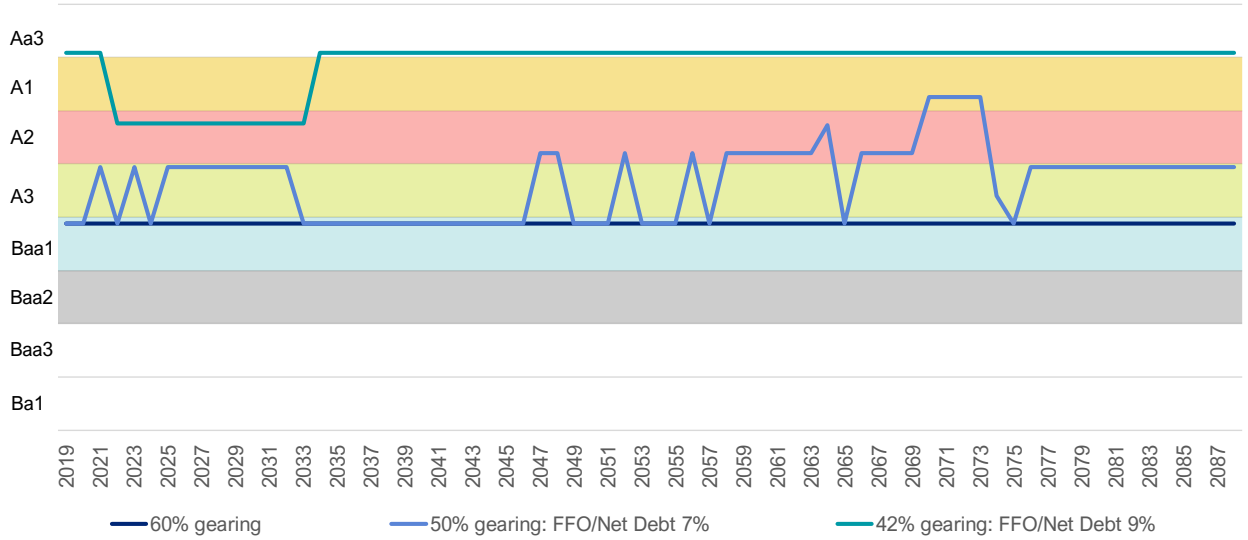


Figure 5.53: TransGrid overall scorecard-indicated credit rating – Non-ISP capex + Project EnergyConnect



TransGrid – Non-ISP capex + PEC – Rule change (WACC scenario 1)

Figure 5.54: TransGrid FFO/Net Debt – Non-ISP capex + Project EnergyConnect

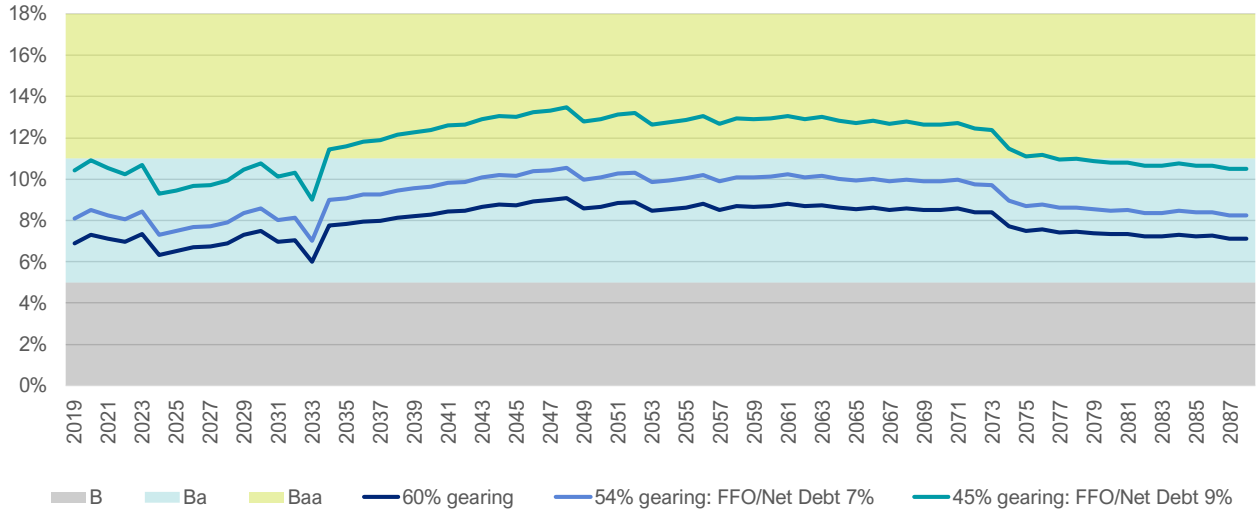


Figure 5.55: TransGrid FFO Interest Cover – Non-ISP capex + Project EnergyConnect

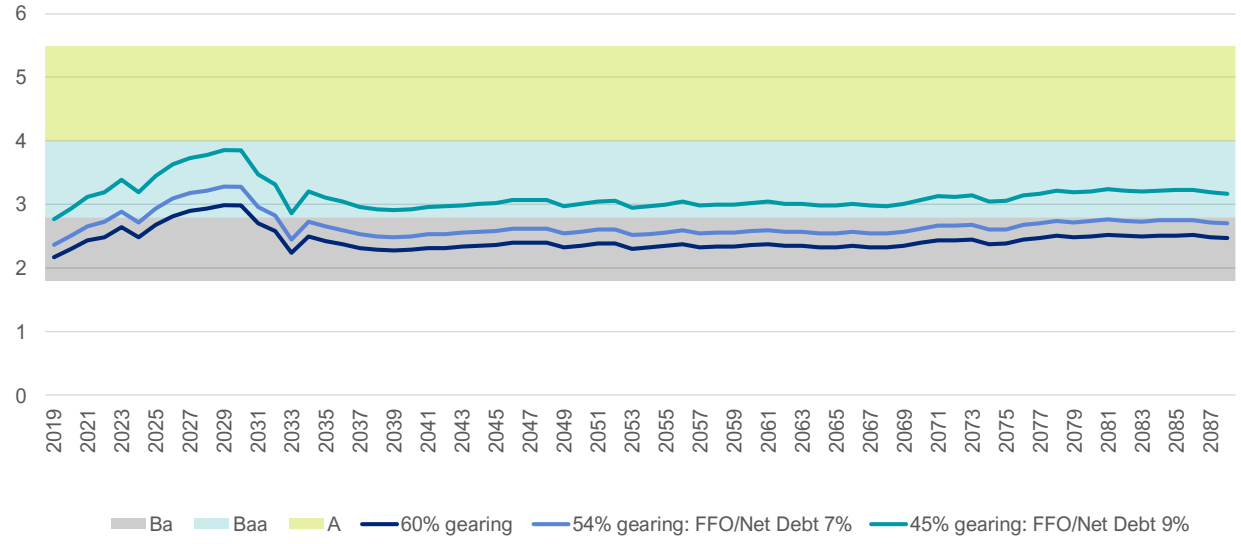
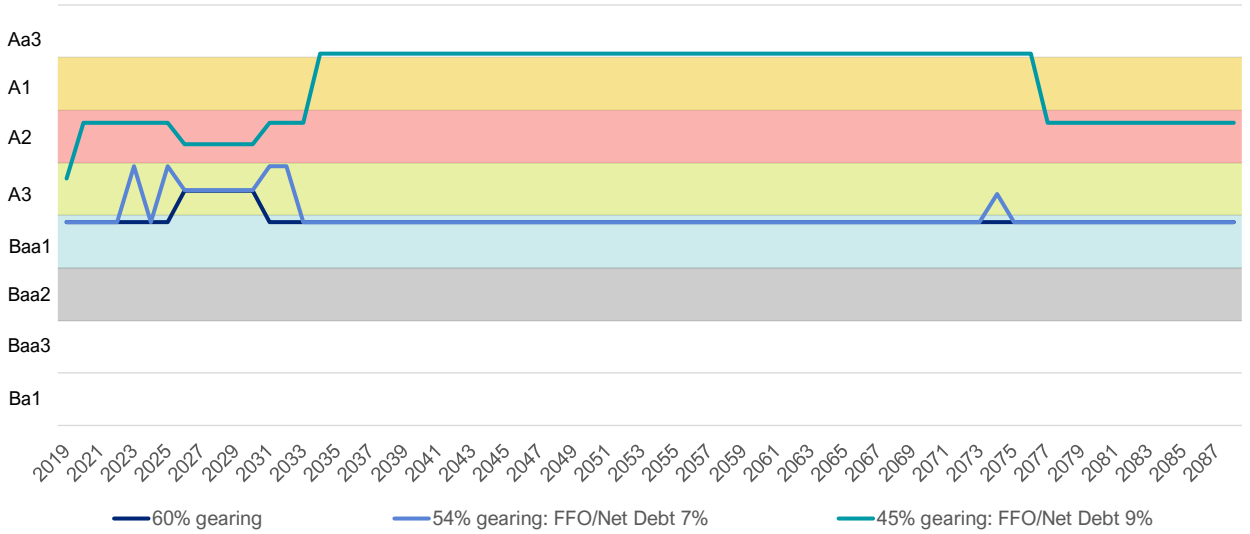


Figure 5.56: TransGrid overall scorecard-indicated credit rating – Non-ISP capex + Project EnergyConnect



TransGrid – Non-ISP capex + PEC – Base case (WACC scenario 2)

Figure 5.57: TransGrid FFO/Net Debt – Non-ISP capex + Project EnergyConnect

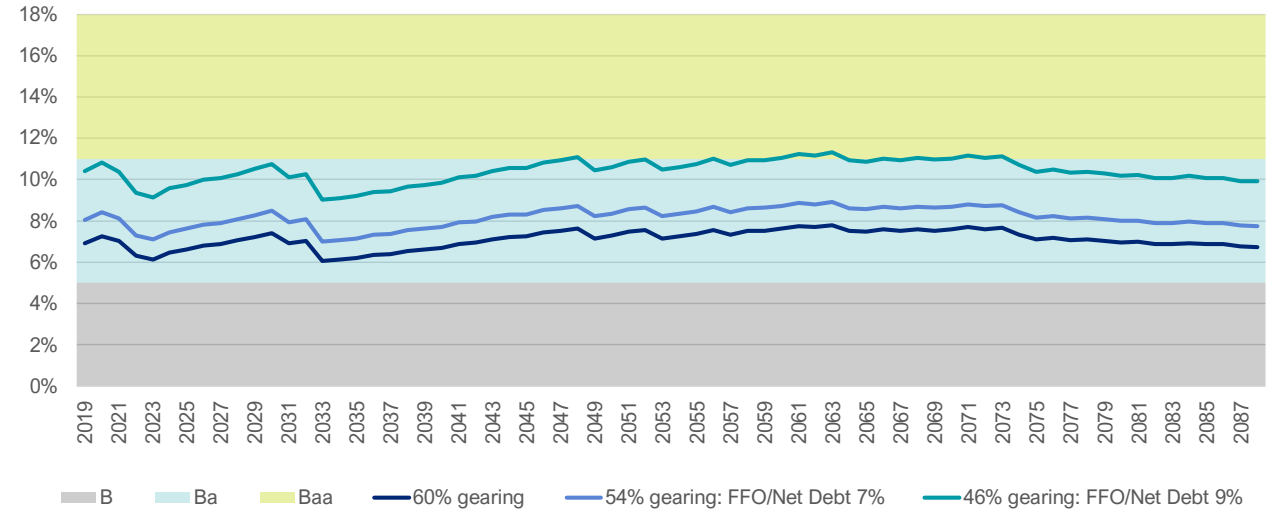


Figure 5.58: TransGrid FFO Interest Cover – Non-ISP capex + Project EnergyConnect

