



**TransGrid**

# TransGrid submission

AER RIT-T application guidelines review issues  
paper

6 April 2018

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# 1. Introduction

TransGrid welcomes the opportunity to respond to the Australian Energy Regulator's (AER) regulatory investment test application guidelines review issues paper.

TransGrid is the operator and manager of the high voltage transmission network connecting electricity generators, distributors and major end users in New South Wales and the Australian Capital Territory. TransGrid's network is also interconnected to Queensland and Victoria, and is instrumental to an electricity system that allows for interstate energy trading.

Australia is in the midst of an energy transformation. This is primarily driven by changing community expectations and choices, advances in renewable energy technologies, retirement of existing generation, and the adjustments required in Australia's economy to meet our international climate change commitments. These changes raise complex issues in relation to the design of the National Electricity Market which must adapt to these changes and provide the basis for low emissions, reliable supply at the lowest cost to consumers over the long run.

The regulatory investment tests, which are the regulatory investment test for transmission (RIT-T) and regulatory investment test for distribution (RIT-D), are part of the planning and investment framework in the National Electricity Rules. They are designed to facilitate the consideration of different investment options so that the needs of consumers are met at the lowest cost over the long-term.

In transmission, these options are: undertaking transmission network investment, building new generation capacity, and using demand side measures such as procuring demand response. In practice, a combination of these measures may also be used.

TransGrid understands that as part of this issue paper consultation the AER is seeking views on:

- > The purpose of the regulatory investment tests.
- > Issues relating to the regulatory investment test process including aligning the information requirements in the transmission test with those in the distribution test.
- > Issues relating to the application of the regulatory investment tests including whether additional guidance is required on the treatment of environmental policies and for replacement expenditure projects.
- > What guidance stakeholders would find useful in the application guidelines in relation to the Integrated System Plan.
- > In addition, the AER has stated that it will also consider other potential improvements to the guidelines put forward by stakeholders.

We understand that the AER will be consulting publicly on any proposed draft amendments to the guidelines in the second half of this year. TransGrid supports a review of the AER's regulatory investment test application guidelines and considers this review is timely given the transformation of energy markets and associated reforms. In particular, there is a strong link between the AER's RIT-T application guidelines, the development of the Integrated System Plan by the Australian Energy Market Operator (AEMO) and consultation by the Australian Energy Market Commission (AEMC) in its review of coordination of generation and transmission investment.

This submission sets out our views on the current issues in applying the RIT-T and the changes that should be made to the AER's RIT-T applications guidelines to address these concerns.

It is structured as follows:

- > Chapter 2 sets out changes we consider are required to the guidelines to facilitate the delivery of strategic transmission projects, in particular those identified in AEMO's Integrated System Plan.

- > Chapter 3 sets out our views on the changes required to the guidelines to facilitate the application of the RIT-T's to replacement expenditure projects.<sup>1</sup>
- > Chapter 4 sets out other improvements that we consider are necessary to the RIT-T application guidelines.

Our views have been informed by our experience with applying the RIT-T as summarised in Box 1. We have also contributed to the development of the submission by Energy Network Association and support the views in that submission.

**Box 1: TransGrid's experience with the RIT-T**

The AER identifies that there have been 18 applications of the RIT-T since its commencement in June 2010. TransGrid's experience of the RIT-T in its current form has been limited to two projects:

- > the 2012 proposal to upgrade the interconnector between Queensland and NSW (known as QNI)
- > the 2017 proposal to alleviate the increasing risk to the supply of electricity to consumers from ageing electricity infrastructure in the inner Sydney area (known as Powering Sydney's Future).

TransGrid has also applied the RIT-D in a joint process with Essential Energy.

TransGrid considers that the changes it has proposed in this submission for the RIT-T application guidelines accompanied by clarifications from AEMO on the Integrated System Plan can be the game changer to facilitate the transition to a lowest cost renewable electricity supply. A coordinated plan to connect new renewable generation supported by greater interconnections will help deliver affordable and reliable energy to consumers.

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<sup>1</sup> In July 2017, the AEMC made a rule which extends the regulatory investment tests to replacement expenditure.

