



2014/15 – 2018/19

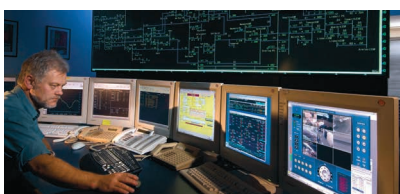
Revenue proposal overview



Contents

TransGrid's role is to provide efficient, reliable transmission services to New South Wales, the Australian Capital Territory and the National Electricity Market.

1.



Introduction 2

2.



Overview 4

6.



Rate of Return 9

7.



Other Topics 10



3.



Revenue **5**

4.



Capital Expenditure **6**

5.



Operating Expenditure **8**

8.



Key Risks and Benefits **11**

9.



Consumer Engagement **13**

Introduction

TransGrid owns and operates the main high voltage electricity transmission network in New South Wales and the Australian Capital Territory.

Most of the state's electricity is generated at large coal, gas, hydro and wind power stations. It travels in bulk through TransGrid's network across the state, and is then delivered locally to homes, factories and businesses by electricity distributors such as Ausgrid, Essential Energy, Endeavour Energy and ActewAGL.

In this sense, transmission networks have a similar role to highways and freeways in the road system.

The costs of generation, transmission, distribution and retail are paid by consumers through electricity bills.

The cost of transmission in New South Wales and the Australian Capital Territory is made up of TransGrid's revenue and the revenue of a few smaller transmission companies. On average, the cost of transmission makes up about 7% of an electricity bill for homes and small businesses.

Because it would not be cost effective to run multiple transmission networks, transmission companies are known as "natural monopolies". This means that, as there is no competition, TransGrid's revenue is set by an external regulator.

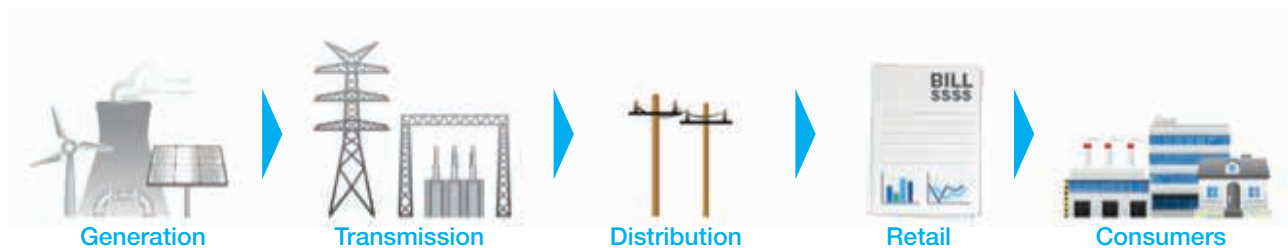
Periodically, TransGrid submits a revenue proposal to the Australian Energy Regulator (AER) setting out the revenue it requires for an upcoming period, which is

normally five years. In this proposal, TransGrid has proposed a four year period, which will facilitate alignment of regulatory periods for electricity transmission companies. Following a review of TransGrid's proposal and process of public consultation, the AER makes a determination that sets TransGrid's revenue for those years in advance.

TransGrid submitted a revenue proposal for the 2014/15 to 2018/19 period in May 2014.

TransGrid's network spans the eastern seaboard of New South Wales, from Queensland to Victoria, and stretches as far west as Broken Hill. It comprises 96 bulk supply substations and over 12,900 kilometres of high voltage transmission lines.

The Electricity Supply Chain





TransGrid's Network



Overview

TransGrid manages its network in line with international standards for asset management.

The equipment used in transmission networks is large and specialised, and much of it has a design life of 40 to 50 years. Therefore, it must be properly managed to ensure it performs acceptably over its whole life.

The activities TransGrid carries out to manage its network are shown below.

The activities shown in light blue are considered operating expenditure. This is the day-to-day expenditure required to plan, operate and maintain the network.

It includes activities to support the business such as information technology, human resources, health and safety management and

financial management. Operating expenditure is entirely funded from TransGrid's revenue each year.

The activities shown in dark blue are considered capital expenditure. This is expenditure on equipment used in the transmission network or used to support the business.

