



**TransGrid**

# Revenue Proposal Overview

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2018/19 - 2022/23

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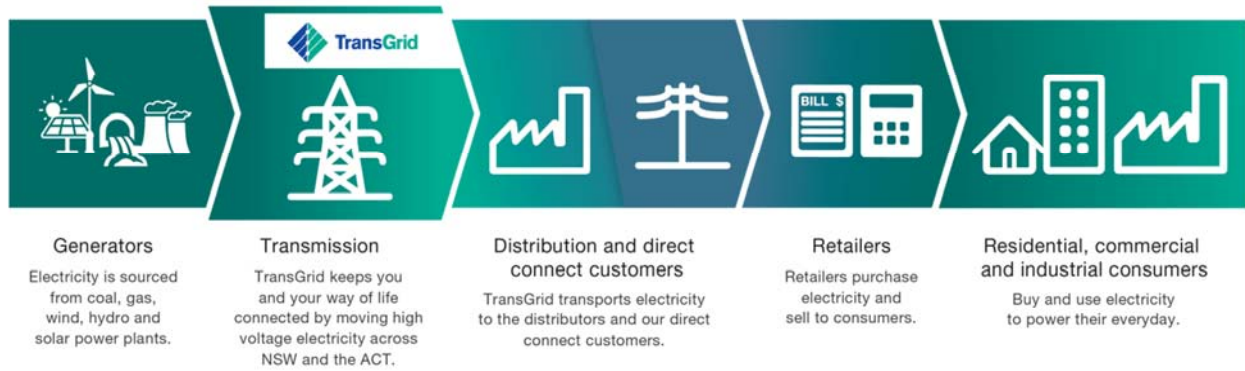
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# 1. Introduction







TransGrid operates and manages the NSW and ACT high voltage electricity grid; connecting you to the energy you need 24/7. Every day we enable more than 3 million homes and businesses to access a safe, reliable and affordable supply of electricity. In December 2015, TransGrid became a private company. Our owners are focussed on shaping the grid of the future to ensure it meets your energy needs in a safe, reliable, efficient and sustainable manner.

## Our role in connecting you to your energy

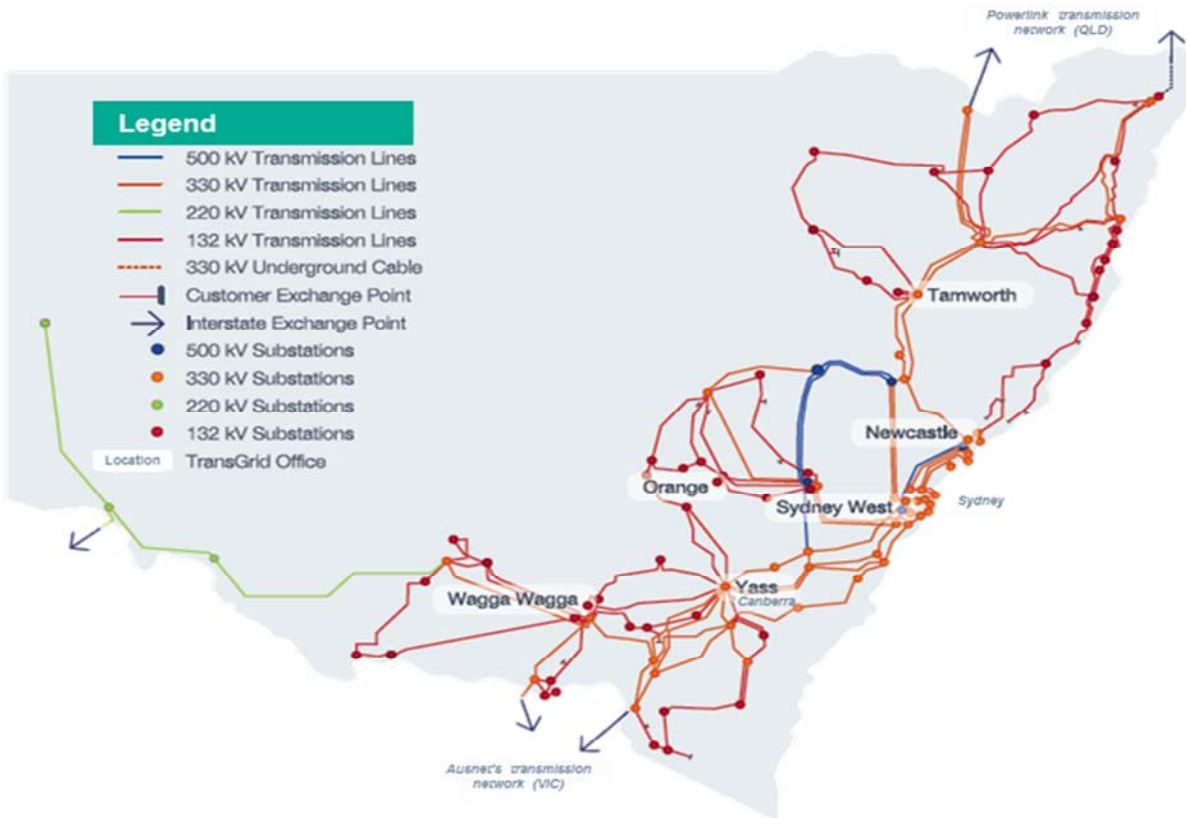


Our electricity system transports electricity from sources of generation including wind, coal, solar, gas and hydro to large industrial customers and to the distribution networks. It is then delivered to your home or business. Comprising 99 substations and more than 13,000 kilometres of high voltage transmission lines, cables, and interconnections with Queensland and Victoria, our grid plays a crucial role in supporting the economic growth of NSW and the ACT.