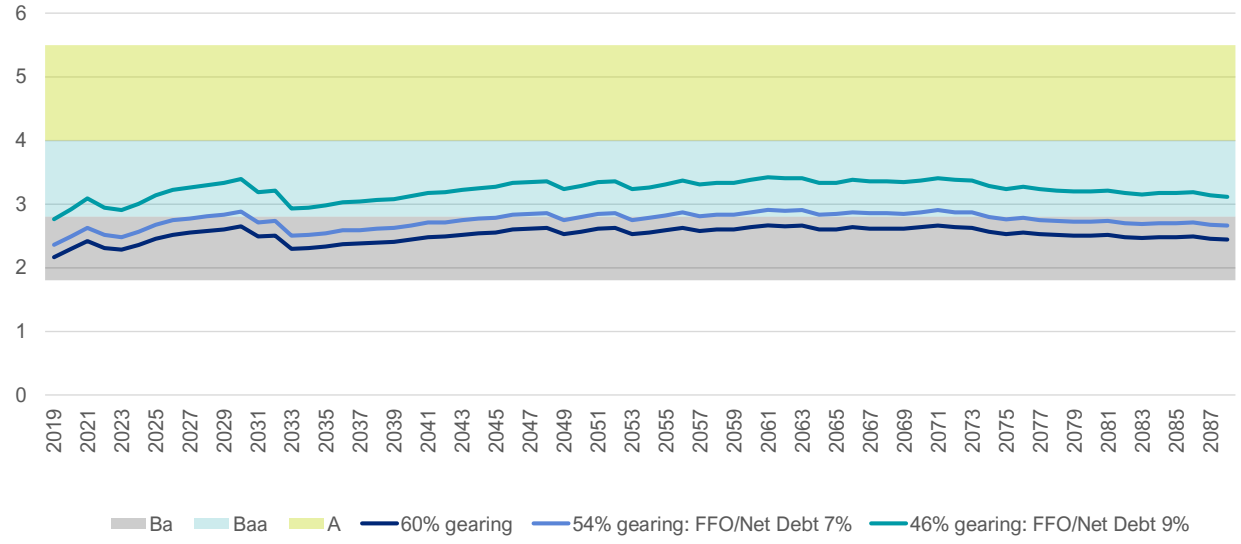
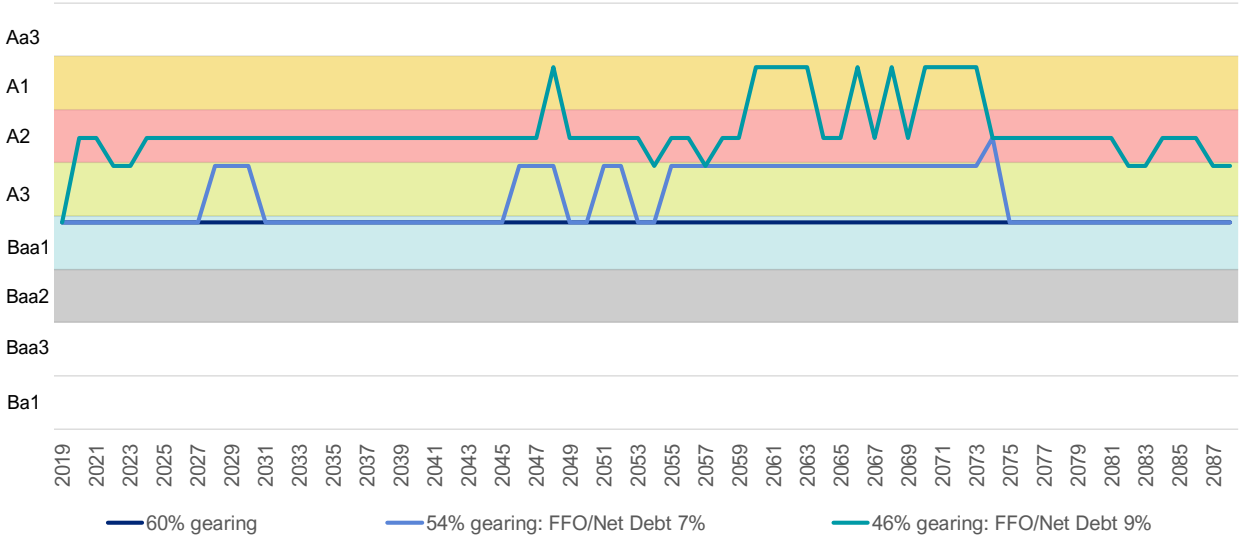


Figure 5.59: TransGrid overall scorecard-indicated credit rating – Non-ISP capex + Project EnergyConnect



TransGrid – Non-ISP capex + PEC – Rule change (WACC scenario 2)

Figure 5.60: TransGrid FFO/Net Debt – Non-ISP capex + Project EnergyConnect

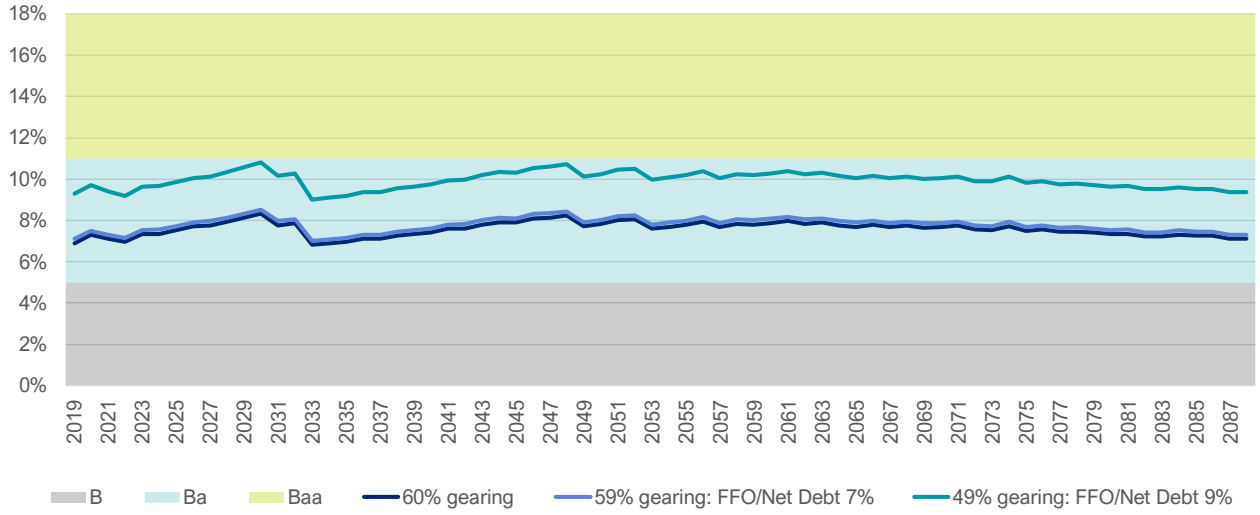


Figure 5.61: TransGrid FFO Interest Cover – Non-ISP capex + Project EnergyConnect

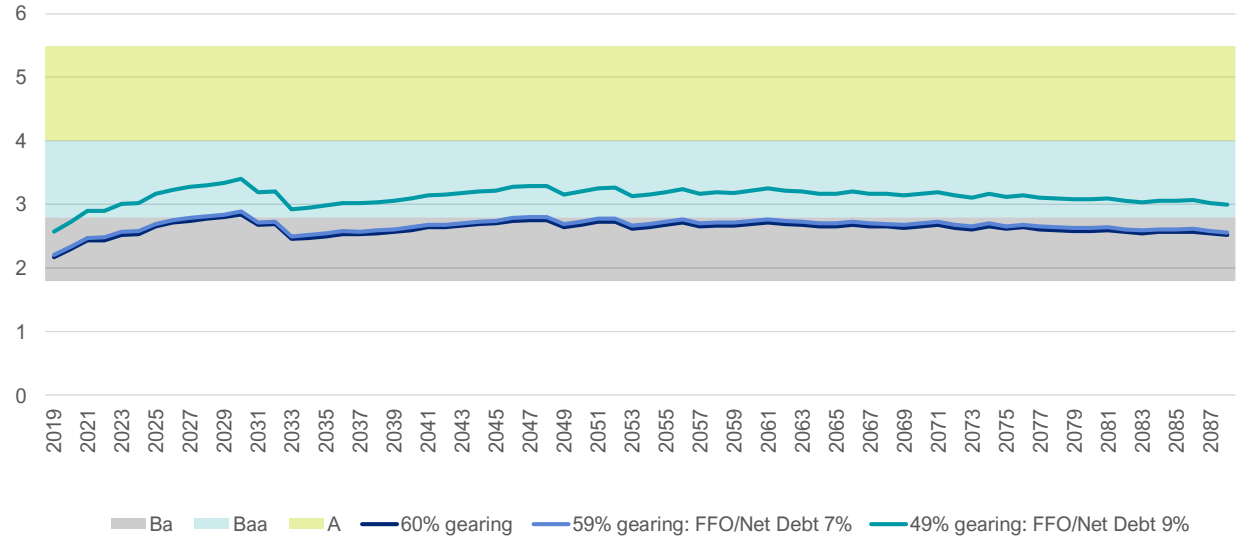
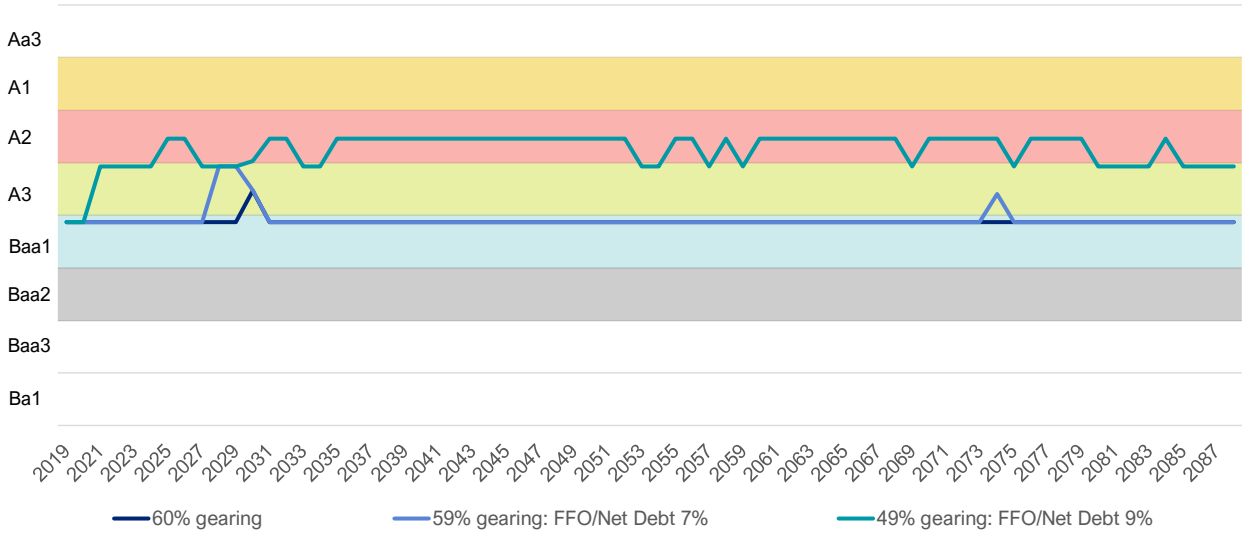


Figure 5.62: TransGrid overall scorecard-indicated credit rating – Non-ISP capex + Project EnergyConnect



ElectraNet – Non-ISP capex + PEC – Base case (WACC scenario 1)

Figure 5.63: ElectraNet FFO/Net Debt – Non-ISP capex + Project EnergyConnect

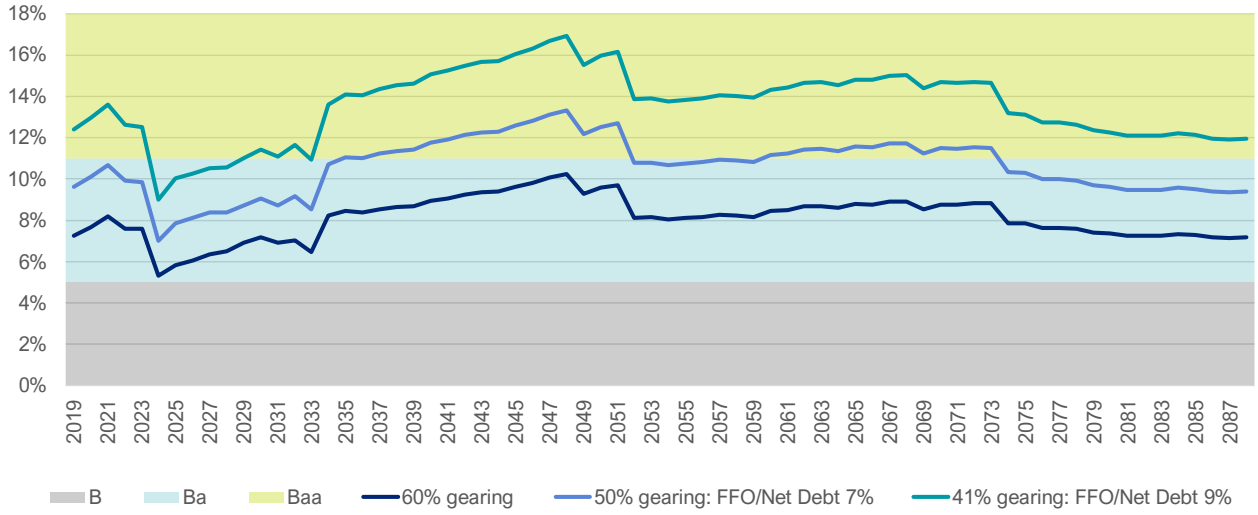


Figure 5.64: ElectraNet FFO Interest Cover – Non-ISP capex + Project EnergyConnect