## 2. The guidelines should facilitate the delivery of AEMO's Integrated System Plan

AEMO's Integrated System Plan will provide a long-term and nationally-coordinated approach to deliver lowest possible energy costs, maintain system security and connect renewable energy resources. It was a key recommendation of the Independent Review into the Future Security of the NEM (the 'Finkel Review'). However, as it is currently applied the RIT-T will not provide the certainty required to assess strategic transmission developments identified in AEMO's Integrated System Plan.

This Chapter sets out the problems with the RIT-T as it is currently applied to strategic projects, such as those identified in AEMO's Integrated System Plan, and a pathway for facilitating the delivery of these projects.

### 2.1 The problems with the application of the RIT-T to strategic projects

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Without necessary changes to the way it may be applied, the existing RIT-T is not suitable for assessing strategic developments such as those identified in AEMO's Integrated System Plan.

This is because:

- > Its consideration of strategic benefits valued by consumers is limited.
  - It offers limited flexibility to place appropriate weight on scenarios based on strategic objectives, such as potential ability of the electricity sector to reduce emissions reductions more readily than other sectors.
  - It does not assign appropriate weight to high-consequence scenarios such as the earlier than expected retirement of generation which are therefore significantly discounted. These events expose consumers to market shocks and high prices during the extended timeframes required to upgrade infrastructure, as was the case with the recent withdrawals of the Northern and Hazelwood Power Stations.
  - It does not consider benefits that can be achieved outside the electricity market, for example the impact of lower wholesale gas and electricity prices on other sectors.

#### **We need an investment test that appropriately considers strategic benefits.**

- > It creates a "chicken and egg" dilemma.
  - The outcomes of the RIT-T are often inconclusive if new generation developments are uncertain.
  - However, new generation developments need certainty they will be able to export their power to market via suitable transmission connections to make a financial investment.
  - The timeframes to develop transmission are often longer than for wind and solar farms.

#### **We need an investment test that can lead generation development rather than follow it.**

- > The test favours incremental development in generation and transmission, which are often more expensive for consumers in the long run.
  - Incremental development does not provide the same economies of scale as larger connections.
  - Marginal investment in generation is likely to minimise capital at risk for proponents, which can result in sub-optimal technology selection, or placement of wind and solar developments, leading to higher unit energy prices for consumers. This is particularly true in the current uncertain policy environment.

## **We need an investment test that facilitates generation with the lowest unit cost for consumers.**

- > The RIT-T can be delayed by individual interests through the disputes process
  - Transmission developments can create “winners” and “losers” amongst existing generators, despite providing overall benefits to consumers
  - The disputes process under the RIT-T can delay or derail beneficial projects, particularly where there is uncertainty

## **We need an investment test that cannot be frustrated by the interests of individual market participants, at the expense of consumers.**

These issues broadly reflect the challenges with applying the RIT-T to an inherently uncertain future.

## **2.2 A pathway for facilitating the delivery of the Integrated System Plan**

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To address the current barriers to delivering strategic transmission investments and facilitate the delivery of AEMO’s Integrated System Plan as intended, TransGrid recommends that:

- > AEMO provide precise and actionable recommendations in the Integrated System Plan.
- > The AER provide clarification on how the plan should be treated in a RIT-T.

Further detail on these actions is provided in sections 2.2.1 and 2.2.2. Section 2.2.3 sets out an overview of our proposed pathway for facilitating the delivery of the Integrated System Plan.

### **2.2.1 What the Integrated System Plan delivered by AEMO needs to provide**

To facilitate the delivery of the integrated system, the plan developed by AEMO must:

- > Provide a clear set of assumptions and scenarios that can be used by transmission network service providers (TNSPs) as input values when applying the RIT-T (such as forecasts of demand and generation retirement dates). This will ensure a like-for-like analysis by AEMO in the Integrated System Plan and TNSPs in their detailed project assessment.
- > Recommend a single pathway for generation and transmission development in which priority projects are identified. In preparing this pathway AEMO should consider analysis results across a range of scenarios and sensitivities, and balance different criteria as required. This single, credible future system development path would then be used as the ‘base case’ by TNSPs when conducting the RIT-T.
- > Provide a long term direction for system planning and a detailed plan for the next ten years, including scheduling for developments (including capacity requirements and development timeframes). Priority projects will need to be identified by AEMO before 2019 to enable timely development.
- > Optimise across network and non-network options when recommending priority generation and transmission developments.