Rather than funding the total cost of the equipment from revenue when it is installed, usual business practice is to source capital to procure the equipment through:

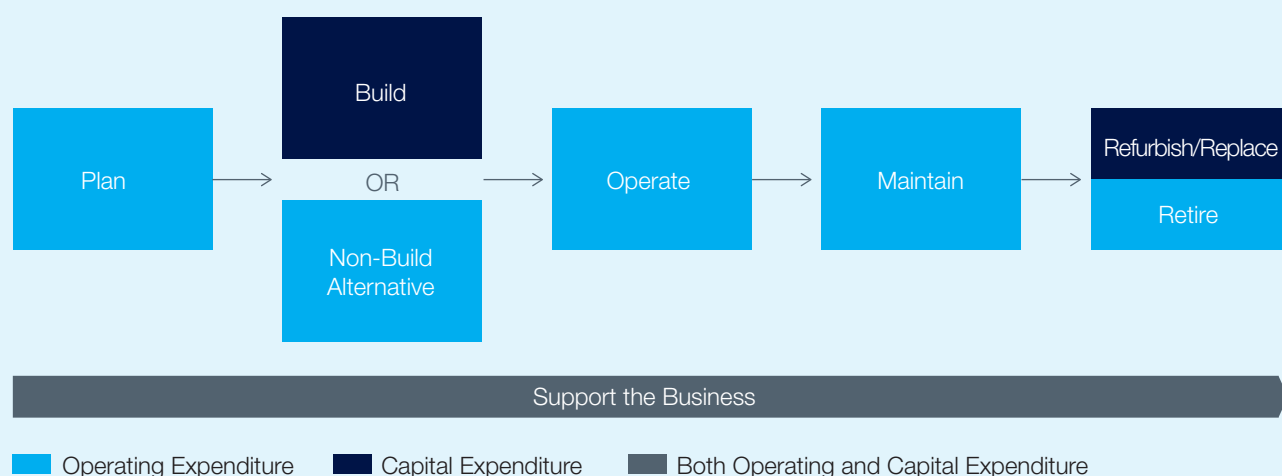
- equity, which is raised from investors, and
- debt, which is raised by borrowing funds that are repaid over the life of the equipment, similarly to a home loan.

The cost of servicing the equity and debt is funded from TransGrid's revenue each year.

The following sections provide an overview of:

- proposed revenue and its effect on electricity prices;
- proposed capital expenditure;
- proposed operating expenditure;
- rate of return; and
- other topics discussed in the revenue proposal

TransGrid's Activities to Manage its Network



Revenue

TransGrid's revenue covers the cost of providing its transmission services.

The revenue includes allowances for:

- operating expenditure;
- funding costs for
 - existing equipment (asset base); and
 - new equipment (capital expenditure)
- depreciation; and
- tax obligations.

TransGrid's revenue comes from electricity bills, and comprises around 7% of the average electricity bill for homes and small businesses.

Electricity consumers in NSW and the ACT pay amongst the lowest transmission costs in the national electricity market. The graph below shows the contributions of the major transmission networks in each state to an indicative electricity bill.

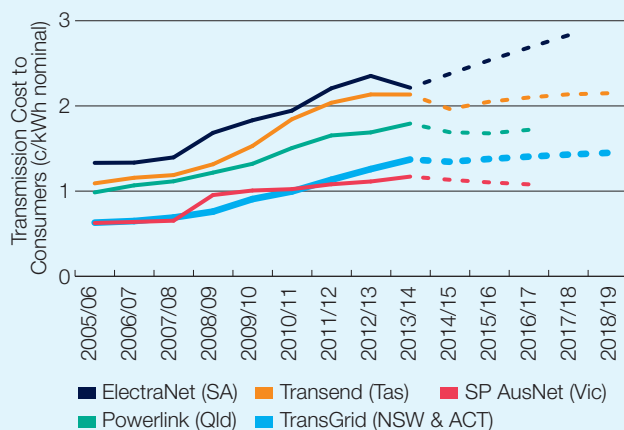
There will be a reduction in TransGrid's annual revenue allowance from 2013/14 to 2014/15. The annual changes in revenue will then remain within inflation for the remaining years.

The total revenue over the next five years is higher than over the last five years. This reflects investments made in the network over the last five years that have been necessary to maintain an appropriate level of reliability, safety and environmental performance. It also includes operating expenditure to meet new regulatory obligations and increased social responsibilities.