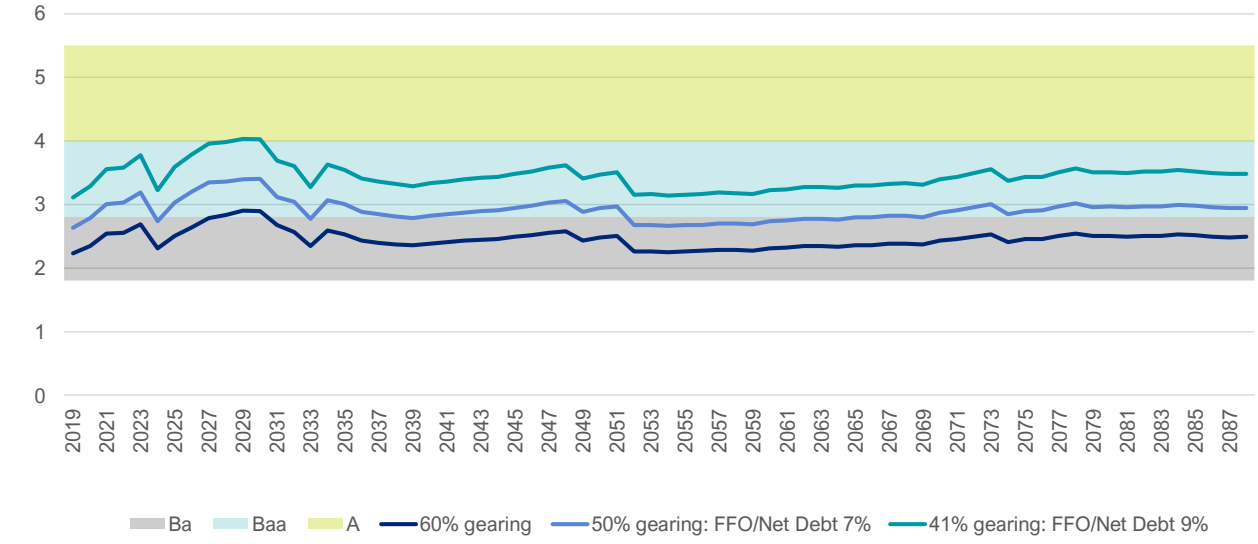
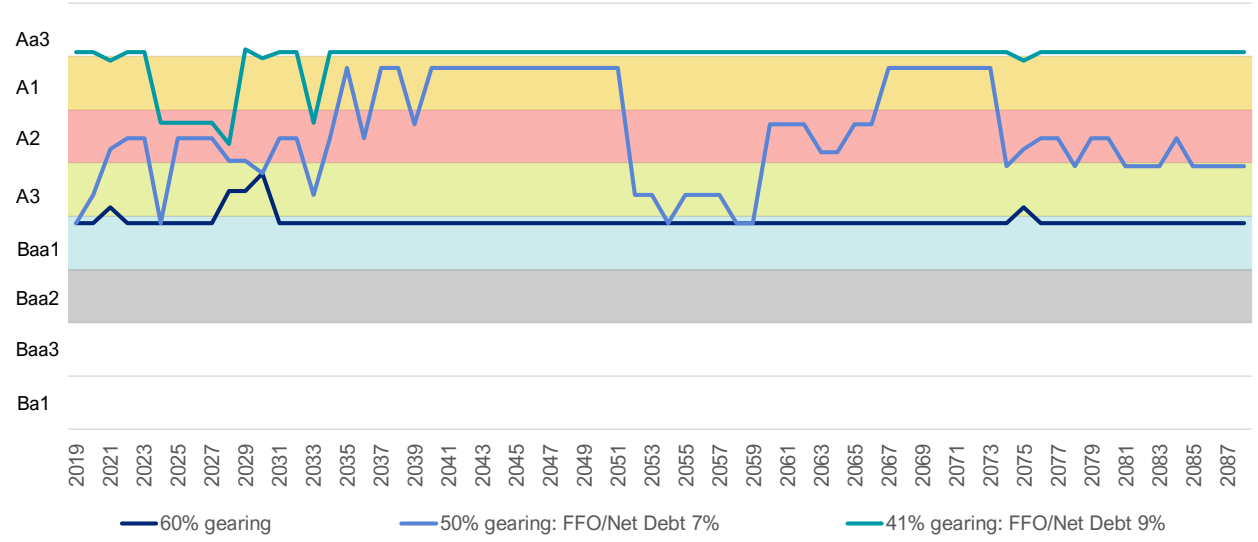


Figure 5.65: ElectraNet overall scorecard-indicated credit rating – Non-ISP capex + Project EnergyConnect



ElectraNet – Non-ISP capex + PEC – Rule change (WACC scenario 1)

Figure 5.66: ElectraNet FFO/Net Debt – Non-ISP capex + Project EnergyConnect

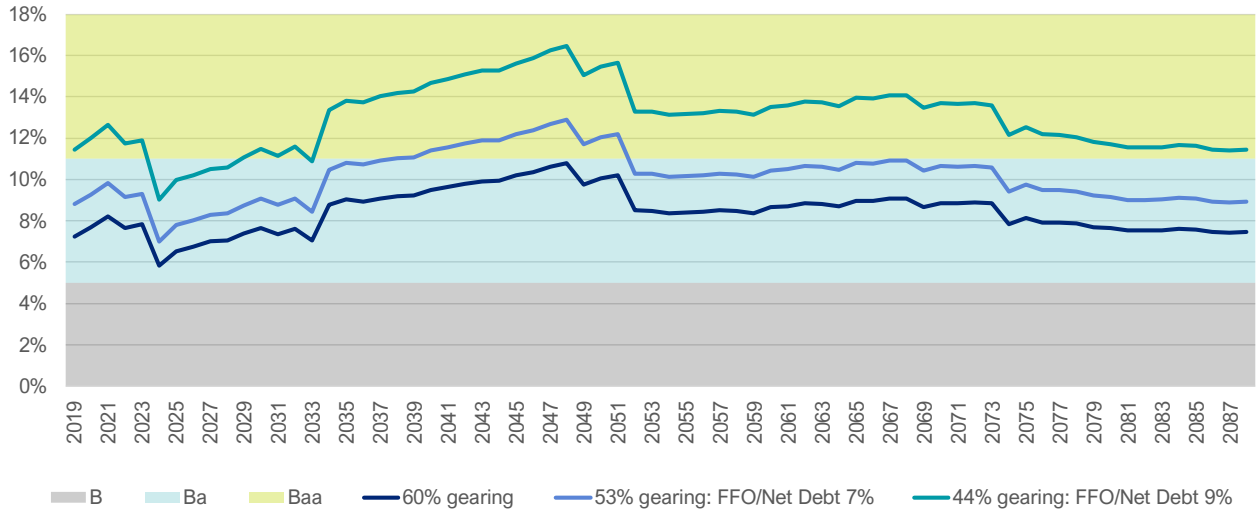


Figure 5.67: ElectraNet FFO Interest Cover – Non-ISP capex + Project EnergyConnect

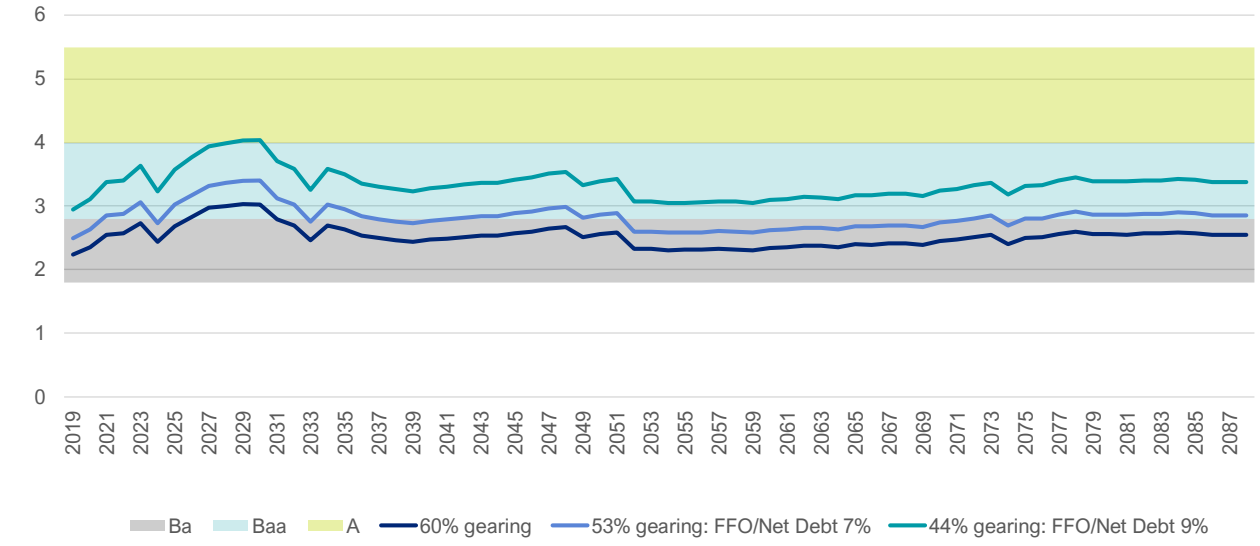
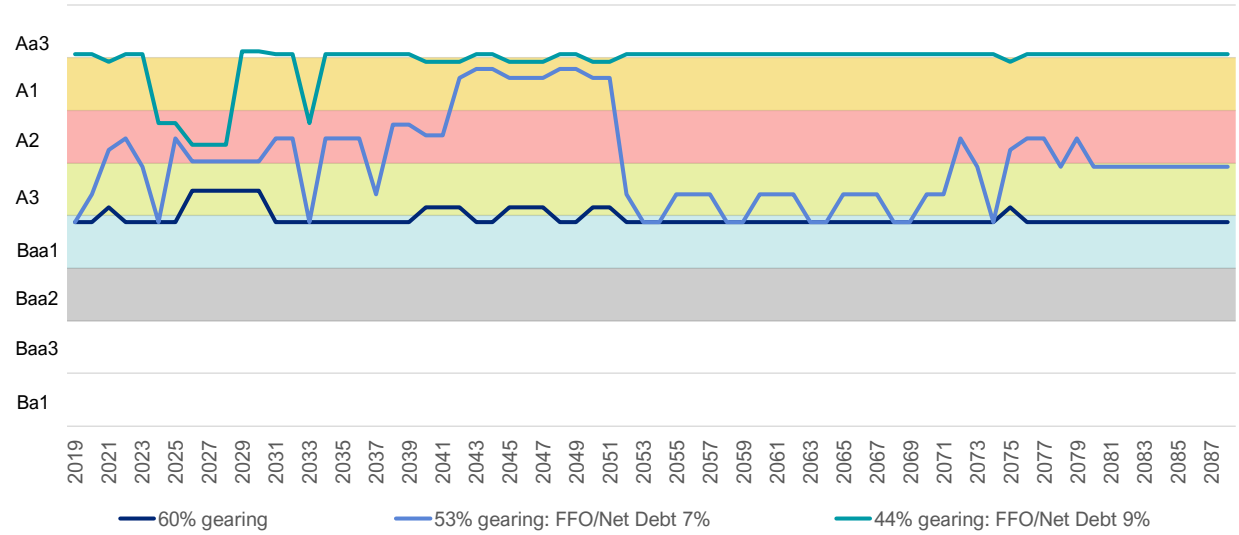


Figure 5.68: ElectraNet overall scorecard-indicated credit rating – Non-ISP capex + Project EnergyConnect



ElectraNet – Non-ISP capex + PEC – Base case (WACC scenario 2)

Figure 5.69: ElectraNet FFO/Net Debt – Non-ISP capex + Project EnergyConnect

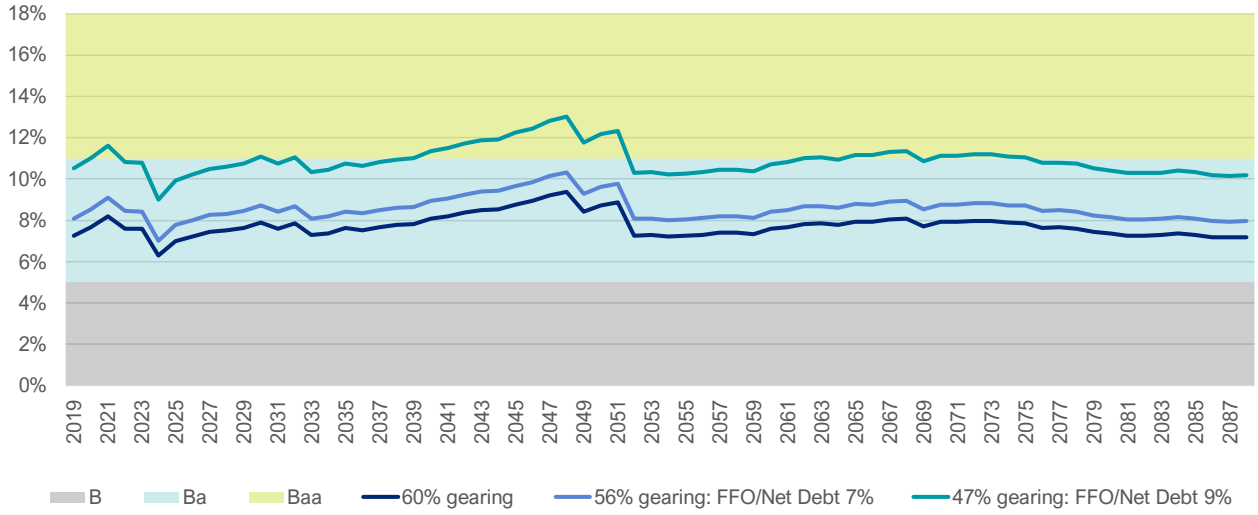


Figure 5.70: ElectraNet FFO Interest Cover – Non-ISP capex + Project EnergyConnect