### **2.2.2 Changes required to the RIT application guidelines by the AER**

Importantly, we consider the AER should make the following changes to its RIT-T application guidelines to remove the current grid lock in transitioning to a low cost renewable electricity supply:

- > Provide clarification that the assumptions used in the market modelling undertaken by AEMO in the Integrated System Plan be applied by a TNSP in the RIT-T (unless there was a material change in circumstance such as the announcement of a new government policy). This will provide a consistent set of assumptions around how to treat uncertain future variables at a point in time which has been a source of difficulty and delay in applying the RIT-T.
- > Provide clarification that the broad range of scenarios considered in the Integrated System Plan, covers a range of reasonable scenarios that a TNSP should apply in administering the RIT-T. The reason for this change is that it reduces the potential for difficulty and delay in applying the RIT-T.
- > Provide clarification that AEMO’s recommended development pathway represents a suitable ‘base case’

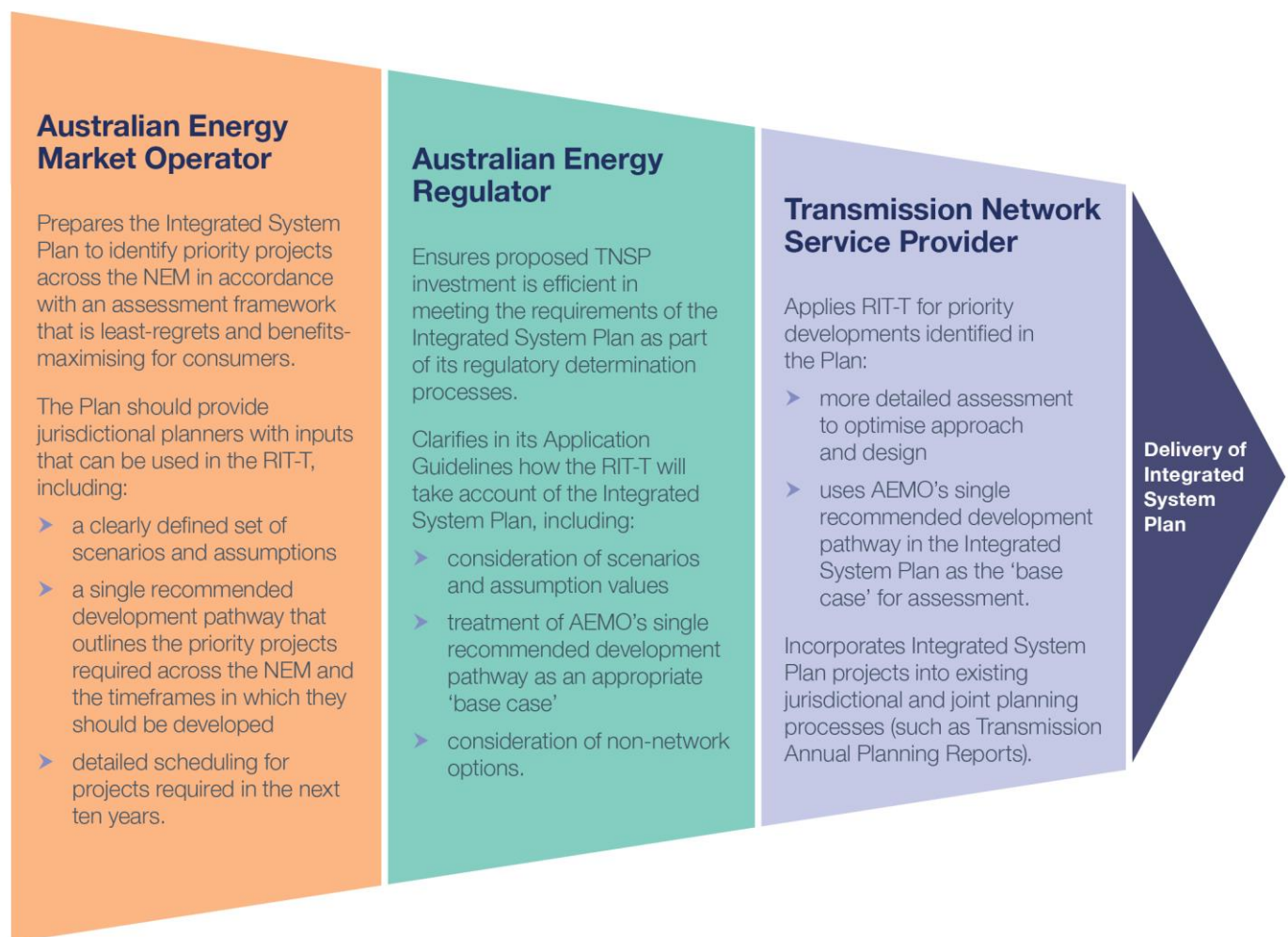
in the application of a RIT-T. This would act as an important ‘circuit breaker’ and enable the subsequent RIT-T assessments to proceed in a more timely fashion as iterations of all potential developments across the NEM would not have to be modelled as part of the RIT-T process.

