

Stakeholder Engagement Report

**Transgrid 2023-28 Revenue Proposal
Phase 2 (Post-Lodgement) Engagement Activities**

**Deep Dive Workshop 2
15 August 2022**

Issued 27 September 2022

Contents

Item	Page
Introduction	3
Key Discussion Items	7
Appendix: Attendance	21

Inherent Limitations Disclaimer

This report has been prepared as outlined with The Trustee For The NSW Electricity Networks Operations Trust (Transgrid) in the Scope Section of the engagement letter/contract 28 June 2022. The services provided in connection with this engagement comprise an advisory engagement, which is not subject to assurance or other standards issued by the Australian Auditing and Assurance Standards Board and, consequently no opinions or conclusions intended to convey assurance have been expressed.

The findings in this report are based on a qualitative study and the reported results reflect a perception of Transgrid but only to the extent of the sample surveyed, being Transgrid's approved representative sample of stakeholders. Any projection to the wider stakeholder group is subject to the level of bias in the method of sample selection.

No warranty of completeness, accuracy or reliability is given in relation to the statements and representations made by, and the information and documentation provided by, stakeholders consulted as part of the process.

No reliance should be placed by Transgrid on additional oral remarks provided during the presentation, unless these are confirmed in writing by KPMG. KPMG have indicated within this report the sources of the information provided. We have not sought to independently verify those sources unless otherwise noted within the report.

KPMG is under no obligation in any circumstance to update this report, in either oral or written form, for events occurring after the report has been issued in final form.

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Introduction

Background

Transgrid operates and manages the high voltage electricity transmission network in New South Wales (NSW) and the Australian Capital Territory (ACT), connecting generators, distributors and major end users. Every five years, the Australian Energy Regulator (AER) undertakes a Revenue Determination to assess the revenue that Transgrid can recover from its customers for the transmission services it provides. This process is also known as a Revenue Reset. Transgrid's next regulatory period will occur from 1 July 2023 to 30 June 2028. The Revenue Reset for this period involves a comprehensive assessment of Transgrid's plans and forecast expenditure, and consideration of customer preferences.

On 31 January 2022, Transgrid lodged its initial Revenue Proposal, which outlined the revenue that Transgrid proposes to recover from electricity consumers through transmission network prices across the 2023-28 regulatory period. Prior to lodging its initial Revenue Proposal, Transgrid undertook consultation and engagement activities with its customers and stakeholders. These formed 'Phase 1' of Transgrid's engagement approach.

Since Transgrid lodged its initial Revenue Proposal, there have been a number of changes which may impact its Revised Revenue Proposal. Transgrid will lodge its Revised Revenue Proposal with the AER on 2 December 2022.

Transgrid has commenced a second phase of engagement (Phase 2) with customers and stakeholders in order to inform its Revised Revenue Proposal. Phase 2 engagement includes, among other activities, a series of 'Deep Dive' workshops with the Transgrid Advisory Council (TAC). The role of the TAC is to provide advice on strategic policy topics and Transgrid's business plans.

The TAC consists of Customer Advocates, Direct Connect Customers, Market Bodies, Industry Advocates, a Financial Investor and Expert Advisors. The AER and its Consumer Challenge Panel (CCP) are also invited to attend TAC meetings as observers. Transgrid facilitates 'business as usual' TAC meetings on a quarterly basis, with the Phase 2 Deep Dive workshops being scheduled in addition to these standing meetings.

Stakeholder Engagement Approach

Transgrid's approach to its Phase 2 engagement is detailed in its 2023-28 Revenue Proposal – Phase 2 (post-lodgement) Stakeholder Engagement Plan. This Plan outlines Transgrid's engagement objectives and principles, which seek to demonstrate Transgrid's commitment to responding to feedback received from stakeholders after Phase 1 engagement.

Transgrid has stated that it seeks to demonstrate stakeholder engagement at the 'involve' and 'collaborate' level of the IAP2 Spectrum of Public Participation. Where appropriate, some topics of engagement may be targeted at the 'inform' and 'consult' levels of engagement. Transgrid will work with stakeholders to define appropriate levels of engagement for the specific topics considered.

Transgrid will co-design agendas for all Deep Dive workshops with TAC stakeholders based on feedback from attendees about the topics of most interest and importance to stakeholders.

	Inform	Consult	Involve	Collaborate	Empower
Public Participation Goal	To provide the public with balanced and objective information to assist them in understanding the problem, alternatives, opportunities and/or solutions.	To obtain public feedback on analysis, alternatives and/or decisions.	To work directly with the public throughout the process to ensure that public concerns and aspirations are consistently understood and considered.	To partner with the public in each aspect of the decision including the development of alternatives and the identification of the preferred solution.	To place final decision making in the hands of the public.
Promise to the Public	We will keep you informed.	We will keep you informed, listen to and acknowledge concerns and aspirations, and provide feedback on how public input influenced the decision.	We will work with you to ensure that your concerns and aspirations are directly reflected in the alternatives developed and provide feedback on how public input influenced the decision.	We will look to you for advice and innovation in formulating solutions and incorporate your advice and recommendations into the decisions to the maximum extent possible.	We will implement what you decide.

Source: IAP2's Public Participation Spectrum

Introduction

Stakeholder Engagement Approach (cont.)

The Deep Dive workshops form part of a wider stakeholder engagement strategy which includes several different forums. Each forum has a different purpose:

- Quarterly TAC Meetings – act as a key stakeholder advisor to Transgrid, offering consumer and industry insights and advice on strategic policy topics and Transgrid’s business plans
- TAC Reset Deep Dives – the purpose of these workshops is for the TAC to actively participate in the design of Transgrid’s positions and proposal in its Revised Revenue Proposal
- System Security Roadmap Workshops – to define the network infrastructure needs and operational capabilities necessary to manage evolving risk, focused on technical aspects of the investment including needs and drivers
- Energy Transition Working Group – discusses issues arising from the transition of the energy market, including discussion on ISP projects being delivered by Transgrid.