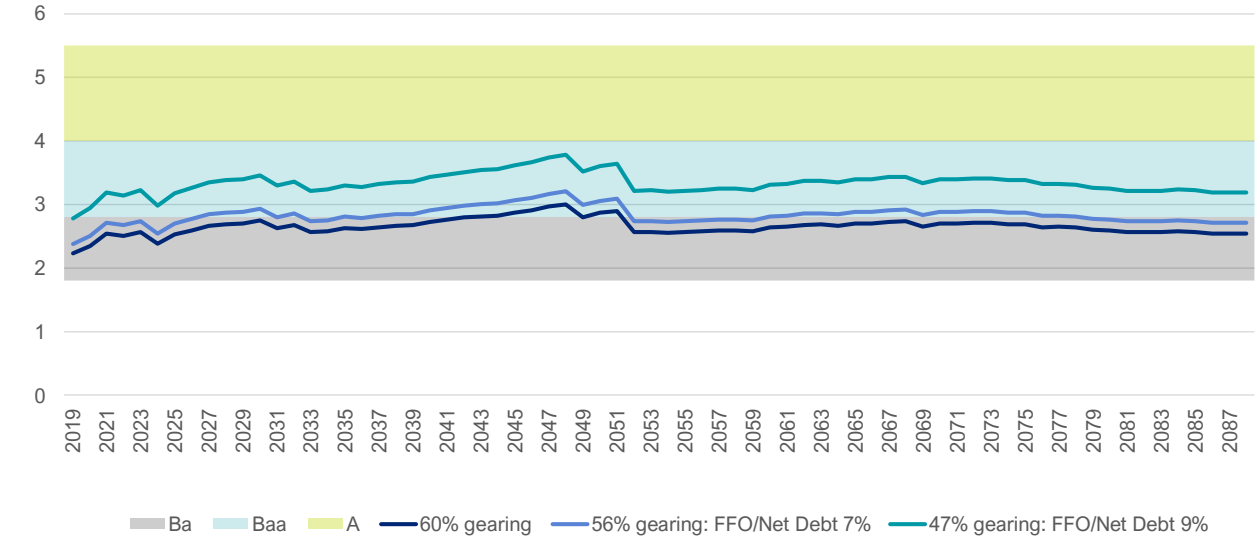
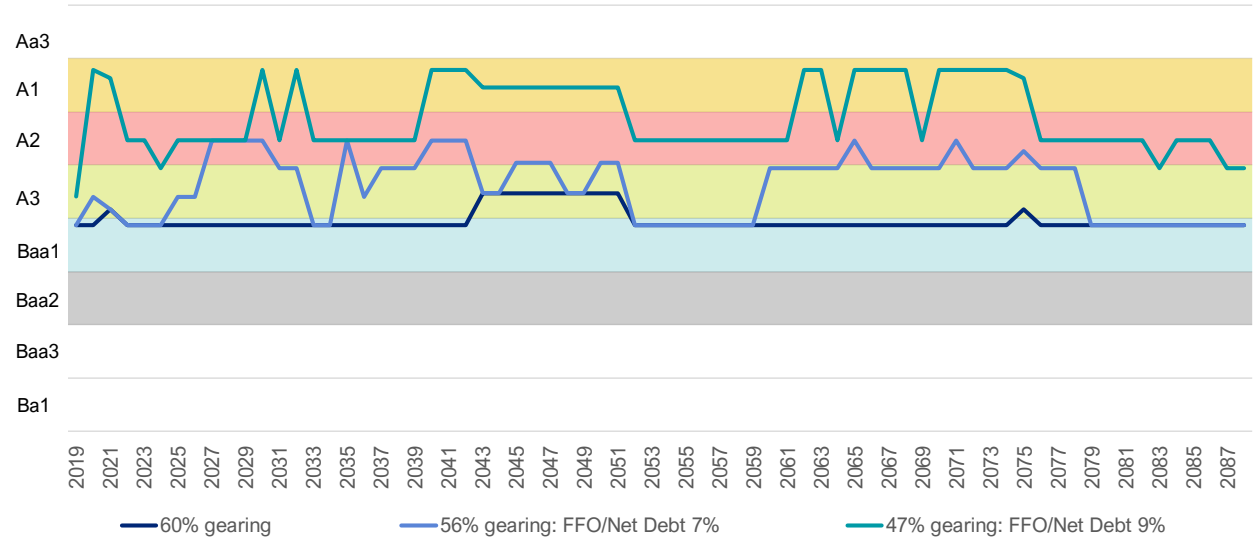


Figure 5.71: ElectraNet overall scorecard-indicated credit rating – Non-ISP capex + Project EnergyConnect



ElectraNet – Non-ISP capex + PEC – Rule change (WACC scenario 2)

Figure 5.72: ElectraNet FFO/Net Debt – Non-ISP capex + Project EnergyConnect

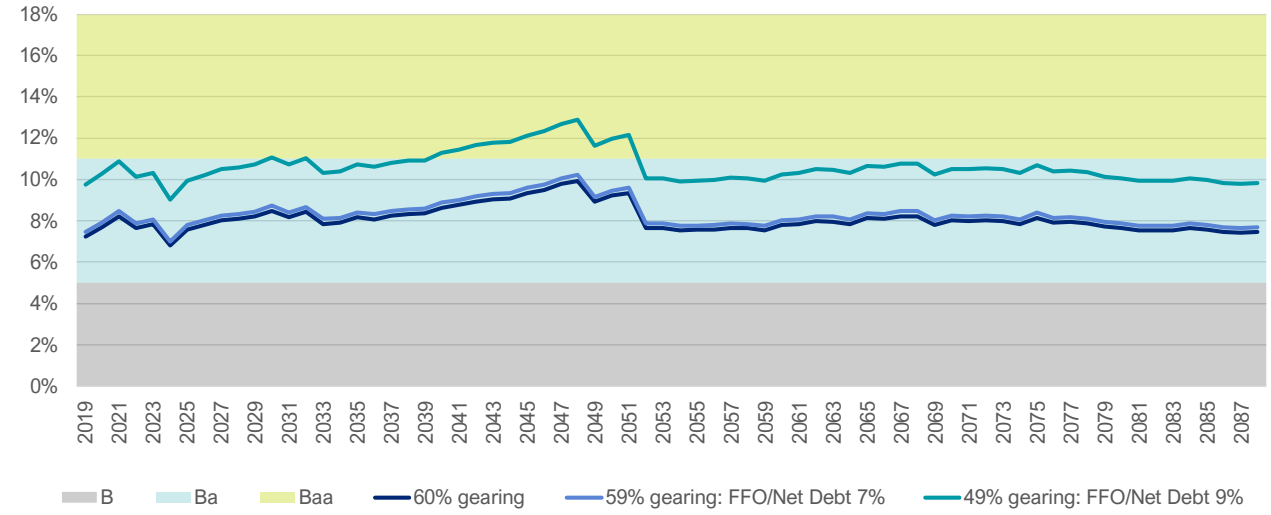


Figure 5.73: ElectraNet FFO Interest Cover – Non-ISP capex + Project EnergyConnect

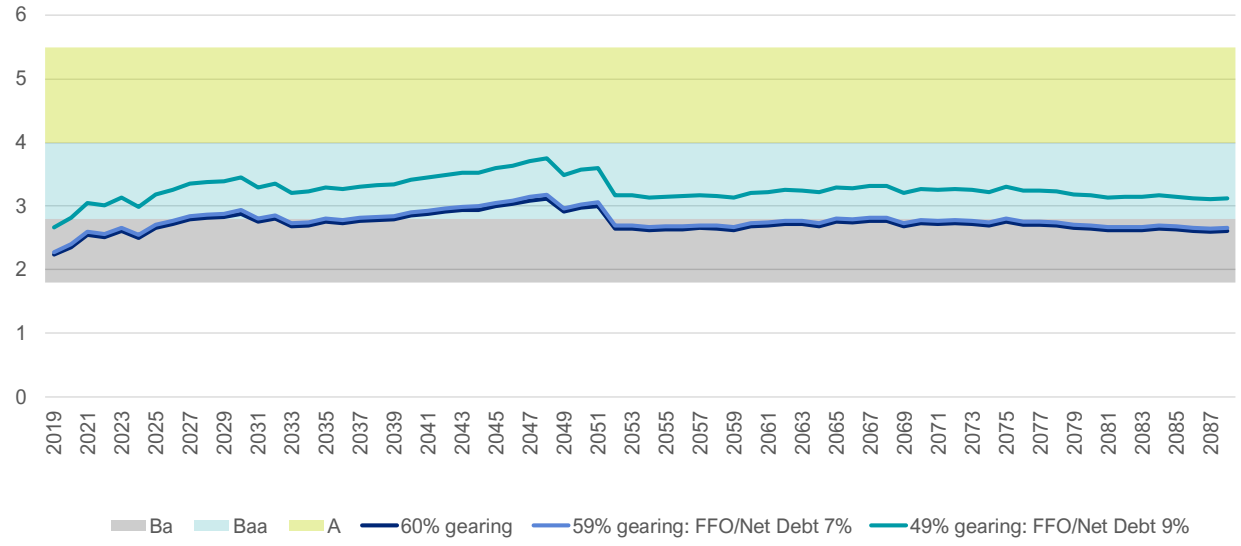
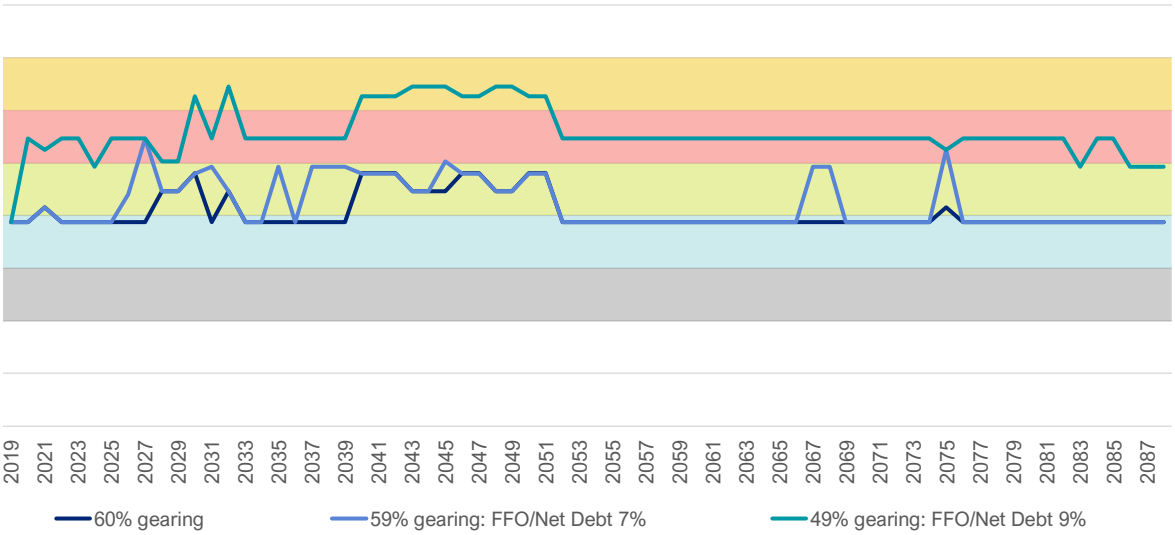


Figure 5.74: ElectraNet overall scorecard-indicated credit rating – Non-ISP capex + Project EnergyConnect



C.2.3. Alternative inflation scenarios[97]

TransGrid – Non-ISP capex + PEC – Base case (2.10% inflation)

Figure 5.75: TransGrid FFO/Net Debt – Non-ISP capex + Project EnergyConnect

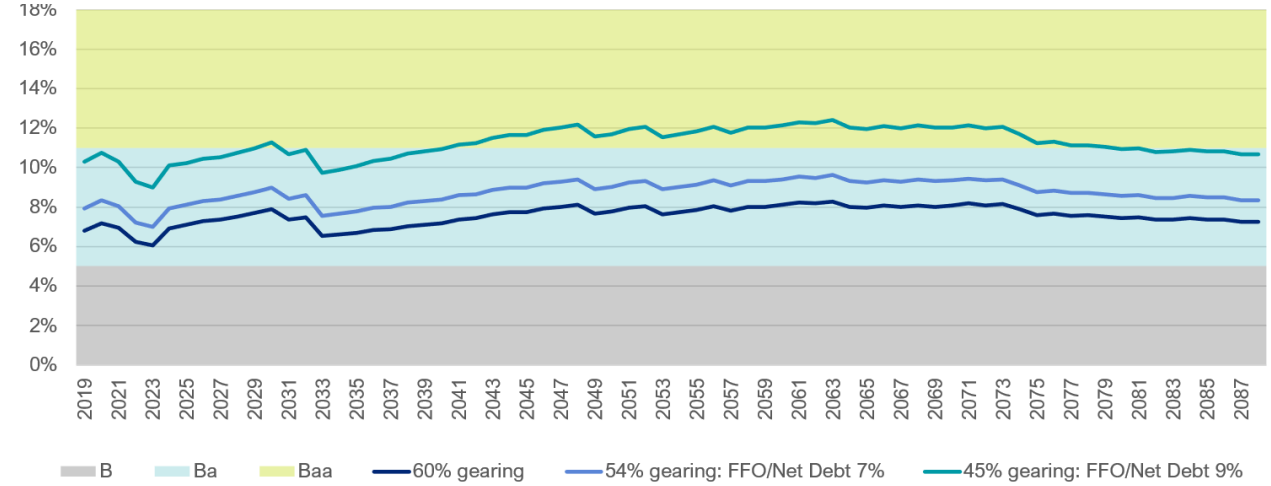


Figure 5.76: TransGrid FFO Interest Cover – Non-ISP capex + Project EnergyConnect