- Provide clarification that the consideration of needs and options by AEMO in the development of the Integrated System Plan is appropriate to satisfy the requirements of the Project Specification Consultation Report (PSCR) of the RIT-T. The reason for this is that for timely delivery of projects under the Integrated System Plan, TNSPs could rely on the consultation carried out by AEMO to satisfy the PSCR consultation and commence the RIT-T process at the Project Assessment Draft Report stage (following which there is a further round of consultation on the results of the investment test).

### 2.2.3 Overview of TransGrid’s proposed pathway for efficient delivery of the Integrated System Plan

Figure 1 presents TransGrid’s proposed process for ensuring that priority projects identified in the Integrated System Plan are delivered effectively.

**Figure 1: TransGrid’s proposed pathway for efficient delivery of the Integrated System Plan**



Source: TransGrid submission to AEMO’s Integrated System Plan consultation paper, February 2018.

If implemented, this pathway can be the game changer to facilitate the transition to a lowest cost renewable electricity supply.

Without changes to the current regulatory framework, delays in the RIT-T process will delay investment in those projects identified in the Integrated System Plan as being part of the optimal NEM development path, resulting in foregone market benefits. Delays in the RIT-T regulatory process may also result in sub-optimal

developments which do not require a RIT-T proceeding in the interim, potentially displacing the investments identified in the Integrated System Plan. This will result in a sub-optimal transition path that can be expected to result in higher overall costs to consumers.

If our proposed approach is not adopted, then an alternative pathway would be required to deliver the Integrated System Plan.

This may involve:

- > Ministerial direction to deliver the Plan.
- > Changes (or derogations) to the National Electricity Rules, such as to recognise the standing of the Integrated System Plan in the regulatory framework, or to exempt priority developments identified in the Integrated System Plan from the RIT-T.
- > The development of an alternative (or modified) investment test for strategic transmission projects, which could consider a broader range of economic benefits outside the electricity market (for example the impact of lower wholesale gas and electricity prices on other sectors).
- > Establishing a 'conditional RIT-T' to encourage generators to commit to development in the proposed energy zone.



### 3. The AER should provide guidance on the application of the RIT-T to replacement expenditure projects

In 2017, the AEMC determined that the regulatory investment tests would apply to replacement projects.<sup>2</sup> Previously replacement expenditure was exempt from the tests. TransGrid understands that the AER is seeking stakeholders' views on whether there is any particular guidance that it should provide in relation to the application of the regulatory investments tests to replacement expenditure.

As a general principle, TransGrid considers the RIT-T application guidelines should facilitate a proportionate analysis for replacement expenditure projects by network service providers.