### TransGrid key statistics

-  Serves over 7.5 million people across 3 million homes and 30,000 businesses
-  Supports the largest state economy in Australia
-  Serves 16 directly connected large customers
-  Provides transmission connections and market access to 24 generators
-  13,039 km of transmission lines to operate and manage
-  99 substations to operate and manage

## TransGrid's transmission network

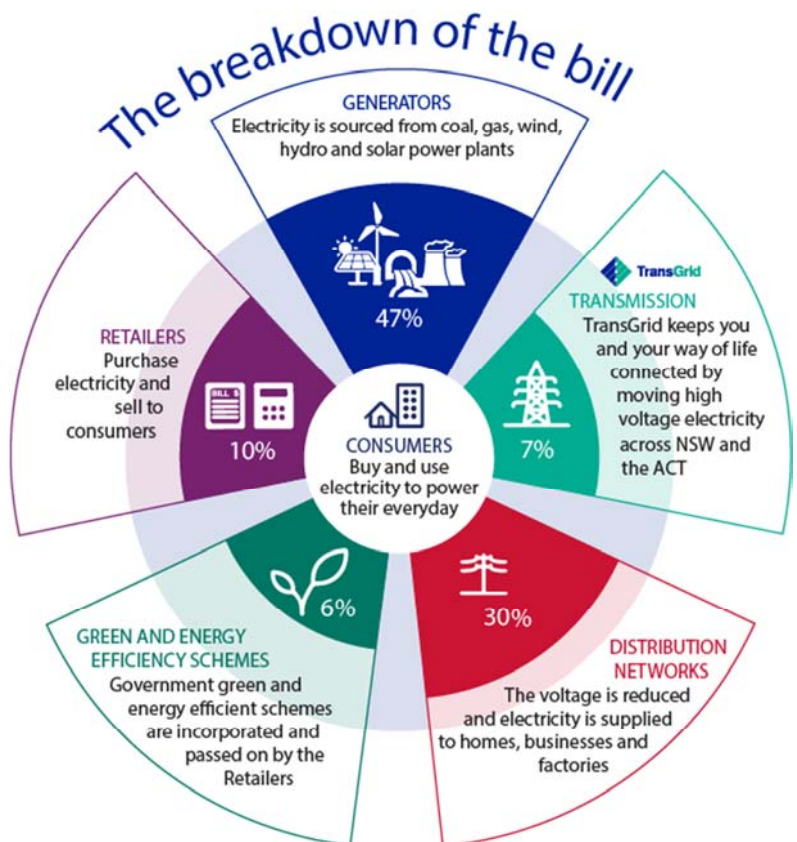


The cost of transmission in NSW and the ACT is made up of TransGrid's revenue and the revenues of a few smaller transmission companies. On average, the cost of transmission makes up about 7% of an electricity bill for homes and small businesses.

As it would not be efficient to build and operate multiple transmission networks, transmission companies like TransGrid are treated as 'natural monopolies' and are subject to regulation.

This is to ensure that the interests of all those who produce and consume electricity are looked after. The focus of this regulation is the provision of safe, reliable and affordable transmission services which are sustainable over time. TransGrid benefits from regulation as it helps us plan and maintain the network in the long term interests of those who rely on it.

Periodically, TransGrid submits a revenue proposal to the Australian Energy Regulator (AER). This sets out the revenue which supports the provision of transmission services to various reliability, safety and environmental standards over the next five years. This revenue requirement is based on forecasts of various costs, including for maintaining our transmission assets, for example. Our forecasts consider a range of factors including the feedback from engaging with customers and consumers.



Customer and consumer views are at the heart of TransGrid's business plans and to meet their needs we have embraced:

- > Innovation: TransGrid has tested new ideas and practices to drive improvements
- > Responsiveness: TransGrid has listened and responded to consumers
- > Efficiency and affordability: TransGrid has demonstrated a strong level of efficiency and performance that will be maintained to the benefit of customers and consumers.

This document forms part of our Revenue Proposal for the 2018/19 to 2022/23 regulatory period which commences on 1 July 2018. Its purpose is to summarise our proposal in a way that customers and stakeholders will find helpful and informative. It also explains how we have engaged with stakeholders in developing our proposal.