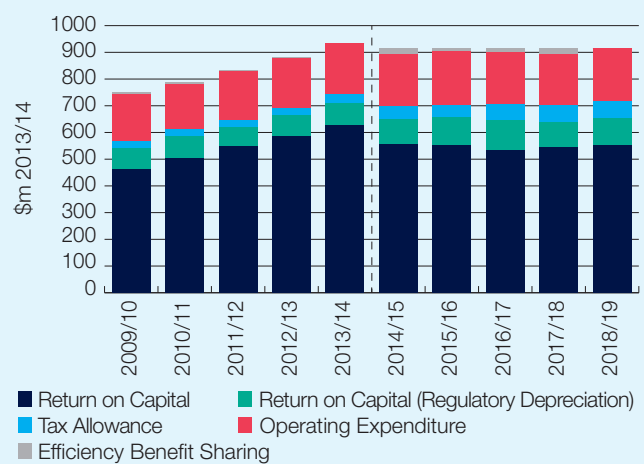
The calculation of TransGrid's proposed revenue is set out in Chapter 13 of the revenue proposal.

“TransGrid's revenue allowance will remain within inflation over the next five years.”

Transmission Cost to Consumers



Comparison of Revenue



Total revenue over the last five years is \$4,183 million and proposed revenue over the next five years is \$4,572 million (in 2013/14 dollars).

Capital Expenditure

The mix of capital expenditure in the next five years is significantly different from any period in recent history for TransGrid.

The use of electricity has reduced slightly over the last few years, due to:

- the impact of global economic conditions, which has led to the closure of some major industrial consumers;
- widespread installation of domestic solar panels;
- more use of energy efficient appliances; and
- lower electricity use by residential consumers.

TransGrid has responded to the change in environment. It has:

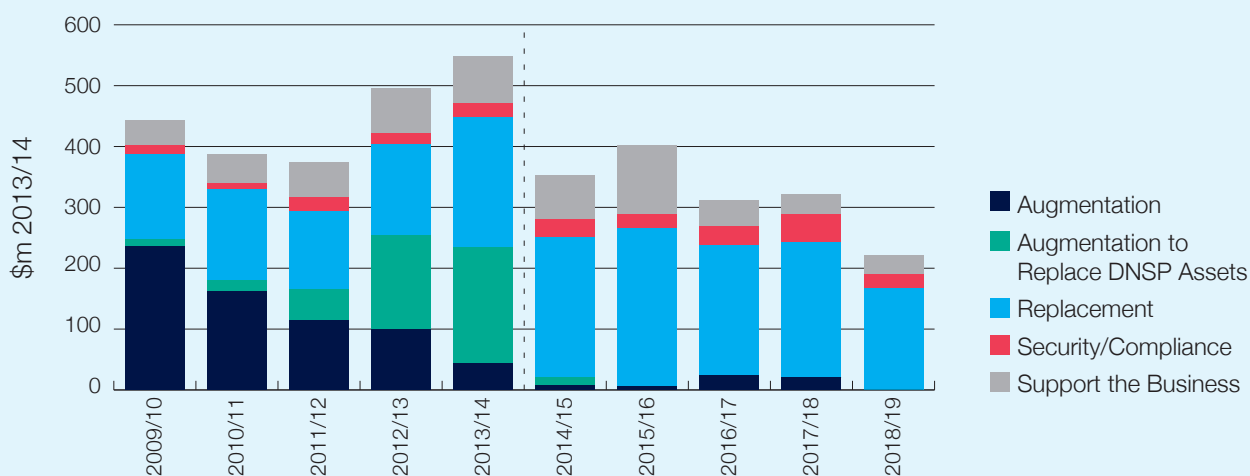
- deferred over \$600 million of capital expenditure, over the last five years, that was originally planned but not required following the change in electricity use;
- improved project initiation and delivery processes to be able to respond more rapidly to needs as they arise and make investment decisions closer to the need for the investment;

- reviewed its consultation processes to engage with consumers earlier, when the need for the project is being assessed;
- pursued non-build approaches to defer capital expenditure while still meeting supply requirements; and
- proposed contingent projects in the revenue proposal to be able to respond if the environment changes again such that additional transmission capacity is required.

TransGrid has proposed a non-build approach to defer \$430 million of expenditure to supply the Sydney inner metropolitan area.

“Capital expenditure is forecast to be 28% lower in the next five years than the last five years.”