TransGrid considers this was the intent of the AEMC:<sup>3</sup>

*"... the amount of work to be undertaken for a final [RIT-T] report would not be significant where there is only one viable option. It would not require a significant amount of work to calculate the costs and benefits where there is only one option, for example. A network service provider is expected to undertake some of this work in making an investment decision anyway."*

There are three areas in which TransGrid considers further guidance is required to the RIT-T guidelines in relation to replacement expenditure:

- > The AER should amend its RIT-T Guidelines to allow for the adoption of a 'business as usual' base case which in some circumstances may also be one of the credible options being considered in the analysis. The use of a 'business as usual' base case to assess the options against would not change the outcome of the RIT-T. However, it would avoid the analysis otherwise required to construct an unrealistic 'do nothing' base case for replacement expenditure projects.
- > The AER should provide an example of a replacement expenditure project driven by compliance with safety requirements. This guidance would be helpful as, unlike reliability driven requirements, there are often no specific external compliance requirements for safety.
- > The guidelines should acknowledge that programs of replacement works would not be expected to be subject to a RIT as they are assessed by the AER as part of the regulatory determination process.

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<sup>2</sup> AEMC, *Replacement expenditure planning arrangements final rule determination*, 18 July 2017.

<sup>3</sup> *Ibid.*, p. 67.

# 4. Other improvements to the RIT-T application guidelines

## 4.1 The treatment of environmental policies

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One of the recommendations of the COAG Energy Council's RIT-T review was for the AER to provide further guidance and clarity on the treatment of environmental policies in the RIT-T application guidelines. TransGrid supports the COAG Energy Council's recommendation and would welcome further guidance and clarity from the AER on this issue. We do not consider the guidance in the current RIT-T guidelines is sufficient as suggested by the AER.<sup>4</sup>

It would be appropriate for the AER guidelines to include further clarification or guidance on how environmental policy objectives and targets (such as the Renewable Energy Target, state-based emissions reduction targets and the National Energy Guarantee) which may be uncertain should be accounted for in assessing investment options. This would inform TNSPs how to appropriately consider and model these objectives. This would also be beneficial in providing strategic, long-term policy oversight for participants of the NEM.

This objective can be achieved by an explicit acknowledgement in the guidelines that TNSPs should adopt the same environmental policy scenarios and approach to incorporating these in the wholesale market modelling as used by AEMO for the Integrated System Plan (unless there is more up-to-date information that makes these inappropriate, in which case the TNSP would need to make this case in its RIT-T documentation).

The guidelines are also in need of a general refresh on the topic of how to treat environmental targets. For example, clause 3.5 of the guidelines provides guidance on how to calculate cost savings in meeting the former Carbon Pollution Reduction Scheme.<sup>5</sup>

## 4.2 Option value and scenario analysis

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The RIT-T currently favours incremental development in transmission which is often more expensive for consumers in the long run because incremental development does not provide the same economies of scale as larger connections.

The AER should provide a worked example of the option value of constructing a new transmission line at a higher voltage than is initially needed, when there is a high likelihood that the capacity at the higher voltage will ultimately be used. For example, a 500kV transmission line has around half the cost per MW capacity than that of a 330kV transmission line. In addition it minimises the asset footprint and community impact compared to the lower voltage line. In this way, consumers benefit where economies of scale such as these can be realised.

## 4.3 The treatment of high impact low probability events

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One of the recommendations of the COAG Energy Council's RIT-T review was for the AER to provide further guidance on how to better account for high impact low probability events in the RIT-T application guidelines. TransGrid supports the COAG Energy Council's recommendation and would welcome further guidance and clarity from the AER.

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<sup>44</sup> AER, *Review of the application guidelines for the regulatory investment tests, Issues paper*, February 2018, p. 36.

<sup>5</sup> AER, *Regulatory investments test for transmission application guidelines, Final*, June 2010, pp. 21-24.

The RIT-T currently does not assign appropriate weight to high-consequence scenarios such as the earlier than expected retirement of generation which are therefore significantly discounted. These events expose consumers to market shocks and high prices during the extended timeframes required to upgrade infrastructure, as was the case with the recent withdrawals of the Northern and Hazelwood Power Stations.

To address this concern, TransGrid recommends:

- > The AER amend clause (4)(a)(ii) of the RIT-T and (6)(a)(ii) of the RIT-D to remove the reference to the need to weight each scenario by its probability of occurring.
- > The AER amend the regulatory investment test application guidelines to provide flexibility for network service providers to adopt different scenario weightings where consultation indicates that consumers prefer avoiding high impact, low probability events.