The agendas for TAC Reset Deep Dive workshops have been defined based on stakeholder feedback of what topics would be most valuable to explore.

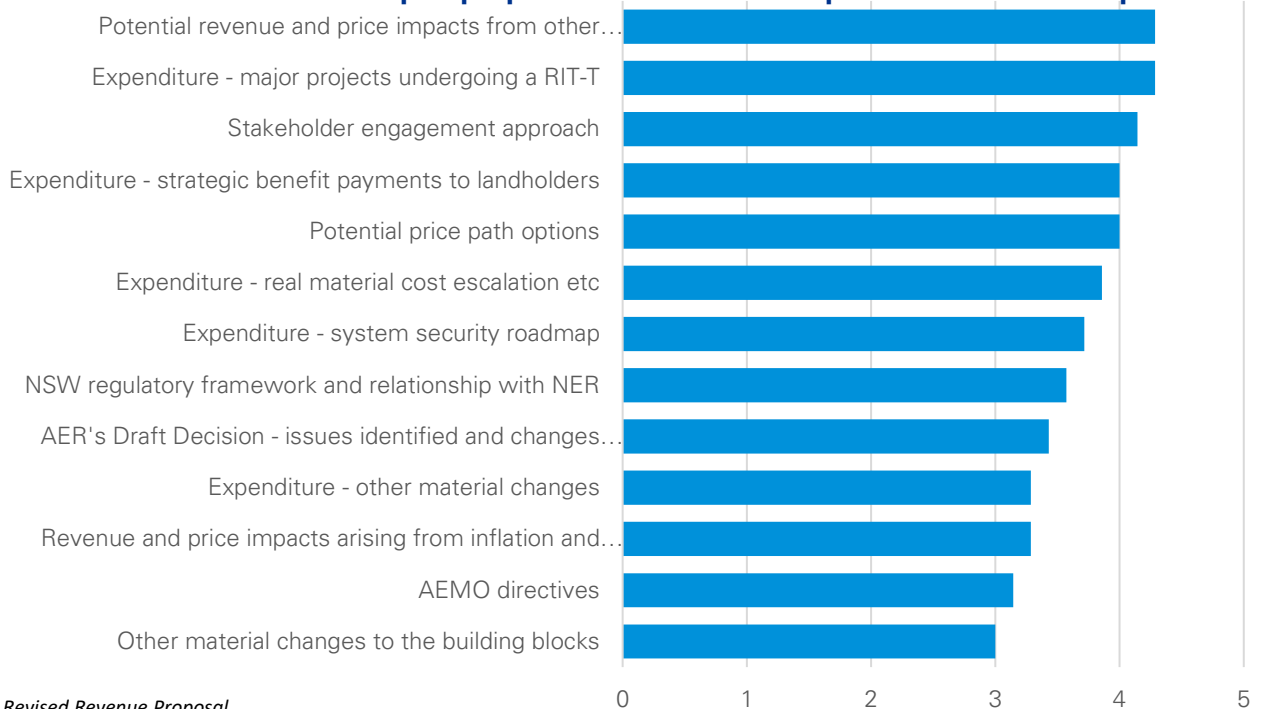
Co-designing topics for engagement

Transgrid sought feedback from stakeholders directly in the Deep Dive 1 workshop and for a period following the workshop, as part of the co-design of the forward agendas for Deep Dive workshops 2-4. Stakeholders were asked to prioritise proposed topics for Deep Dive workshops through an online voting tool. Stakeholders were also asked to identify any additional topics that they would like addressed in the workshops.

Transgrid explained that the process of reviewing forward agendas would be iterative to ensure that changes could be incorporated throughout the process, including any additional interest or priority areas.

To ensure wide representation of views, those stakeholders who were unable to attend Deep Dive 1 Workshop were given the opportunity to vote and provide input via email communication following the Deep Dive workshop over a period of 6 business days. In total, 7 TAC members provided input. The prioritisation of the proposed topics is detailed below.

Stakeholder views on topics proposed for discussion as part of TAC Reset Deep Dives



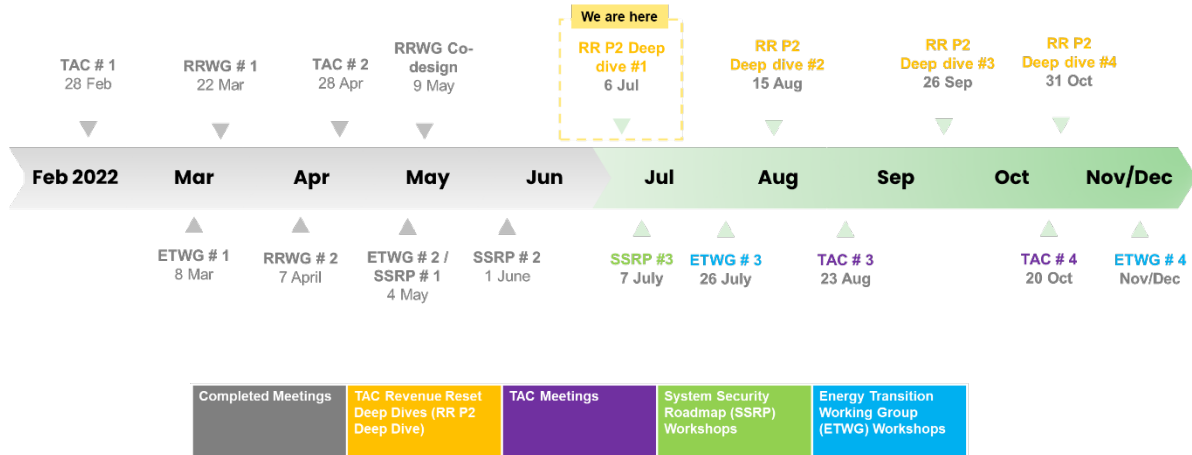
Source: Transgrid Revised Revenue Proposal
Phase 2 Deep Dive 2, Mentimeter Results, n=7

Average response, "How important to you is discussing the following topic during the TAC Deep Dive meetings?" [5 = Very important]



Introduction

The below outlines the planned stakeholder engagement at the commencement of Deep Dive 2.