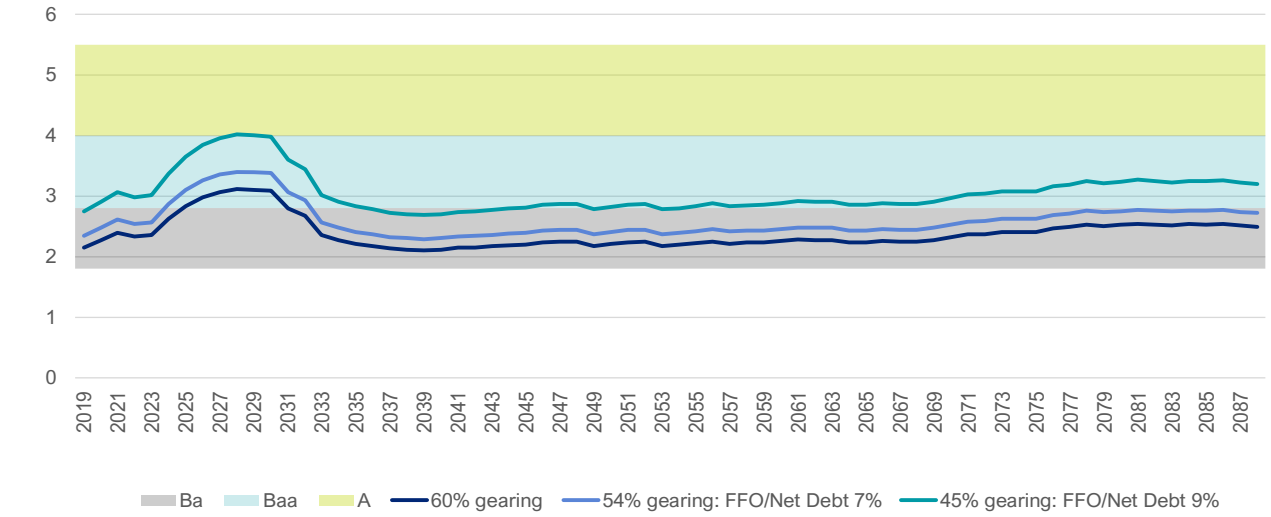
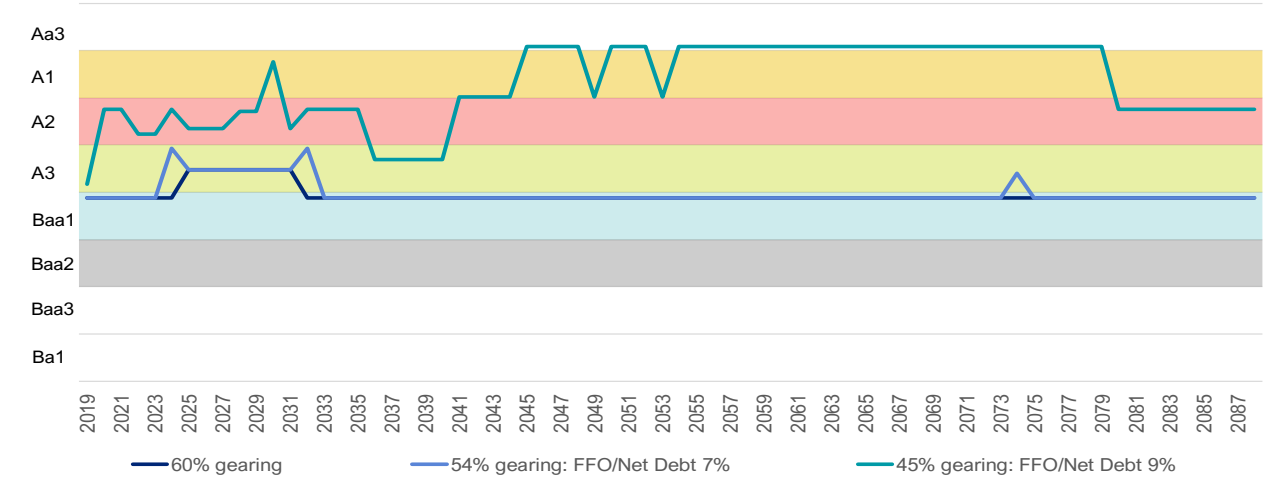


Figure 5.77: TransGrid overall scorecard-indicated credit rating – Non-ISP capex + Project EnergyConnect



[97] All analyses presented in this section are based on TransGrid's WACC assumptions and assume that actual inflation coincides with expected inflation.

TransGrid – Non-ISP capex + PEC – Rule change (2.10% inflation)

Figure 5.78: TransGrid FFO/Net Debt – Non-ISP capex + Project EnergyConnect

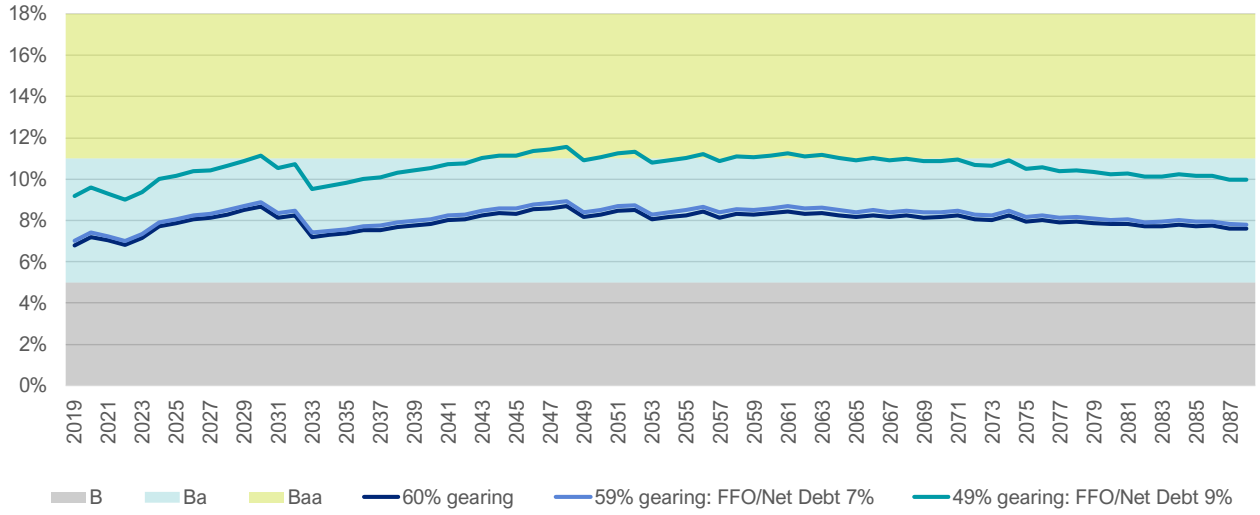


Figure 5.79: TransGrid FFO Interest Cover – Non-ISP capex + Project EnergyConnect

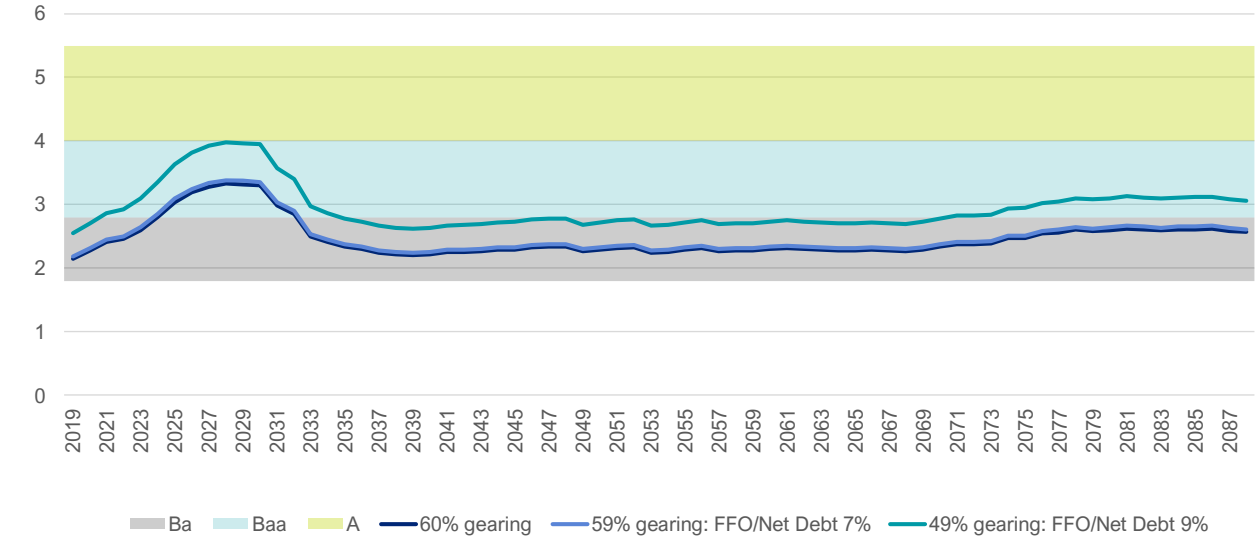
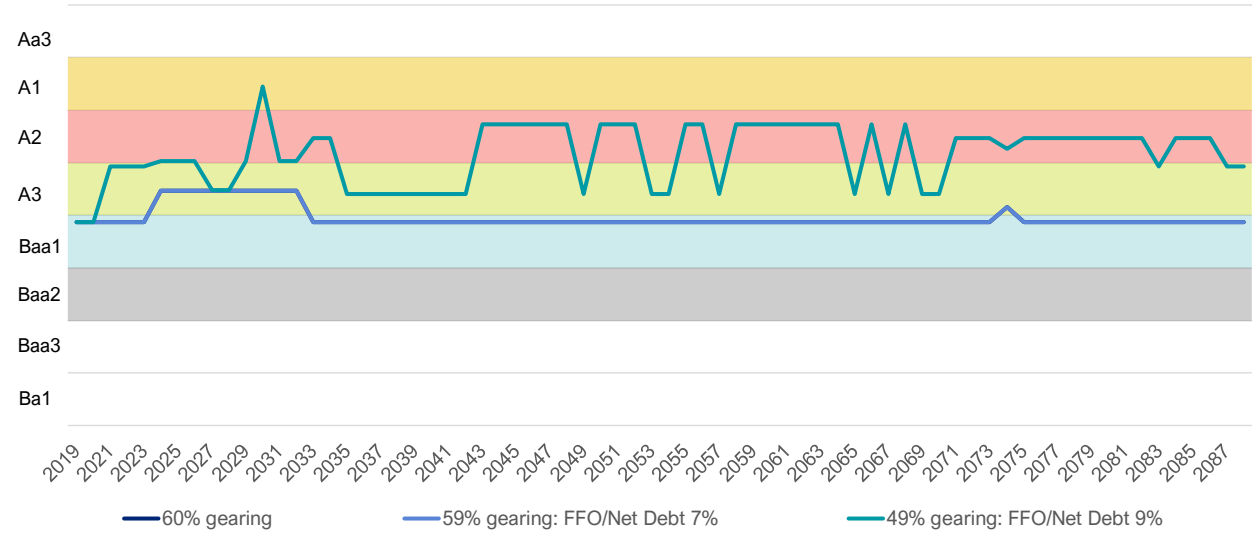


Figure 5.80: TransGrid overall scorecard-indicated credit rating – Non-ISP capex + Project EnergyConnect



TransGrid – Non-ISP capex + PEC – Base case (2.80% inflation)

Figure 5.81: TransGrid FFO/Net Debt – Non-ISP capex + Project EnergyConnect

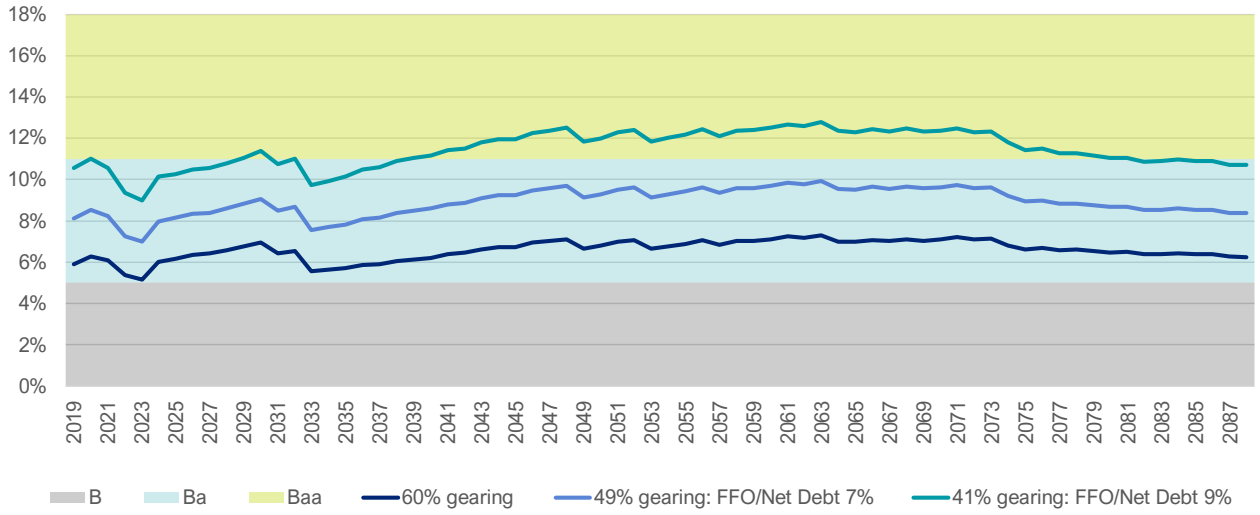


Figure 5.82: TransGrid FFO Interest Cover – Non-ISP capex + Project EnergyConnect