#### 4.4 Value of customer reliability

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The value of customer reliability (VCR) is an important input into the economic assessment of optimal levels of reliability. TransGrid agrees with the AER that the VCR could vary from project to project and would welcome some commentary from the AER on its expectations for the selection of an appropriate VCR in the RIT-T application guidelines.

In particular, it would be helpful for the AER to make explicit in its RIT Application Guidelines that the choice of VCR estimate may vary from application to application, and should reflect the specific factors relevant to a particular RIT, including:

- > Whether the outage is temporary or prolonged;
- > Whether the outage would affect a wide or narrow area; and
- > Customer type.

#### 4.5 Stakeholder engagement

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The COAG Energy Council recommended in its RIT-T Review that the AER consider whether TNSPs should be subject to the same requirements as distribution network service providers to screen for non-network options and consult on a non-network options report.

The AER comments in its Issues Paper that the National Electricity Rules still require substantive engagement by TNSPs on non-network options in the RIT-T process, and that this should sufficiently accommodate effective consultation.

TransGrid supports this view and considers that there is already effective consideration of non-network options by TNSPs.

For example, as part of the Powering Sydney's Future RIT-T:

- > TransGrid ran an Expression of Interest for non-network alternatives to help assess whether a non-network solution could be used to defer the project or to reduce the risk of unserved energy.
- > In response to the PSCR, TransGrid and Ausgrid received enquiries from several non-network service providers and in December 2016, as requested by potential non-network service providers, extended the submission deadline to February 2016 to enable more rigorous proposals to be developed. In total eleven submissions were received from non-network proponents.
- > TransGrid held meetings with non-network proponents throughout the RIT-T process and continue to do so.
- > As a consequence, in the Project Assessment Conclusions Report TransGrid proposed a four year demand management program to help manage the risk of unserved energy and economically defer the project.

Further detail on the non-network and broader stakeholder engagement TransGrid undertook as part of the Powering Sydney's Future projects is provided a case study in Box 2.

## **Box 2: Powering Sydney's Future RIT-T case study**

Powering Sydney's Future was originally launched in 2014. Through this initiative, TransGrid and Ausgrid investigated a number of solutions to maintain reliability and security of electricity supply to Inner Sydney.

Between January and October 2014, TransGrid and Ausgrid implemented a range of engagement activities including workshops, information sessions, surveys and briefings, obtaining feedback from over 350 stakeholders, businesses and community members on a range of initiatives that could deliver an effective solution for the future energy needs of inner Sydney.

In 2015, reduced demand forecasts prompted TransGrid to defer capital expenditure on the project.

In October 2016, Publication of the Project Specification Consultation Report (PSCR) marked the first stage of the RIT-T. The PSCR built on the earlier stakeholder engagement, inviting submissions on credible non-network options that could meet the forecast demand. Eleven submissions were received from non-network proponents offering a range of technologies including diesel generation, gas co/tri-generation, demand response, battery Storage, and solar PV. The responses by non-network proponents allowed TransGrid and Ausgrid to propose a solution that uses non-network solutions to defer the eventual network option by one year.

In May 2017, the release of the Project Assessment Draft Report (PADR) of the RIT-T identified the preferred option for investment taking into account stakeholder feedback. The PADR presented the results of the RIT-T economic assessment, proposing a preferred option involving the use of non-network solutions to defer network build by one year, and installing two 330 kV cables.

In November 2017, TransGrid completed the third and final stage of the RIT-T, with the release of the Project Assessment Conclusion Report (PACR). The PACR presented a solution further refined by stakeholder feedback. This was to install a single 330kV cable and defer installation of a second cable until further demand and reliability triggers are met. The revised single-cable solution also includes deferring network expenditure by one year using non-network solutions.

The RIT-T process has been underpinned by extensive stakeholder engagement throughout 2016 and 2017 which built on the early engagement completed in 2014. This involved a mix of public forums, workshops, working groups and targeted stakeholder engagement.

More generally, TransGrid is supportive of non-network alternatives such as demand response as it allows TNSPs to be more responsive to changes in demand forecasts and the needs of consumers. The regulatory framework should provide incentives for innovation by TNSPs to actively build up the market, in the same way that an innovation scheme has been introduced for distribution businesses.