Comparison of Capital Expenditure





The mix of capital expenditure over the next five years is significantly different from any period in recent history for TransGrid:

TransGrid has tested the efficiency of its capital expenditure by engaging leading Australian engineering consulting companies to carry out external reviews and benchmarking:

- GHD has reviewed a representative sample of TransGrid's proposed capital projects, and found that they reflect good industry practice and are prudent and efficient;
- SKM has reviewed TransGrid's estimating system, and found that the costs in the system reflect efficient prices;
- TransGrid has compared a sample of project estimates with independent external estimates for the same scope sourced from Aurecon, PB and SKM. The external estimates generally correlate with TransGrid's estimates, indicating that TransGrid's estimates are reasonable; and
- TransGrid engaged UMS to undertake an international benchmarking comparison of capital expenditure efficiency. The results indicate that TransGrid's capital expenditure is lower cost than average amongst international peers.



Expenditure to increase capacity on the network has reduced to less than 10% of its level over the last five years, reflecting the recent moderation in electricity usage.



Expenditure to replace assets has increased by about 40% from that of the last five years, reflecting equipment built during the establishment of the transmission network in the 1950s and 1960s reaching the end of its useful life.



Expenditure to meet security and compliance requirements has increased by about 70% from that of the last five years, mainly due to projects to remediate transmission line spans that have been found by a new accurate measurement technology not to meet statutory clearances from the ground.



Capital expenditure to support the business continues at about the same level as in the last five years.

The actual capital expenditure over the last five years and proposed capital expenditure over the next five years are shown at the left.

TransGrid's forecast capital expenditure is set out in Section 5.3 of the revenue proposal, and non-build options are discussed in Section 5.4. The external reviews and benchmarking that demonstrate the efficiency of TransGrid's capital expenditure are set out in Section 5.7.

Operating Expenditure

Over the last five years TransGrid has pursued a range of operational efficiencies. The cost savings benefit consumers through lower forecast operating expenditure.

Operating expenditure is required to appropriately maintain the 96 substations, 12,900 kilometres of transmission lines and supporting control systems that provide electricity when consumers depend on it.

Operating expenditure also allows TransGrid to plan the development of the network, monitor and respond to issues on the network 24 hours a day and undertake supporting activities such as information technology, fleet management and health and safety management.

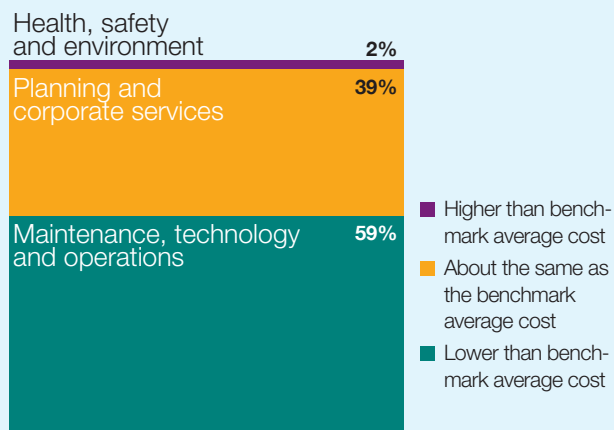
TransGrid has tested the efficiency of its operating expenditure through independent external reviews and benchmarking.

- TransGrid participates in a number of industry studies, in order to benchmark its costs, as part of its commitment to continuous improvement and to stay at the frontier of good electricity industry practice. Many of the benchmarks show that TransGrid's costs are in line with or below its peers, both internationally and within Australia.
- TransGrid is efficient according to benchmarks published by the AER that compare cost ratios against network size.

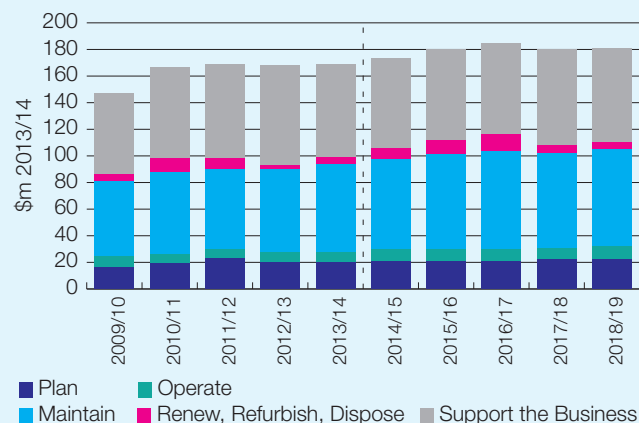
Operating expenditure is generally consistent from year to year. Therefore, most operating expenditure is forecast by projecting forward an efficient "base year" that is representative of recurrent operating expenditure. A small number of categories are forecast based on specific estimates, where this better reflects TransGrid's efficient costs.