Source: Transgrid (presented to stakeholders in Deep Dive 1)

As a result of stakeholder feedback during Deep Dive workshop 2, Transgrid agreed to schedule two additional Deep Dive workshops to address a broader range of topics identified by stakeholders.

Introduction

Role of KPMG

KPMG was engaged by Transgrid to support its Phase 2 engagement. KPMG will:

- support the design of appropriate stakeholder engagement activities
- facilitate co-design workshops between Transgrid and its TAC
- document stakeholder views to ensure commentary is accurately and fairly reflected for consideration.

Transgrid remains responsible for workshop content including information specific to the development of its Revised Revenue Proposal.

Purpose of this report

This report summarises key discussion points raised in Deep Dive workshop 2, including questions and views from stakeholders and Transgrid's responses.

The purpose of TAC Reset Deep Dive workshop 2 was to:

- Recap feedback from Deep Dive 1 and explain how Transgrid is responding, and
- Share information on key proposals and positions for the Revised Revenue Proposal and involve and collaborate with stakeholders on these to ensure they reflect where appropriate the TAC's feedback.

Deep Dive 2 Workshop Details

Date	15 August 2022
Time	2-5pm (AEST)
Location	Webex (video conference) hosted by Transgrid

Prior to the Deep Dive 2 workshop, Transgrid circulated the proposed agenda, workshop pack and briefing notes providing context on the content for discussion. This provided stakeholders time to prepare for the workshop and assisted to establish a baseline level of knowledge on each topic.

Detailed information on the key proposals and positions discussed at the workshop, including the material presented by Transgrid, can be found in the workshop materials. A full list of attendees has been provided in the Appendix.

Key discussion items

Key Outcomes

There were three deep dive topics planned for discussion as part of the Deep Dive 2 workshop:

1. Major non-ISP projects undergoing a RIT-T: assumptions, inputs and forecast expenditure
2. Unit rates: Increase between FY21 to FY22: drivers and outcomes
3. System Security Roadmap: drivers and outcomes.

Due to extensive stakeholder interest and engagement in *Topic 1: RIT-T assumptions and inputs for non-ISP projects*, there was limited discussion on Topics 2 and 3. It was agreed that these topics, and further discussion on Topic 1, should be carried forward into future workshops.

In response to stakeholders' request for additional workshops, and to facilitate ongoing quality engagement, Transgrid offered to facilitate additional Deep Dive workshops.

The table below provides an overview of the topics discussed and key discussion points in Deep Dive Workshop 2 as well as stakeholders' feedback and Transgrid's response. HoustonKemp, who provides independent advice to Transgrid on its RIT-Ts, led the discussion on the RIT-T topic. Responses provided by HoustonKemp, rather than Transgrid, have been clearly identified.

Topic presented by Transgrid	Stakeholder input	How Transgrid responded
Engagement Approach and DD1 Feedback <ul style="list-style-type: none"> • Transgrid recapped its Phase 2 engagement approach and the status of its post-lodgement engagement. • Transgrid outlined the purpose of the workshop was to: <ul style="list-style-type: none"> ○ recap feedback from Deep Dive 1 and share how Transgrid is responding ○ share information with stakeholders on Revenue Proposal topics and involve and collaborate with stakeholders on how these impacts should be addressed in Transgrid's Revised Revenue Proposal • Transgrid summarised the feedback received from the TAC in Deep Dive 1 and shared how it is responding. In particular, Transgrid provided an overview of its updated engagement principles and objectives, and updated future Deep Dive agendas. 	Stakeholders did not raise any concerns or objections with how Transgrid is responding to feedback from Deep Dive 1.	
	In relation to Transgrid's Engagement Principle of 'Genuine', two Customer Advocates expressed the view that the principle should include that the Revised Revenue Proposal will reflect consumer preferences and interests.	Transgrid acknowledged this feedback and subsequently updated its Engagement Principle in response to this feedback.
	It was noted by one Customer Advocate that the National Electricity Objective (NEO) will undergo changes to incorporate emissions reduction objectives to align with the new Federal Government policies. It will therefore need to balance environmental, reliability and cost outcomes.	This was noted by Transgrid.
	Customer Advocates and a Financial Investor noted that they were comfortable with the updated Deep Dive agendas outlined. One Customer Advocate noted that they wanted to ensure future agendas continued to be flexible and that Transgrid remained open to address any priority issues as they arise.	Transgrid acknowledged this feedback.

Key discussion items

Outlined below are the key discussions from Deep Dive Workshop 2, detailing the topics presented, stakeholders' feedback and Transgrid's response. Transgrid's consultant HoustonKemp presented on the RIT-T topic on behalf of Transgrid. Where a response was provided by HoustonKemp rather than Transgrid, this has been noted.