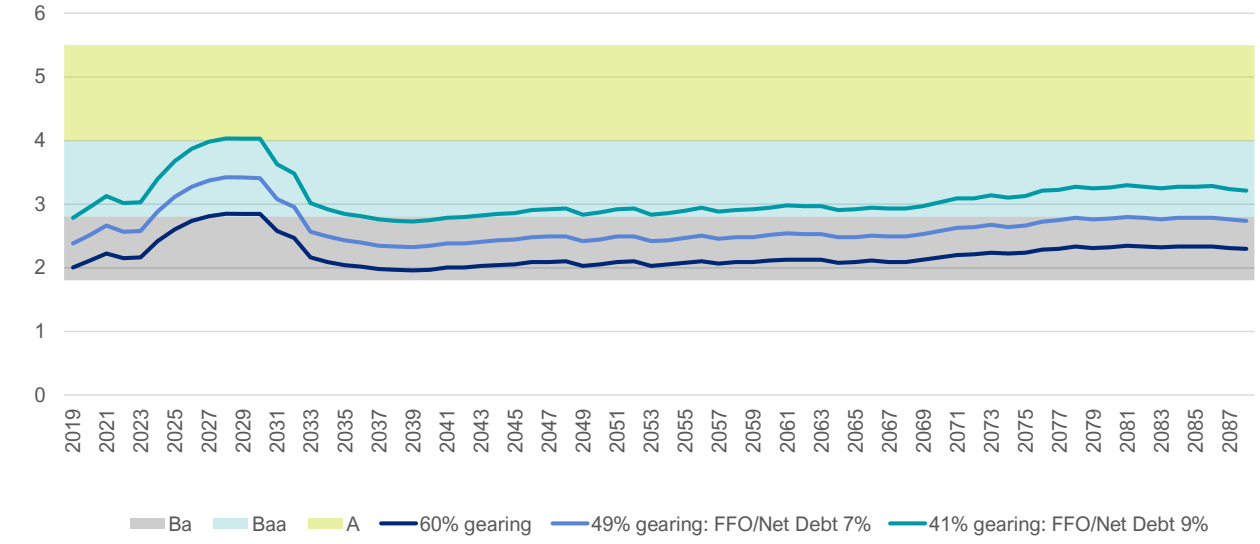
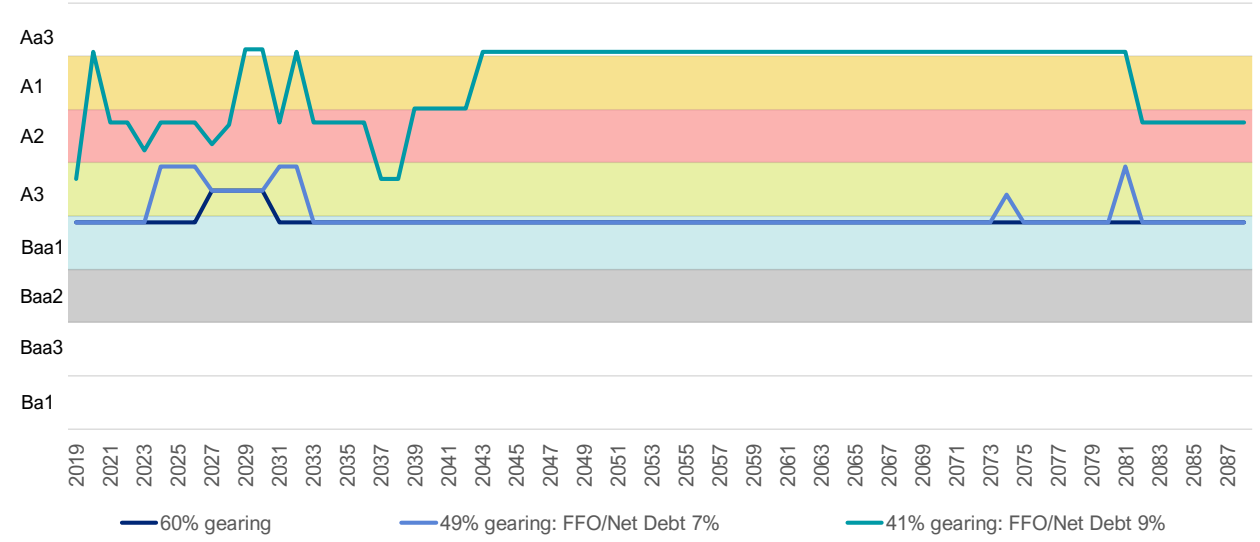


Figure 5.83: TransGrid overall scorecard-indicated credit rating – Non-ISP capex + Project EnergyConnect



TransGrid – Non-ISP capex + PEC – Rule change (2.80% inflation)

Figure 5.84: TransGrid FFO/Net Debt – Non-ISP capex + Project EnergyConnect

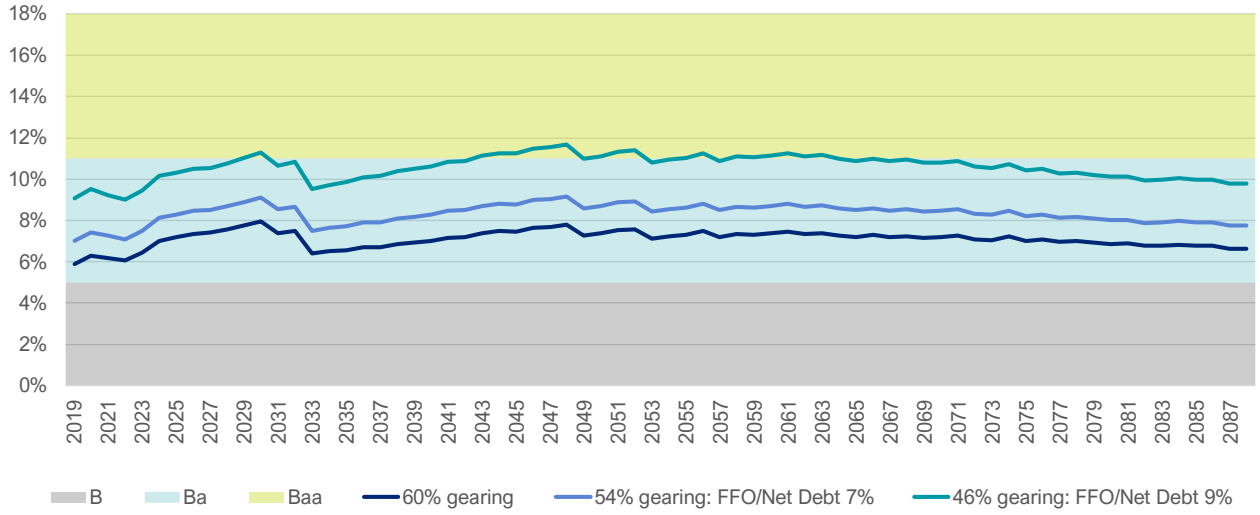


Figure 5.85: TransGrid FFO Interest Cover – Non-ISP capex + Project EnergyConnect

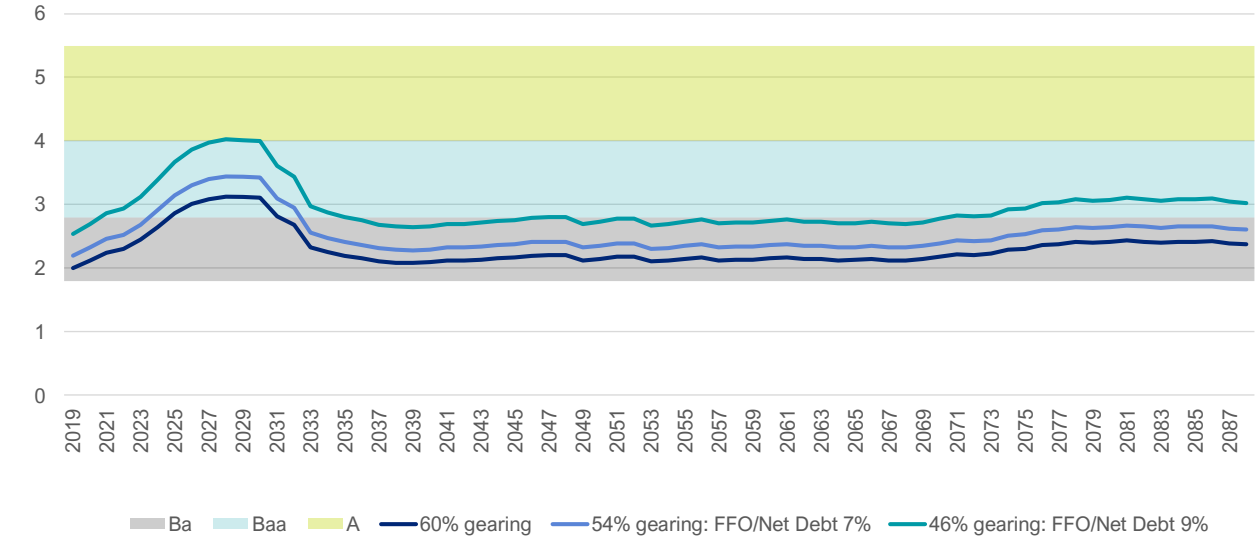
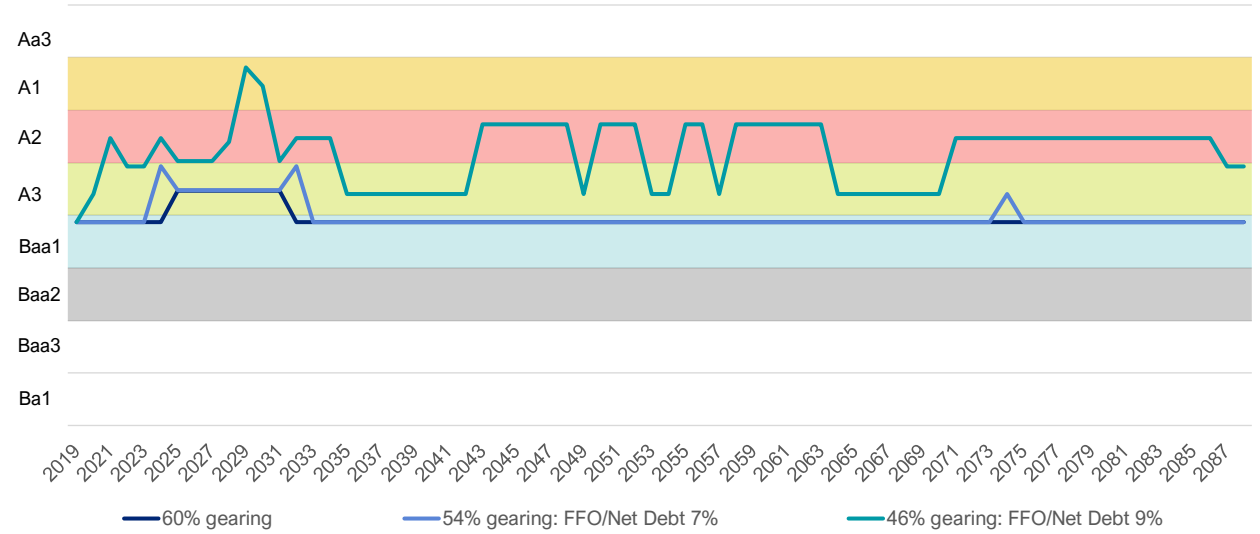


Figure 5.86: TransGrid overall scorecard-indicated credit rating – Non-ISP capex + Project EnergyConnect



ElectraNet – Non-ISP capex + PEC – Base case (2.10% inflation)

Figure 5.87: ElectraNet FFO/Net Debt – Non-ISP capex + Project EnergyConnect

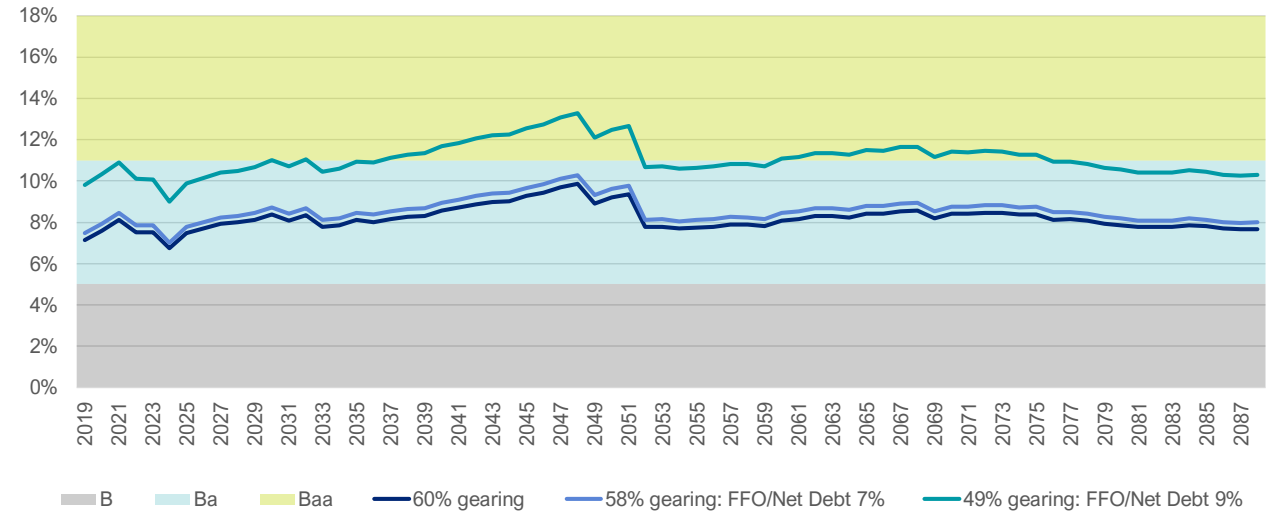


Figure 5.88: ElectraNet FFO Interest Cover – Non-ISP capex + Project EnergyConnect