Over the last five years, TransGrid has reduced its recurrent operating expenditure by over \$6 million per year through process efficiencies and improved procurement. TransGrid proposes a further \$3 million reduction in operating expenditure due to a change in office accommodation and further process efficiencies.

Benchmarking outcomes for operating expenditure



Comparison of Operating Expenditure



Figures are presented on a cash entitlements basis. The lower than trend expenditure in 2009/10 is because TransGrid made lower than normal employer contributions to defined benefit superannuation schemes following a period of strong performance in share markets.

Rate of Return

TransGrid is proposing a rate of return of 8.83%.

TransGrid also has a number of new obligations it is required to meet in the next five years, and increases in social responsibilities for which consumers have indicated support. The new obligations primarily arise from new guidelines published by the AER in 2013, and social responsibilities primarily comprise increases in research into demand management and consumer engagement. In total, these require an increase in operating expenditure of around \$7.5 million per year.

The actual operating expenditure over the last five years and proposed operating expenditure over the next five years are shown to the left.

“TransGrid has a culture of continuous improvement and innovation.”

TransGrid's forecast operating expenditure is set out in Section 6.3 of the revenue proposal. The external reviews and benchmarking that demonstrate the efficiency of TransGrid's operating expenditure are set out in Section 6.6.

Rather than funding the total cost of the equipment from revenue when it is installed, usual business practice is to source capital to procure the equipment through:

- equity, which is raised from investors; and
- debt, which is raised by borrowing funds that are repaid over the life of the equipment, similarly to a home loan.

The rate of return covers the cost of funding existing and new equipment.

TransGrid is allowed a rate of return that matches the efficient financing costs of a benchmark efficient company with a similar degree of risk as TransGrid.

A rate of return that is too low is likely to lead to underinvestment in network equipment and affect the reliability of the network in the long term. A rate of return that is too high could lead to overinvestment in network equipment and affect electricity prices in the short term.

TransGrid has considered a wide range of information and is proposing the rate of return that best matches efficient financing costs and will provide the right level of investment in its network.

TransGrid is proposing a rate of return of 8.83%, calculated before the effect of tax on debt, as required by the regulatory framework. However, most businesses reference a post tax rate of return. The rate of return requested by TransGrid is equivalent to a 7.09% post tax rate of return.

The rate of return will change each year to reflect market movements in the cost of debt.

“The rate of return is the return a business earns on its investments to fund the costs it has incurred in making these investments.”

The derivation of TransGrid's proposed rate of return is set out in Chapter 8 of the revenue proposal.

Other Topics

Incentive Schemes

TransGrid is subject to three incentive schemes that provide financial incentives to reduce its expenditure in a sustainable way, while maintaining the performance of the network. The schemes are:

- the efficiency benefit sharing scheme, which provides an incentive to sustainably reduce operating expenditure through efficiencies;
- the capital expenditure sharing scheme, which provides an incentive to sustainably reduce capital expenditure through efficiencies; and
- the service target performance incentive scheme, which provides an incentive to maintain or improve the reliability and capability of the network.

The capital expenditure sharing scheme is a new incentive scheme that will apply from 1 July 2015.

The outcomes of these schemes benefit consumers. Over the last five years, TransGrid has reduced its expenditure through efficiencies and maintained the performance of the network.

TransGrid proposes to apply the incentive schemes generally in line with guidelines published by the AER. It proposes one improvement to the efficiency benefit sharing scheme to provide a better incentive for non-recurrent expenditure.

The efficiency benefit sharing scheme is set out in Chapter 14 of the revenue proposal. The capital expenditure sharing scheme is set out in Chapter 15, and the service target performance incentive scheme is set out in Chapter 16.

Shared Assets

Shared assets are items of equipment used in the electricity network that TransGrid also uses to earn other revenue. When the equipment is installed, TransGrid allocates the cost of this equipment so that electricity consumers only pay for the share of the equipment they use.

Occasionally an asset will be initially used for electricity transmission only and later used to earn other revenue. It then becomes a shared asset.