Topic presented by Transgrid	Stakeholder input	How Transgrid responded
<p>RIT-T scenarios and assumptions, inputs and forecast expenditure for non-ISP projects</p> <ul style="list-style-type: none"> Transgrid advised that its intent is to engage with stakeholders on the inputs and assumptions, consider and agree changes, and reflect these into future RIT-Ts. Transgrid advised that the following topics were not proposed to be discussed in detail in this workshop, but could be discussed in future Deep Dive workshops: <ul style="list-style-type: none"> how Transgrid derives its costs and the accuracy of cost estimates how Transgrid forecasts demand. For the topic of discussion relating to RIT-T scenarios, assumptions and inputs for non-ISP projects, two recent RIT-Ts were used as examples: Bathurst Orange Parkes (BOP) & North West (NW) Slopes. HoustonKemp explained that: <ul style="list-style-type: none"> the approach to scenarios (and which variables to include) should be considered on a case-by-case basis for non-ISP projects the RIT-T guidelines outline the variables and parameters that TNSPs should consider when developing reasonable scenarios. 	<p>One Customer Advocate suggested that other components of the RIT-T scenarios used for BOP and NW Slopes need to be covered in another session, particularly new renewable generation development and wholesale market benefits.</p>	<p>This was noted by Transgrid.</p>
<p><u>Approach to developing scenarios:</u></p> <ul style="list-style-type: none"> HoustonKemp explained that Transgrid's recent non-ISP RIT-T assessments have adopted three reasonable scenarios – a central, low, and high scenario. HoustonKemp explained that the central scenario represents Transgrid's best estimate of the key variables and parameters that may influence the selection of a preferred option. HoustonKemp explained that each of these key variables and parameters are then changed at the same time to create an upper bound of plausible benefits (the high benefits scenario) and a lower bound of plausible benefits (the low benefits scenario). 	<p>One Customer Advocate sought clarification on HoustonKemp and Transgrid's intention behind the three scenarios, agreeing with the intention previously stated by Transgrid to use the high benefits and low benefits scenarios to test the ranking of options against an extreme bound of plausible economic benefits.</p> <p>However, the Customer Advocate noted that they disagreed with Transgrid's application of weightings of 18% and 30% for the high and low benefits scenarios respectively, as this does not reflect extreme scenarios, commenting that rather a weighting of 5-10% should be applied.</p> <p>The Customer Advocate reiterated the view that either Transgrid should use extremes and apply an appropriate weighting or use non-extreme assumptions and use a 25:50:25 weighting, saying that the Project Assessment Conclusions Report (PACR) is currently a combination of the two.</p>	<p>HoustonKemp advised that the weightings given to extreme scenarios is an open question, and that applying a lower weighting in the order of 5-10% may be appropriate (and was included as a sensitivity analysis in the BOP and NW Slopes PACRs in response to stakeholder submissions).</p> <p>HoustonKemp explained that in this workshop Transgrid sought to agree a way to think about scenario weightings when there are extreme highs and lows, which can be taken forward and applied on a prospective basis as the default approach.</p>

Key discussion items

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Topic presented by Transgrid	Stakeholder input	How Transgrid responded
Approach to developing scenarios (cont.)	The Customer Advocate sought input from Transgrid on its view on the application of scenario weightings.	Transgrid explained that it had discussed its approach with HoustonKemp and relied on HoustonKemp's advice on the weightings that it had adopted. Transgrid explained that it was open to updating its approach based on feedback from the group.
	The Customer Advocate reiterated that the weightings and the values need to be considered together for the purpose of the sensitivity analysis. The stakeholder outlined that they believed that the values used by Transgrid were near the extreme bounds, but the weightings used do not reflect this.	HoustonKemp explained that lower weightings of 5-10% could be used for high and low scenarios (where these reflected extreme values) going forward.
	One Customer Advocate sought to understand which party bears the risk associated with an increased uptake in DER which in turn would reduce the need for transmission infrastructure.	HoustonKemp explained that this is not included in a RIT-T assessment but may be included in AEMO's ISP scenarios and assumptions.
	Another Customer Advocate suggested it could be included in the new renewables component.	HoustonKemp committed to considering how these could be factored in going forward, for RIT-Ts where localised DER uptake may be an important factor affecting the choice of option.
	A Financial Investor asked whether, if Monte Carlo analysis was not undertaken, there was analysis that showed the interdependencies between variables.	HoustonKemp explained that the book-end scenarios tested the impact of combining different variables.
	One Customer Advocate noted that while the hydrogen superpower scenario in the ISP has high benefits, domestic consumers do not benefit from it. They also noted the need for a policy discussion around what domestic consumers should pay for.	HoustonKemp explained that the rationale for using a high and low benefits scenario is to look at the robustness of options for meeting the needs in a particular case and that this approach: <ul style="list-style-type: none"> • leverages these scenarios to understand if a different investment decision would be made under a high or low benefit scenario if any of the sensitivities took place • is not used as a justification for the investment. Rather, it ensures that the justification remains the same under high and low scenarios.
	One Customer Advocate stated that the RIT-T should have a robust identified need, based on plausible assumptions as inputs and ensure it considers timing, which is a critical input.	Transgrid agreed on the importance of assumptions and advised that it intended to discuss these in the next section of the workshop, including the individual parameters.