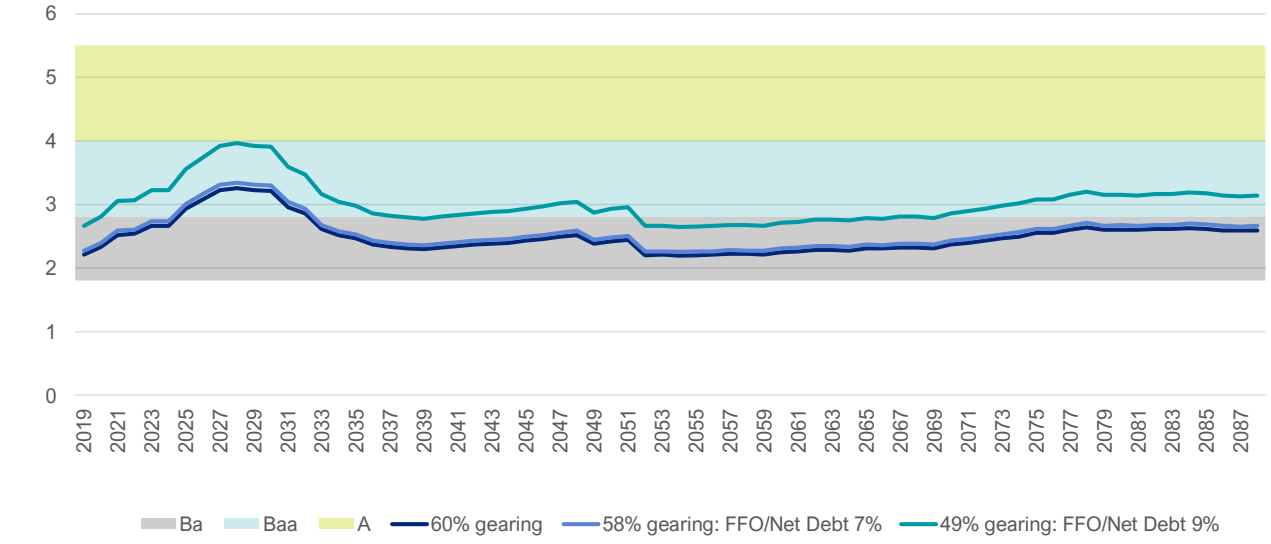
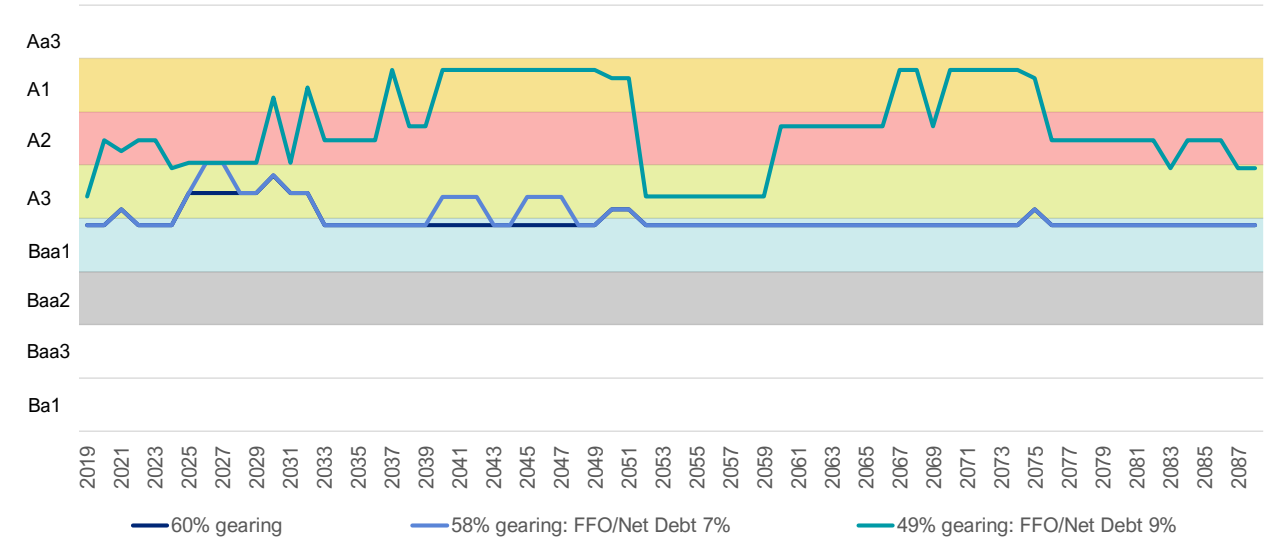


Figure 5.89: ElectraNet overall scorecard-indicated credit rating – Non-ISP capex + Project EnergyConnect



ElectraNet – Non-ISP capex + PEC – Rule change (2.10% inflation)

Figure 5.90: ElectraNet FFO/Net Debt – Non-ISP capex + Project EnergyConnect

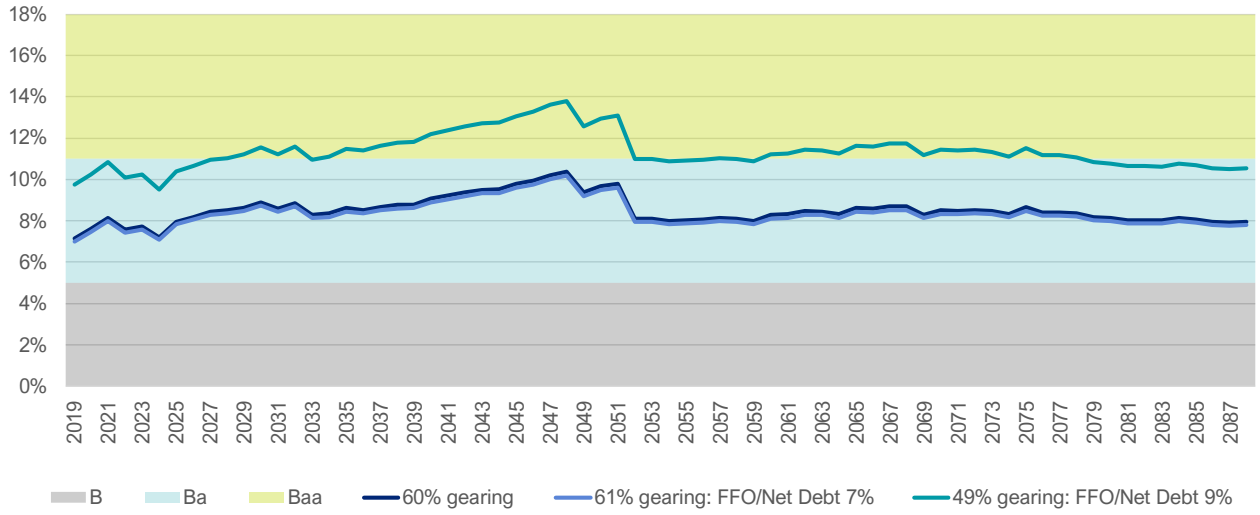


Figure 5.91: ElectraNet FFO Interest Cover – Non-ISP capex + Project EnergyConnect

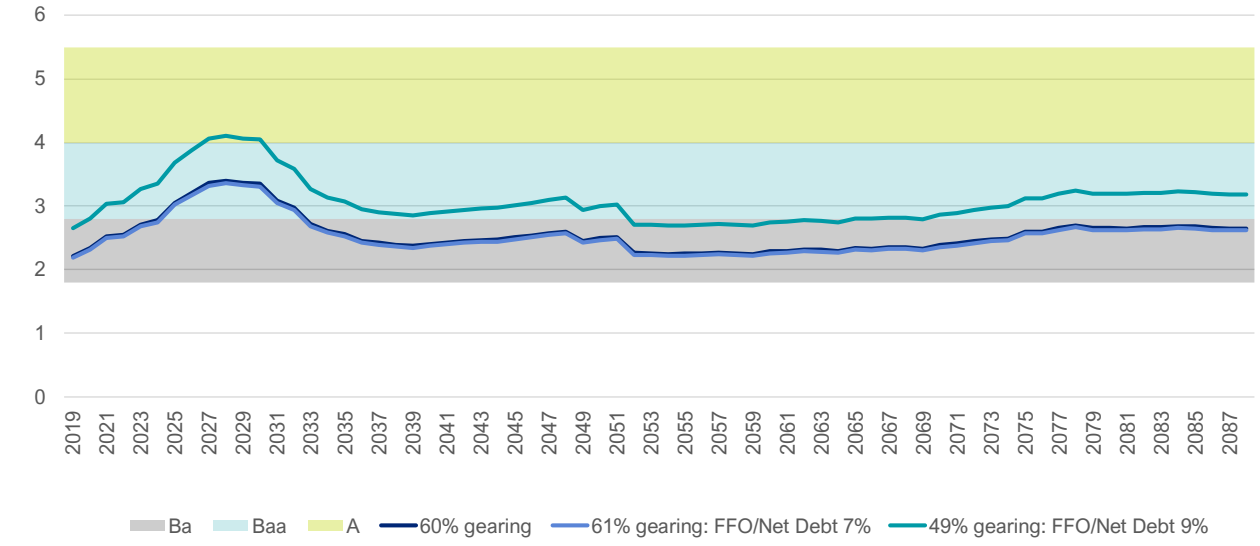
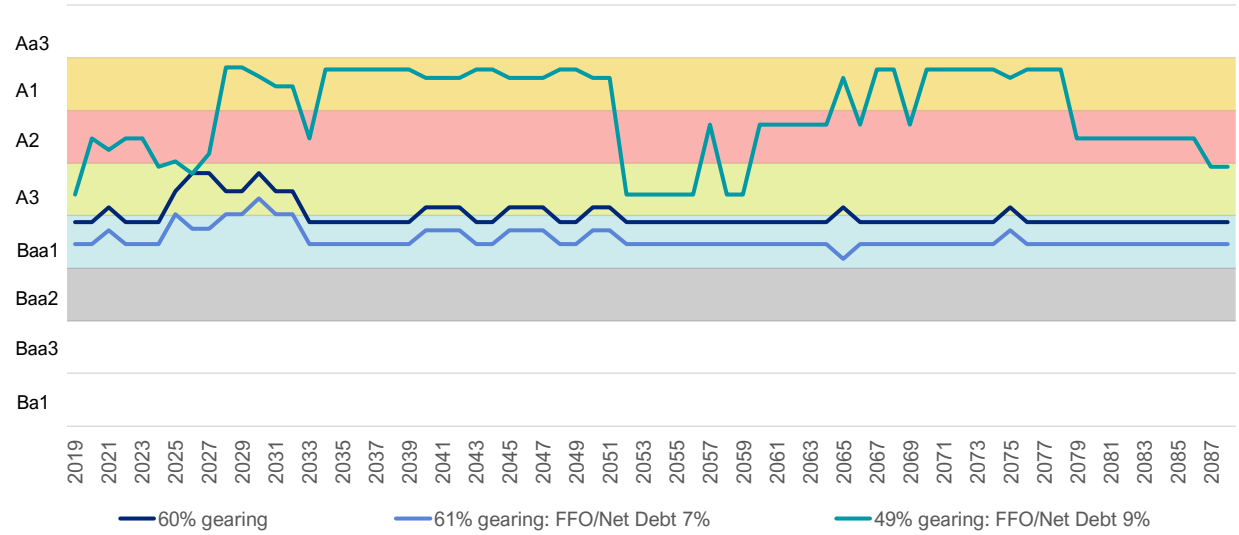


Figure 5.92: ElectraNet overall scorecard-indicated credit rating – Non-ISP capex + Project EnergyConnect



ElectraNet – Non-ISP capex + PEC – Base case (2.80% inflation)