TransGrid has proposed no cost reductions for shared assets as the other revenue is below the materiality threshold established by the AER.

Shared assets are discussed in Chapter 12 of the revenue proposal.

Depreciation

TransGrid's calculation of forecast depreciation is set out in Chapter 10 of the revenue proposal.

Tax

TransGrid's estimate of corporate income tax is set out in Chapter 11 of the revenue proposal. The proposed approach to imputation credits is set out in Chapter 9.

Cost Pass Through Arrangements

Cost pass through arrangements provide for adjustments to the allowed revenue if a non-controllable predefined event occurs that leads to a material change in TransGrid's costs.

These are set out in Chapter 17 of the revenue proposal.

Key Risks and Benefits

Key Risks	
Ability to deliver the level of service consumers expect	<p>Consumers view TransGrid as providing an essential service</p> <p>TransGrid has proposed efficient levels of operating and capital expenditure to maintain the current risk profile of the network and, in doing so, the current level of service</p>
Underinvestment in the network	<p>Underinvestment in the network may reduce reliability and lead to a “bow wave” of replacements in the future, which can in turn lead to price shocks</p> <p>TransGrid manages its network over the long term, and has proposed an appropriate level of investment to sustainably maintain the reliability, safety and environmental performance of the network</p>
Overinvestment in the network	<p>Overinvestment in the network may lead to higher than necessary prices</p> <p>TransGrid has thoroughly considered options to address each of its network needs and subjected its investment plans to external review to confirm they reflect an appropriate level of investment</p>
Undermaintenance of the network	<p>Undermaintenance of the network may reduce reliability due to a lack of equipment care, which would reduce equipment lives and lead to higher prices in the long term</p> <p>TransGrid maintains its network in accordance with good electricity industry practice</p>
Rate of return lower than the costs of an efficient business	<p>A rate of return that is too low is likely to lead to underinvestment in network equipment and affect the reliability of the network in the long term</p> <p>TransGrid has considered a wide range of information and is proposing the rate of return that best matches efficient financing costs</p>
Rate of return higher than the costs of an efficient business	<p>A rate of return that is too high could lead to overinvestment in network equipment and affect electricity prices in the short term</p> <p>TransGrid has considered a wide range of information and is proposing the rate of return that best matches efficient financing costs</p>
Continued decline in electricity use	<p>TransGrid has reviewed the major projects in its capital portfolio against a scenario of falling peak demand, and confirmed that they are still required</p> <p>TransGrid has decided to decommission, rather than rebuild, a transmission line between Wallerawang and Orange North based on the most recent load forecasts</p> <p>TransGrid has prioritised its low span remediation projects over ten years, rather than five years, to be able to reassess in five years time whether the lower priority projects are still required</p> <p>TransGrid has proposed a network support solution to defer capital expenditure on the Powering Sydney’s Future Project, and enable it to better respond to changing drivers that may affect the timing of a network solution</p>



Key Risks

<p>Increase in electricity use</p>	<p>Some scenarios of future economic conditions could reverse the recent decline in electricity use</p> <p>TransGrid has proposed two contingent projects in the proposal that will enable it to respond to changes in patterns of electricity use across the network, and will only be triggered if required</p> <p>TransGrid has proposed a four year regulatory control period, which will enable it to update its forecasts for the next revenue determination sooner than normal</p>
<p>The appropriateness of cost and reliability incentives</p>	<p>TransGrid has responded to regulatory incentives over the last five years, improving the efficiency of its business and maintaining the reliability of its transmission services</p> <p>TransGrid will continue to respond to the regulatory incentives established by the AER in its upcoming revenue determination</p>
<p>Continued changes in electricity use lead to a significant change in industry structure, with an adverse effect on electricity price</p>	<p>TransGrid supports ongoing research into various scenarios for Australia's energy future</p> <p>TransGrid is proactively pursuing innovation in energy efficiency and demand management, to better manage peak demand on the network</p> <p>TransGrid is advocating changes to network planning and reliability standards</p>

Benefits

- TransGrid's expenditure plans will maintain an appropriate level of service, ensuring that electricity continues to be available when consumers depend on it
- TransGrid has ensured that its expenditure plans are efficient through external reviews and benchmarking
- TransGrid has contained the forecast change in maximum allowed revenue to within inflation
- TransGrid has proposed a rate of return that reflects efficient costs
- TransGrid has planned to defer the installation of new equipment where possible, through lower cost non-build options
- TransGrid continues to operate its network in line with an internationally recognised asset management standard and good electricity industry practice
- TransGrid continues to ensure the safety of its network

Consumer Engagement

TransGrid has established a comprehensive consumer engagement program to give consumers a voice and inform TransGrid's business plans into the future.