Key discussion items

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Topic presented by Transgrid	Stakeholder input	How Transgrid responded
<p>Demand Forecasts</p> <ul style="list-style-type: none"> HoustonKemp outlined that Transgrid undertook a case-by-case assessment of load forecasts to be used for the RIT-Ts. HoustonKemp outlined the criteria in the RIT-T for committed and anticipated projects, with an anticipated project needing to meet at least 3 of the criteria (refer criteria on the following page). The criteria for a committed project in the RIT-T are: <ul style="list-style-type: none"> The proponent has obtained all required planning consents, construction approvals and licenses, including completion and acceptance of any necessary environmental impact statement. Construction has either commenced or a firm commencement date has been set. The proponent has purchased/settled/acquired land (or commenced legal proceedings to acquire land) for the purposes of construction. Contracts for supply and construction of the major components of the necessary plant and equipment (such as generators, turbines, boilers, transmission towers, conductors, terminal station equipment) have been finalised and executed, including any provisions for cancellation payments. The necessary financing arrangements, including any debt plans, have been finalised and contracts executed. HoustonKemp outlined that based on this information Transgrid developed: <ul style="list-style-type: none"> for BOP, three demand forecasts (low, central, and high) for NW Slopes, two demand forecasts (low and central), as there are fewer potential loads in this area. 	<p>One Customer Advocate stated that there is a lack of transparency around the demand forecasts used (both magnitude and timing) due to confidentiality. This was a concern for them, as they believed transmission companies have an incentive to use a higher demand forecast.</p> <p>The stakeholder asked how Transgrid dealt with uncertainty around demand forecasts for prospective developments. For example, does Transgrid assume all load forecasts that are 75% probable will go forward, or does it assume that 75% of the total of the estimated loads will be built.</p> <p>The Customer Advocate sought to understand the role of the AER in evaluating and interrogating commercial-in-confidence demand forecasts and supporting information.</p> <p>The Customer Advocate asked Transgrid or HoustonKemp whether they had any suggestions around dealing with the issue of confidential demand forecasts, to provide greater visibility to stakeholders.</p> <p>One Customer Advocate sought clarification on the cost savings outlined in Transgrid's Revenue Proposal that are proposed to be delivered for NSW consumers.</p>	<p>HoustonKemp explained that Transgrid leveraged the 'committed project criteria' in the RIT-T in developing load forecasts for the BOP and NW Slopes RIT-Ts. HoustonKemp also outlined a number of considerations which Transgrid seeks to balance, including:</p> <ul style="list-style-type: none"> tangible evidence that the loads will go ahead (this ties back to the RIT-T criteria outlined) when there are several load forecasts in one area, this can provide confidence that in aggregate a certain amount of load will occur in that area; for example, a full project going ahead and not another one that in some cases, project proponents may have an interest in higher forecasts. <p>HoustonKemp explained that Transgrid has provided all confidential information underlying the demand forecasts to the AER and would expect the AER to scrutinise the demand forecasts adopted as part of the regulatory determination process in considering the capex forecast.</p> <p>The AER was unable to comment directly on this during the workshop.</p> <p>Transgrid outlined that it met with the AER's consultant, EMCa, to discuss BOP and NW Slopes RIT-Ts, as part of its review of its initial Revenue Proposal. During this process Transgrid highlighted that the RIT-Ts were currently underway and outlined that they would include updated costs in its Revised Revenue Proposal.</p> <p>Transgrid proposed that it would invite the AER to provide its insights on the process for reviewing the demand forecast for confidential information at a future deep dive.</p> <p>Transgrid's initial Revenue Proposal included estimated costs of \$900m for the top ranked network solutions across both BOP and NW Slopes at that time. Transgrid advised that since submitting its initial Revenue Proposal, it has completed the RIT-Ts and has estimated the costs of the preferred network options for these two projects to be approx. \$280m. As a result, cost savings for consumers will be approx. \$620m (representing the difference between the initial and updated capex).</p>

Key discussion items

Outlined below are the key discussions from Deep Dive Workshop 2, detailing the topics presented, stakeholders' feedback and Transgrid's response. Transgrid's consultant HoustonKemp presented on the RIT-T topic on behalf of Transgrid. Where a response was provided by HoustonKemp rather than Transgrid, this has been noted.

Topic presented by Transgrid	Stakeholder input	How Transgrid responded
<p><u>Value of Customer Reliability (VCR)</u></p> <ul style="list-style-type: none"> HoustonKemp outlined that the VCR is used to quantify the benefit of avoided unserved energy. HoustonKemp outlined the AER develops estimates of VCR which was last done at the end of 2019, and requires a load-weighted VCR to be used for RIT-Ts. HoustonKemp provided the breakdown of the weighted VCR estimate (across residential, commercial and industrial load) for each of the RIT-Ts. 	<p>Stakeholders confirmed that they would like to understand:</p> <ul style="list-style-type: none"> the detail behind the load-weighted VCR estimate used for the central scenario how load-weighted VCR is calculated using the AER VCR values for the customer groups relevant to the region as per AER's guidance. <p>One Customer Advocate reiterated that it is important for stakeholders to have greater visibility of and confidence in demand forecasts where confidentiality is an issue. The stakeholder noted that currently for BOP, they are unable to see the size of the loads, how they have been treated in terms of co-incident loads, and what type of users they are in order to determine whether they are able to undertake demand response or not to mitigate any reliability issues.</p>	<p>HoustonKemp acknowledged this.</p> <p>HoustonKemp subsequently agreed that the calculation of the load-weighted VCR could be provided for future RIT-Ts.</p>
	<p>A Customer Advocate outlined there could be greater transparency on the impact of industrial load on VCR value due to confidentiality claims.</p> <p>The Customer Advocate acknowledged that this approach would make sense.</p>	<p>HoustonKemp explained that the AER requires +/-30% sensitivity analysis on VCRs.</p> <p>HoustonKemp requested views on whether the VCRs should be included in the scenarios as higher and lower values or whether the same VCR values should be applied across all the scenarios, and a separate sensitivity test undertaken on +/- 30% for the central scenario only.</p>
	<p>One Customer Advocate queried whether, as part of the RIT-T analysis, non-network solutions were identified, including loads which could provide demand response (which would defer the need for network investment).</p> <p>The Customer Advocate asked whether the relevant loads were offered financial incentives to provide demand response, noting that otherwise they would lack the necessary incentives to participate, as they do not financially contribute to network investment.</p> <p>The Customer Advocate stated that the type of load and associated interruptibility would provide a better indicator of potential demand response.</p>	<p>HoustonKemp outlined that non-network solutions were considered as part of the analysis. For these RIT-Ts, the loads were not prepared to provide demand response which would have been a non-network solution.</p> <p>HoustonKemp clarified that the loads were asked if they would provide a non-network solution, including payment for demand response.</p>