Figure 5.93: ElectraNet FFO/Net Debt – Non-ISP capex + Project EnergyConnect

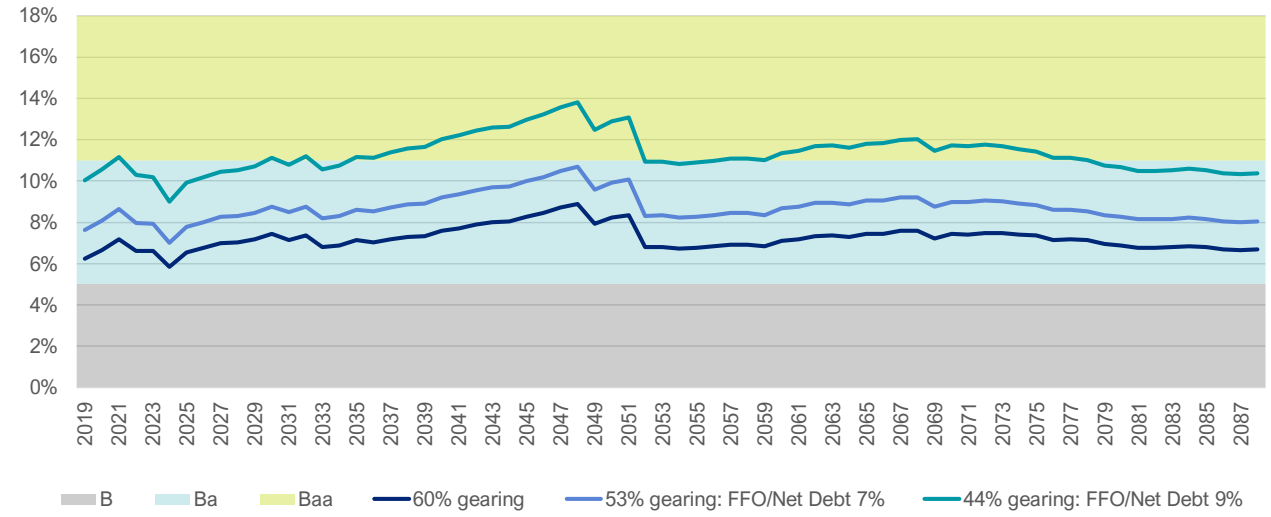


Figure 5.94: ElectraNet FFO Interest Cover – Non-ISP capex + Project EnergyConnect

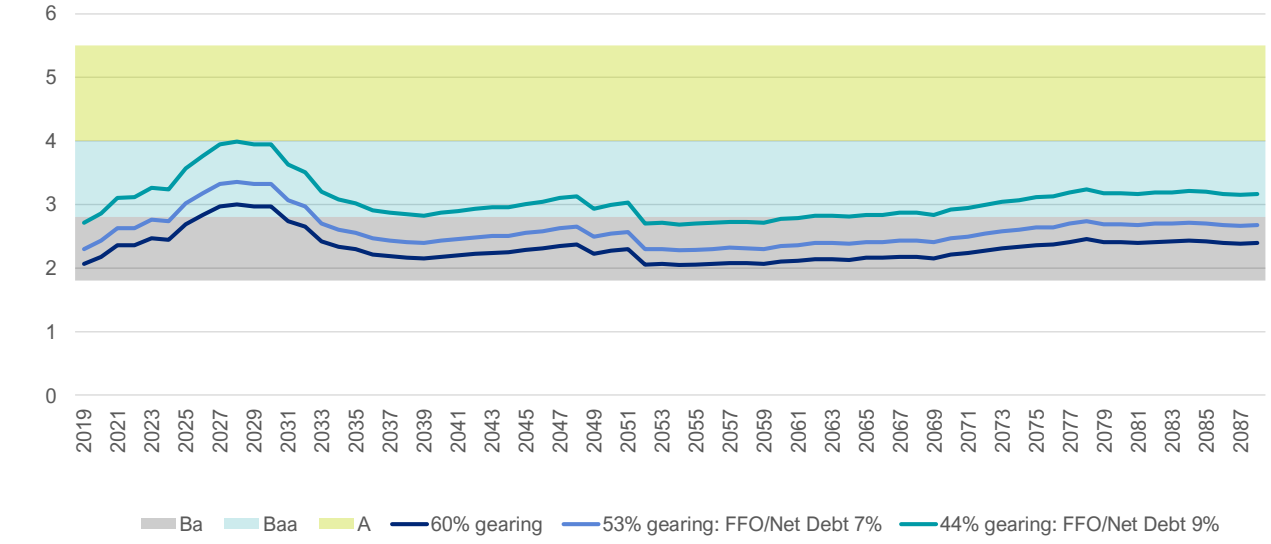
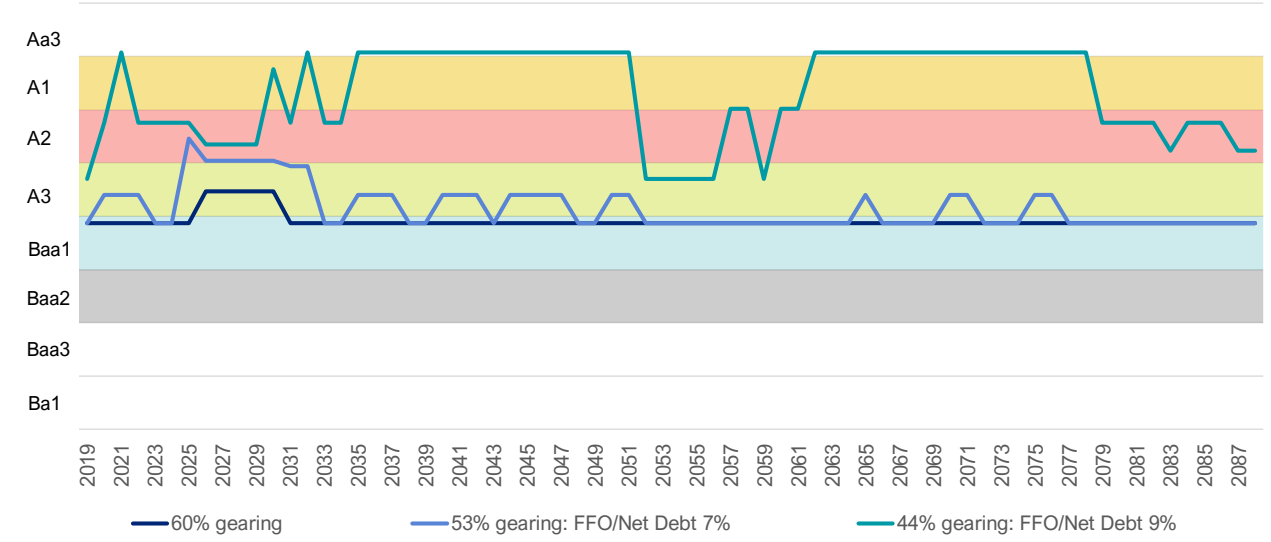


Figure 5.95: ElectraNet overall scorecard-indicated credit rating – Non-ISP capex + Project EnergyConnect



ElectraNet – Non-ISP capex + PEC – Rule change (2.80% inflation)

Figure 5.96: ElectraNet FFO/Net Debt – Non-ISP capex + Project EnergyConnect

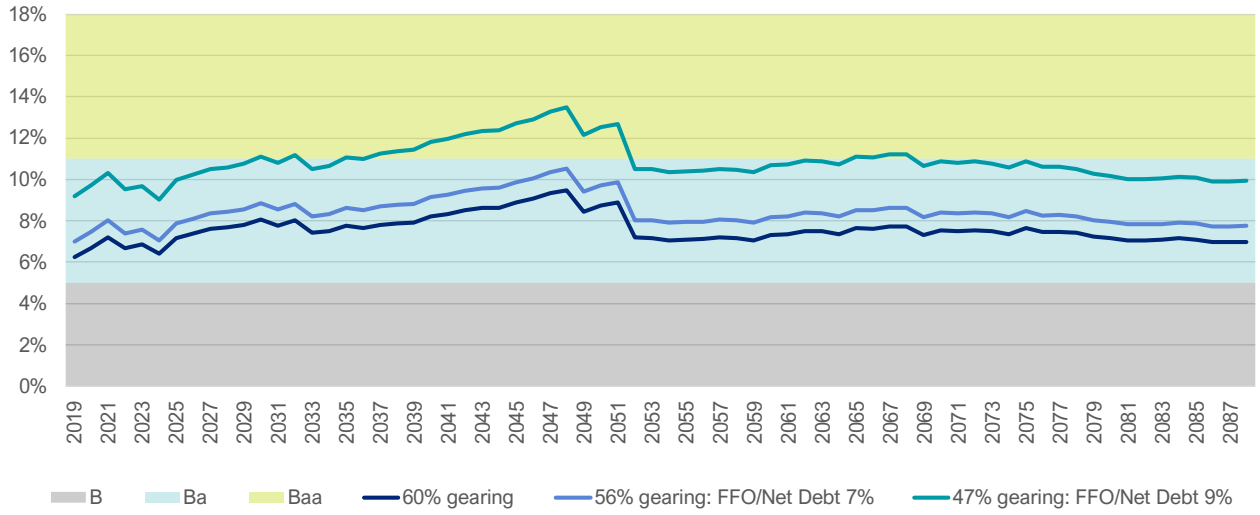


Figure 5.97: ElectraNet FFO Interest Cover – Non-ISP capex + Project EnergyConnect

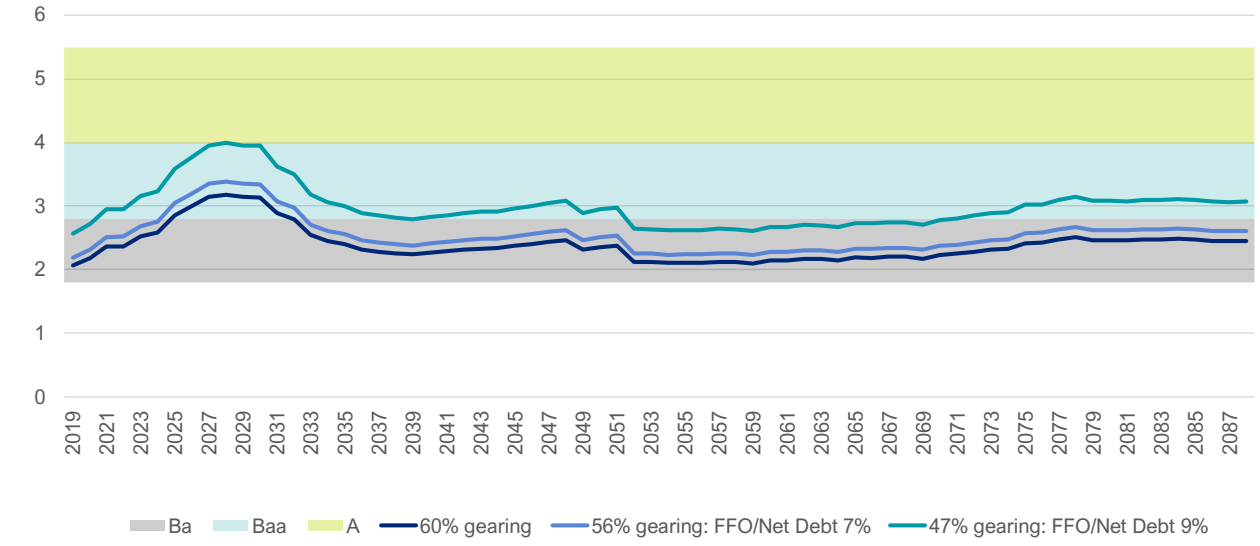
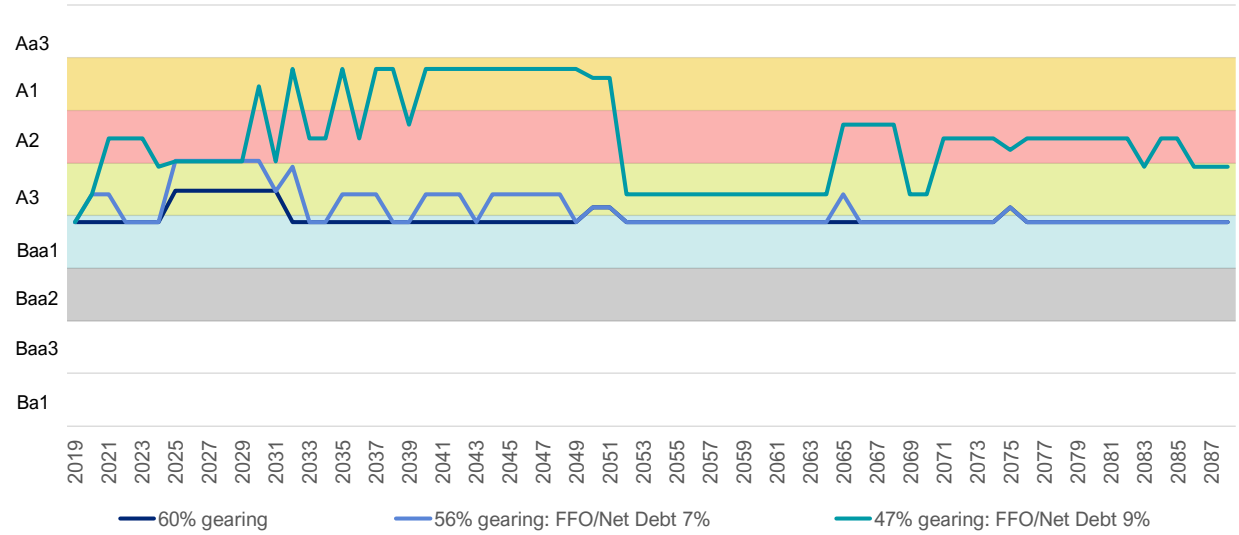


Figure 5.98: ElectraNet overall scorecard-indicated credit rating – Non-ISP capex + Project EnergyConnect



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