A range of approaches has been taken to consumer engagement to capture as representative a sample of views, understandings, priorities and concerns as possible.

TransGrid has listened to consumers and taken their feedback into consideration during the preparation of the revenue proposal. Full reports on the forums and workshops are on TransGrid's "Have Your Say" website, www.yoursaytransgrid.com.au.

The main feedback provided by consumers is as follows.

Balance of Price and Reliability

Consumers were generally satisfied with the level of reliability of the transmission network and pleased that TransGrid is planning for the future. In a survey of 650 residential and small business consumers, the majority indicated that they were willing to pay a slight increase, within inflation, to maintain the reliability of the transmission network.

TransGrid's proposed equipment replacement program is based on assessments of asset condition risk, to maintain the reliability of the network and manage safety and environmental risks.

Engagement approach



Residential and small business users

- Metropolitan and regional focus groups
- Community roundtables
- Deliberative forums
- Consumer surveys
- Online engagement
- Fact sheets



Large energy users

- Workshops
- Direct briefings
- Online engagement
- Written communication
- Fact sheets



Consumer, industry and business groups

- Workshops
- Direct briefings
- Online engagement
- Written communication
- Fact sheets

Demand Forecasts

Some large energy users raised the concern that demand forecasts may not sufficiently take into account the challenges facing the manufacturing sector, and may be optimistic.

Given this uncertainty, TransGrid has assessed its capital portfolio against a scenario of falling peak demand and is satisfied that it is the most appropriate portfolio across a range of scenarios.



The topics TransGrid discussed with consumers are as follows.

Revenue proposal

- Operating expenditure
- Augmentation capital expenditure
- Replacement capital expenditure
- Rate of return
- Benchmarks and historical comparisons
- Overall acceptability of revenue proposal

Pricing methodology

- Peak demand management
- Cost reflective pricing
- Demand versus energy pricing
- Improving price certainty
- Pricing reform opportunities

Other topics

- Balance of price and reliability
- Forecasting and network planning
- Management of stranded assets
- Non-build options and demand management
- Integrating renewable energy
- Engagement strategy
- Improvements to community consultation practices

Demand Management

Demand management is an arrangement whereby electricity users can opt to be available to reduce their electricity consumption during times of high demand. This can be useful to networks as an alternative to increasing network capacity.

Consumers were generally supportive of initiatives to reduce peak demand and reduce or defer network investment.

Project Consultation

During the forums, TransGrid presented a new approach to consultation on major projects, which it has adopted following recent reviews of its consultation processes. Consumer representatives and large energy users strongly supported TransGrid's improved approach to consultation.

TransGrid is using this approach for the Powering Sydney's Future project.

Management of Stranded Assets

Recent changes in technology and electricity use have raised the prospect of consumers going "off grid", that is, being entirely self sufficient with local electricity supplies rather than taking supplies from the grid or having the grid as a backup. Shifts in electricity generation sources may also occur over the next few decades.

Consumer advisory representatives asked TransGrid to consider the implications of these scenarios, particularly if some existing transmission capacity is no longer required as a result.



How to Assist Consumers Evaluate the Revenue Proposal

TransGrid would be able to respond to these scenarios by removing capacity and relocating equipment to replace other equipment on its network. TransGrid will also give further consideration to implications for transmission pricing.

Pricing

In developing its pricing methodology, TransGrid adopted an open and transparent consultation process, canvassing stakeholder views and understanding the potential impact on customers and consumers.

As a direct result of this consultation, the proposed pricing methodology sets out six key changes. They include moving to prices based on peak demand, sharing the cost of spare capacity across all customers, excess demand charges to be cost reflective and enabling TransGrid to provide certainty for customers.

These changes are discussed further in an explanatory statement in Appendix AH of the revenue proposal.

TransGrid sought consumers' views on how it could best assist them to evaluate its revenue proposal.

Residential and small business consumers were generally happy to leave TransGrid's assessment to the AER, although they placed importance on consumer engagement on the key principles driving the proposal.