Key discussion items

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Topic presented by Transgrid	Stakeholder input	How Transgrid responded
<p><u>Value of Customer Reliability (VCR) (cont.)</u></p>	<p>One Customer Advocate expressed concerns around transparency of the demand forecasts, outlining that in the absence of having full visibility of the details around the loads which businesses nominate, stakeholders are unable to interrogate the components of the demand forecasts to determine if they are likely to eventuate, whether it can be used co-incidentally, and what the individual interruptibility might be.</p> <p>The stakeholder outlined support for an independent assessment.</p>	<p>HoustonKemp explained that Transgrid had previously assessed this information against the criteria discussed and asked the stakeholder whether their concerns around the lack of transparency could be addressed by an independent assessment of demand forecast.</p> <p>This was acknowledged by HoustonKemp.</p> <p>Transgrid subsequently committed to commissioning an independent review of demand forecasts for future RIT-Ts, where there are confidential loads and where demand forecasts drive the RIT-T outcome. Transgrid also subsequently committed to commissioning an independent review of the load forecasts adopted for the BOP and NW Slopes RIT-Ts.</p>
<p><u>Network option costs</u></p> <ul style="list-style-type: none"> HoustonKemp noted that network cost estimates are a complex topic which was not proposed to be explored in detail. HoustonKemp noted that Transgrid's approach is that the central scenario should reflect the best estimate of the costs, and that in this instance Transgrid considers this to be a +/- 25% accuracy at this stage in the planning process. HoustonKemp acknowledged that PIAC suggests in its dispute notice that the central cost estimate should be increased to 30% (as being in PIAC's view a more realistic estimate of expected costs). 	<p>One Customer Advocate outlined that -20%/+30% could be applied to cost estimates to address the difficulty in accurately estimating costs at early stages due to unknown costs. However, the stakeholder reiterated that the issue is the lack of confidence in any early transmission investment estimate as they don't have visibility of many of the unknowns.</p> <p>The stakeholder clarified that their recommendation is that the central cost estimate should be accurate, and that in their view, which they stated was informed by AEMO, the most accurate method is to use +30% as an early estimate.</p>	<p>HoustonKemp noted that the accuracy of cost estimates is currently being considered as part of a number of review processes including reviews underway by the AEMC.</p> <p>HoustonKemp reaffirmed that the central estimate should be the best estimate of what the project will cost, however acknowledged the concern around whether in practice the estimates used are within a +/- 25% accuracy.</p> <p>Transgrid committed to the accuracy of cost estimates being discussed in a separate session.</p>
	<p>One Customer Advocate asked Transgrid why it considers that cost estimates for smaller projects will be more accurate than for ISP projects.</p> <p>One Customer Advocate sought to understand whether Transgrid had delivered a project of significant scale and complexity (aside from the Powering Sydney Future's project) and the actual accuracy of costs in comparison to early estimates.</p>	<p>Transgrid outlined that it has a strong and robust delivery history for business as usual projects, and that this information is captured by its MTWO database.</p> <p>Transgrid outlined that QNI was a project of significant scale (in terms of cost) and complexity that had been completed. Transgrid outlined that its actual costs for delivering QNI were within the range of the AER's allowance and that it would share this information with the TAC. Transgrid also acknowledged that it was seeing an increase in actual costs across all projects due to external circumstances outside of its control and that it intended to address this in the unit rates agenda item.</p>

Key discussion items

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Topic presented by Transgrid	Stakeholder input	How Transgrid responded
<u>Network option costs (cont.)</u>	<p>One Customer Advocate asked whether Transgrid would seek an exception from re-doing the RIT-T for BOP and for NW Slopes if the preferred non-network solution falls through.</p>	<p>HoustonKemp explained that Transgrid has proposed in the RIT-Ts that it should not be required to re-do the RIT-T if contractual discussions for non-network solutions do not result in an agreed contract. Rather, in this case (all else equal) it will implement the second ranked network-only solution. However, Transgrid would still be required to submit a contingent project application (CPA) to the AER, which would scrutinise the costs of this second ranked option to ensure that they are efficient and prudent.</p>
	<p>One Customer Advocate asked whether cost increases, driven by external factors such as change to global supply chains and labour shortage issues, had been factored into Transgrid's cost estimates for the projects.</p>	<p>Transgrid clarified that the PACR for both RITs used 2020-21 cost estimates and that it will update these to 2021-22 as part of its Revised Revenue Proposal.</p> <p>HoustonKemp is undertaking analysis to identify whether updating the unit rates to 2021-22 changes the RIT-T outcome.</p>
	<p>One Customer Advocate outlined that the HoustonKemp graph (slide 39 – outlining the impact of adopting a 25% higher network capex in the central scenario on the NPV of different options) captures both network and non-network solutions. The stakeholder commented that the graph should separate out network solutions and show timing.</p>	<p>HoustonKemp outlined that the analysis in the graph covers network and non-network options, but only reflects a 25% increase in the cost of the network component of the NNO options.</p> <p>HoustonKemp acknowledged it is important to unpack sensitivity analysis on a case-by-case basis and noted that timing considerations could be brought out more clearly in future RIT-Ts.</p>
<u>Discount rate</u> <ul style="list-style-type: none"> The 5.50% (central) discount rate used in BOP and NW Slopes RIT-Ts reflects the 2022 ISP assumptions. The 7.50% (upper bound) discount rate used reflects the 2022 ISP assumptions. HoustonKemp outlined that the AER requires the lower bound discount rate to reflect the regulated rate. For the BOP and NW Slopes PACRs, the low discount rate used was 1.96% (AusNet final decision). Currently the latest regulated rate is 2.30% (Powerlink final decision) Adopting 2.30% as the low discount rate for the BOP and NW Slopes PACRs does not change these RIT outcomes. HoustonKemp noted that for the two RIT-Ts, sensitivity tests were conducted for the central scenarios to see whether adopting different discount rates made a difference. 	<p>One Customer Advocate sought to understand what the threshold for a material change is to the RIT-T outcome.</p> <p>The Customer Advocate noted that this seemed counterintuitive as it suggested that the project only becomes unviable with a high cost; the stakeholder sought further context around what is driving this.</p>	<p>HoustonKemp outlined that the RIT-T outcomes for the BOP and NW Slopes RIT-Ts did not change if capex increased by 25%.</p> <p>HoustonKemp acknowledged the feedback of providing a more intuitive explanation of what factors could change the RIT-T outcome in future RIT-Ts.</p>
	<p>Another Customer Advocate sought to understand the impact of wholesale market benefits.</p>	<p>HoustonKemp outlined that the key driver of benefits for the BOP and NW Slopes RIT-Ts is the demand forecasts, and wholesale market benefits was not a large factor for these specific RIT-Ts.</p>
	<p>The stakeholder reiterated that they do not have the necessary context in relation to demand forecasts. They sought clarification from the AER on the justification for information being classified commercial-in-confidence, which was perceived to be the basis on which additional information was withheld.</p>	

Key discussion items

Outlined below are the key discussions from Deep Dive Workshop 2, detailing the topics presented, stakeholders' feedback and Transgrid's response. Transgrid's consultant HoustonKemp presented on the RIT-T topic on behalf of Transgrid. Where a response was provided by HoustonKemp rather than Transgrid, this has been noted.