Consumer advisory representatives supported TransGrid making detailed planning documents available for those who were interested, and were keen for TransGrid to produce brief summaries on large projects in language that is easy to understand.

TransGrid has:

1. published brief summaries on large projects on TransGrid's interactive map on the "Have Your Say" website.
2. commissioned reviews of its forecast capital expenditure by external experts
3. provided detailed planning documents to the AER to substantiate its forecast capital expenditure

Further detail on TransGrid's consumer engagement program and the feedback received from consumers is provided in Section 3.7 of the revenue proposal and a summary of consultation in Appendix F. Specific feedback that has been taken into account in forecast capital expenditure is discussed in Section 5.9.3, and specific feedback on forecast operating expenditure is discussed in Section 6.8.3.

Acceptability of Capital Expenditure

In a survey of 650 residential and small business consumers, TransGrid presented brief background information on its role, operations and plans and sought participants' feedback on the acceptability of its forecast capital expenditure.

The majority of respondents considered TransGrid's proposed capital expenditure highly acceptable or fairly acceptable.

This aligns with feedback received in more in-depth consumer forums with residential and small business consumers.

Acceptability of Operating Expenditure

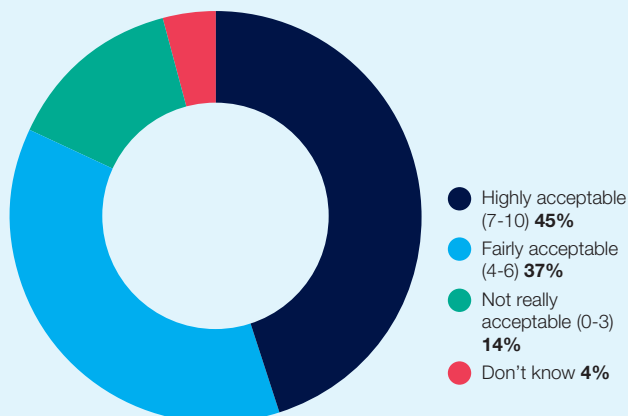
In a survey of 650 residential and small business consumers, TransGrid presented brief background information on its role, operations and plans and sought participants' feedback on the acceptability of its forecast

operating expenditure. This included specific increases for research into demand management and consumer engagement.

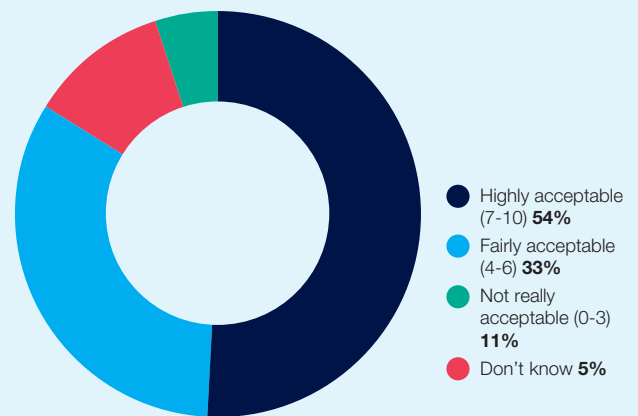
The majority of respondents considered TransGrid's proposed operating expenditure highly acceptable or fairly acceptable. This aligns with feedback received in more in-depth consumer forums with residential and small business consumers.

How acceptable to you is TransGrid's proposal to increase its spending on capital investment roughly in line with inflation, to fund the replacement of ageing infrastructure so that it can maintain current service levels and continue to meet consumer demand? Scale: 0 – not at all to 10 – totally acceptable.

This equates to an extra \$1.16 in an average household's quarterly bill in the first year, \$2.31 per quarterly bill in the second year, and so on, rising to \$5.78 per quarterly bill in the fifth year of the plan.



In principle, how acceptable to you is TransGrid's proposal to increase spending on operating expenditure roughly in line with inflation – i.e. by 16 cents per quarterly bill in the first year, rising to 79 cents per quarterly bill in the fifth year? Scale: 0 – not at all to 10 – totally acceptable.



“The feedback TransGrid received over the consultation period helped to develop and shape the final proposal, and ensure that it is aligned to consumers’ long term interests.”





Contact us

PO Box A1000

Sydney South NSW 1235

Phone 1800 222 537

Email community@transgrid.com.au

Web www.transgrid.com.au