Topic presented by Transgrid	Stakeholder input	How Transgrid responded
<u>Discount rate (cont.)</u>	One Customer Advocate queried the approach used for scenario weighting, noting the value of the parameters adopted in a scenario will influence the weighting that should be applied to it.	HoustonKemp agreed with the stakeholder and explained that generally more extreme values should be given lower weightings. HoustonKemp suggested an alternative approach could involve including fewer variables in a given scenario and applying sensitivities to these variables, one at a time. It was noted that this approach, which was used for PEC, was criticised at the time.
	The Customer Advocate acknowledged this and said that the high and low scenario approach adopting more extreme values may be acceptable for small projects and has merit.	
	One Financial Investor asked if the lower and upper bound discount rates used reflected current market conditions.	HoustonKemp stated that the AER has prescriptive requirements for discount rates used in RIT-T. Sensitivity analysis was conducted to assess the impact of changing the discount rate on the RIT-T outcome (for the central scenario). The upper and lower bounds tested did not impact the preferred option.
<u>Scenario weightings</u> <ul style="list-style-type: none"> HoustonKemp noted that the AER guidelines do not prescribe an approach to scenario weighting for non-ISP RIT-Ts, other than to say that each scenario should be weighted according to the probability of that scenario occurring. HoustonKemp outlined that the high and low benefits scenarios represent relatively extreme bookends. 	One Customer Advocate outlined that discussion on RIT-T assumptions, scenarios and weightings should be continued in another forum. The stakeholder outlined that they also wanted to address the wholesale market benefits and other elements, that were not discussed as part of today's workshop.	<p>Transgrid acknowledged it was happy to be guided by the TAC on how to proceed.</p> <p>Transgrid proposed an additional Deep Dive workshop to continue the discussion, and this was received positively by stakeholders.</p>

Key discussion items

Outlined below are the key discussions from Deep Dive Workshop 2, detailing the topics presented, stakeholders' feedback and Transgrid's response.

Topic presented by Transgrid	Stakeholder input	How Transgrid responded
<p>System Security</p> <ul style="list-style-type: none"> Transgrid noted that there had been several other Deep Dives with the TAC to discuss System Security, and noted that the purpose of the workshop was to discuss the costs and inputs for its Revised Revenue Proposal. Transgrid noted the energy transition would impact the network over the next 10 years and this was being considered. Transgrid has engaged PowerRunner, an energy consulting and software company, to help understand what the systems security impact will be in light of these major changes. PowerRunner has conducted a gap analysis and outlined the systems, tools, processes and workforce investments needed to maintain Transgrid's system security. Transgrid would need to invest approx. \$85m capex in the next regulatory control period across two areas: new technologies and additional capacities to meet human resource requirements. Transgrid outlined the benefits for consumers in terms of reducing the risk of system security incidents and associated unserved energy. Transgrid outlined that PowerRunner expected these types of events to increase significantly, however the investment did materially decrease this risk. 	<p>It was noted by one Customer Advocate that it is clear that a system security roadmap is required to cope with a more complex environment. However, as most of this complexity is due to changes in the supply side, it may seem unfair to consumers, as they have no control over this. The stakeholder expressed the view that those creating the complexity should pay in the first instance.</p> <p>One Financial Investor sought clarification on how new technologies are integrated into existing technology and whether these integration challenges and costs have been considered.</p> <p>One Customer Advocate asked the extent to which Transgrid had looked at staged planning and integration.</p>	<p>This was acknowledged by Transgrid.</p> <p>Transgrid noted that integration costs formed the majority of the costs, including how new technologies are tailored to Transgrid's needs and to meet compliance obligations.</p> <p>Transgrid is currently in the process of determining how it will take this project into an actual implementation plan and considering pros and cons of different implementation models and frameworks. Transgrid outlined that uptake is not an issue as these new technologies are only for a subset of specialised Transgrid employees.</p>

Key discussion items

Outlined below are the key discussions from Deep Dive Workshop 2, detailing the topics presented, stakeholders' feedback and Transgrid's response.

Topic presented by Transgrid	Stakeholder input	How Transgrid responded
<p>Systems Security (cont.)</p>	<p>One Customer Advocate outlined that a lot of the benefit case relied on avoiding a black start event. The stakeholder asked how the likelihood of a black start event was calculated.</p> <p>The Customer Advocate requested further information on drivers for the six-fold increase in black start likelihood from 2022 to 2030.</p> <p>The Customer Advocate acknowledged the drivers of complexity outlined by Transgrid, however disagreed with the likelihood of some of the factors.</p>	<p>Transgrid advised that the analysis was based on PowerRunner's analysis of South Australia and USA blackouts.</p> <p>Transgrid outlined that the likelihood of system security incidents will increase with increased renewable generation and DER on the network.</p> <p>Transgrid outlined the drivers of complexity that were considered. These were:</p> <ul style="list-style-type: none"> • the tripling of inverter-based renewable generation over that period • introduction of renewable energy zones, potentially with several network operators across NSW • rapid retirement of coal generators which have historically provided a systems security buffer • development of major transmission infrastructure project concurrently which require more planned outages • substantial increase in distributed generation which creates challenges in times of low demands. <p>Transgrid acknowledged the feedback and advised that it was based on PowerRunner's expert advice.</p>

Key discussion items

Outlined below are the key discussions from Deep Dive Workshop 2, detailing the topics presented, stakeholders' feedback and Transgrid's response.

Topic presented by Transgrid	Stakeholder input	How Transgrid responded
Systems Security (cont.)	The Customer Advocate commented that the business case outlined was dependant on what they believed was a low probability event. The stakeholder noted that it was the first time they had seen numbers of that magnitude for a black start event, particularly compared to analysis done by the Reliability Panel or AEMO, and other reliability-based assessments. The stakeholder outlined that they believed the overall requirements for the projects make sense, but the numbers did not align.	This was acknowledged by Transgrid. Transgrid advised that its aim was to ensure that the complexity of the system is addressed now and not as a lesson learnt from a black out (which occurred in the USA). Transgrid indicated it would consider any opportunities to connect with the Reliability Panel for further information.
	One Customer Advocate responded to a comment made about the contestable operation of the market, expressing that while having different network owners in NSW is acceptable, there should be only one network operator – Transgrid. The stakeholder outlined that they felt it was premature to say that there is contestable operation of the system and expressed concern about anyone other than Transgrid having responsibility for operating key parts of the system, to the point where it did result in a higher risk of an intermediate or catastrophic event.	This was acknowledged by Transgrid.
	The Customer Advocate outlined that the specific likelihood of a black start event needs to be sensitivity checked and asked for a particular (~50%) sensitivity check to be undertaken on the 2030 likelihood.	Transgrid stated that this sensitivity analysis had not yet been conducted and this would be actioned. However, Transgrid did conduct analysis outlining that the risk of one 'catastrophic' incident (black start event) had to be reduced on an absolute basis by 8% between now and 2030 for benefits to exceed costs. Transgrid advised it would provide additional information to clarify the assumptions underpinning this modelling.

Key discussion items

Outlined below are the key discussions from Deep Dive Workshop 2, detailing the topics presented, stakeholders' feedback and Transgrid's response.

Topic presented by Transgrid	Stakeholder input	How Transgrid responded
Next Steps	Stakeholders expressed a desire to have further opportunity to engage on the topics discussed, particularly in relation to RIT-T assumptions, inputs and forecast expenditure.	Transgrid acknowledged this request and agreed to hold additional workshops.
	One Customer Advocate commented that they believe the workshop facilitated a good level of engagement and that they were happy with the process. The stakeholder acknowledged that while it can be challenging to cover all topics in detail, it had been a very positive session. They also noted that stakeholders may need more time to discuss particular items in further detail.	This was acknowledged by Transgrid.
	One Financial Investor agreed it had been a constructive conversation and expressed that it was positive Transgrid had taken the time to discuss these topics in detail	This was acknowledged by Transgrid.

Appendix: Attendance

Participants

Stakeholder Name	Organisation	Stakeholder Type	Attendance
Andrew Richards	Energy Users Association Australia	Customer Advocate	Attended
Gavin Dufty	St Vincent de Paul	Customer Advocate	Attended
Craig Memery	Public Interest Advocacy Centre	Customer Advocate	Attended
Tennant Reed	Australian Industry Group	Customer Advocate	Attended
Panos Priftakis	Snowy Hydro	Direct connect customer	Attended
Scott Young	Commonwealth Bank Australia	Financial investor	Attended
Slavko Jovanoski	AER	Observer	Attended
Albert Tong	AER	Observer	Attended
Andrew McGill	AER	Observer	Attended
Daniel Feng	AER	Observer	Attended
Christine Xue	AER	Observer	Attended
Elissa Freeman	CCP	Observer	Attended
Mike Swanston	CCP	Observer	Attended
Nick Savage	NSW Farmers	Customer Advocate	Apology
Brian Spak	Energy Consumers Australia	Customer Advocate	Apology
Sam Fyfield	Goldwind	Direct connect customer	Apology
Iain Maitland	Ethnic Communities Council NSW	Customer Advocate	Apology
Maria Cahir	Tesla	Direct connect customer	Apology
Dev Tayal	Tesla	Direct connect customer	Apology
Luke Rankovich	Tomago Aluminium	Direct connect customer	Apology
Nicola Falcon	AEMO	Market Body	Apology
Michael Ottaviano	ERM Advisory	Expert advisor	Apology
Christiaan Zuur	Clean Energy Council	Industry Advocate	Apology
Chloe Bennett	Aboriginal Affairs NSW	Customer Advocate	Apology
Kim Woodbury	City of Sydney	Direct connect customer	Apology
Warwick Anderson	AER	Observer	Apology
Roselle Mailvaganam	AER/ACCC	Observer	Apology
Richard McGill	AER	Observer	Apology
Daniel Wotherspoon	AER	Observer	Apology
Kevin Cheung	AER	Observer	Apology
Robert Nicholls	CCP	Observer	Apology

Appendix: Attendance

Facilitators and Observers

Stakeholder Name	Organisation	Attendance
Brian Salter	Transgrid ELT	Attended
Craig Stallan	Transgrid ELT	Attended
Stephanie McDougall	Transgrid	Attended
Robert Alcaro	Transgrid	Attended
Sarah Lim	Transgrid	Attended
Fiona Orton	Transgrid	Attended
Kasia Kulbacka	Transgrid	Attended
John Howland	Transgrid	Attended
Kevin Hinkley	Transgrid	Attended
Edward Luk	Transgrid	Attended
Charles-Edouard Mariolle	Transgrid Board	Attended
Gerard Reiter	Transgrid Board	Attended
Gordon Hay	Transgrid Board	Attended
Rachel Tan	Transgrid Board	Attended
Louise Pogmore	KPMG	Attended
Hannah Lock	KPMG	Attended
Grace Smith	KPMG	Attended
Ann Whitfield	HoustonKemp	Attended
Liam Hickey	HoustonKemp	Attended
Tom Graham	HoustonKemp	Attended



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