## 2. Rapidly changing operating environment

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The way that electricity is generated and consumed is undergoing rapid, significant change. Customers and consumers are changing the way they use electricity. They increasingly expect to consume electricity from the network and to export it back onto the grid from renewable generation systems.

Generation is evolving from very large fossil fuel based plants, to many distributed and grid-connected smaller-

renewable generators. This is resulting in changes to power flows and system operations.

To ensure that decisions taken now reflect this, TransGrid has engaged extensively with customers and stakeholders and has taken a long term view of its operating environment and the network's role. Factors that have influenced the development of the Revenue Proposal include:

- > Changing customer and consumer expectations and behaviour
- > Significant changes to the location and type of generation in NSW, with the integration of more renewables
- > Asset decisions which based on lifecycle performance, risks and costs
- > Current reviews to national policy, legislation, governance and rule changes across the National Electricity Market (NEM).

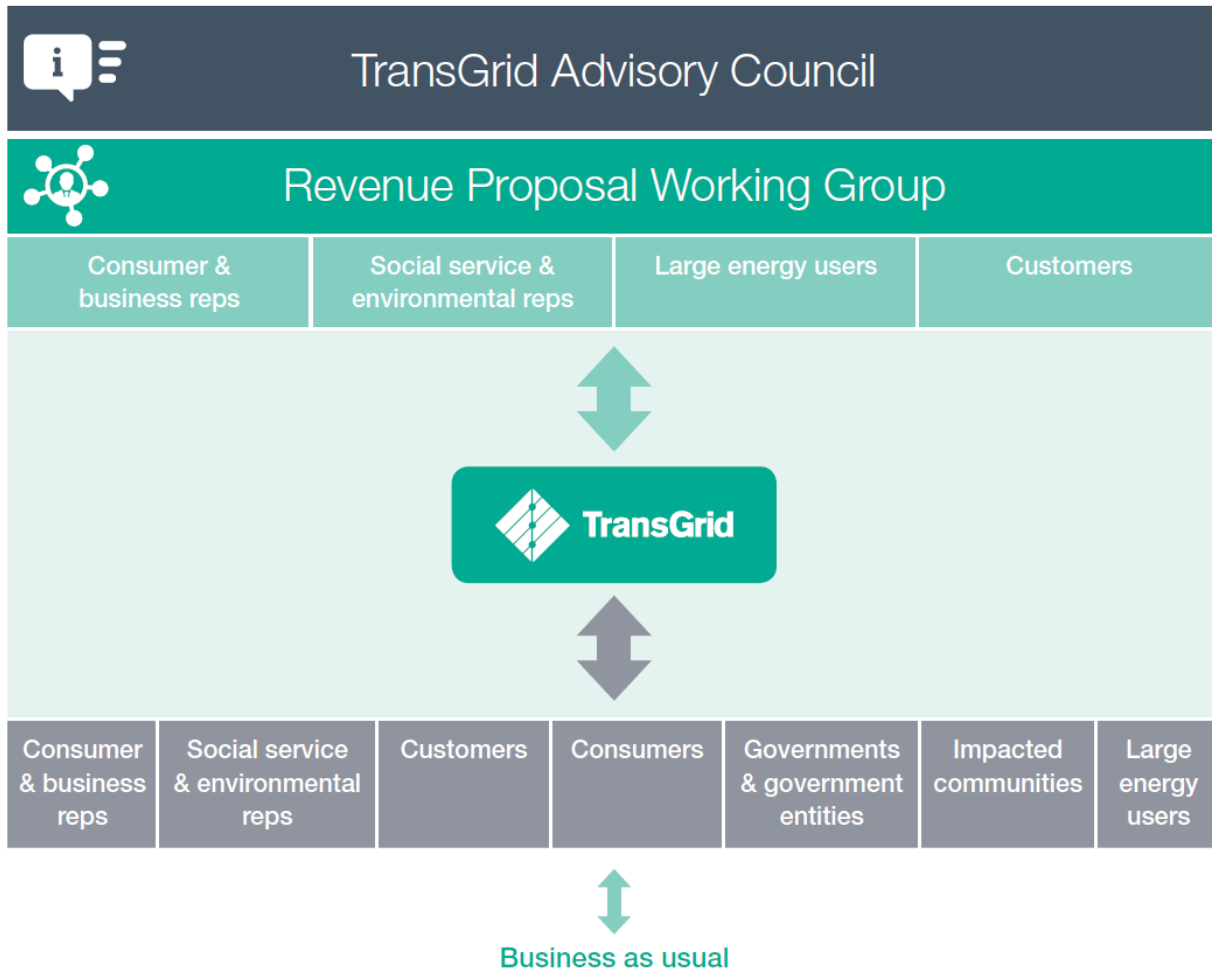
### 2.1 Stakeholder engagement overview

Proactive, transparent and with a genuine desire to continue to understand the evolving needs and views of our customers and stakeholders; we have engaged on our business plans and emerging challenges in the NEM.

Recognising that stakeholder groups have differing levels of knowledge and different interests in our business we enhanced and tailored our engagement program. We used a variety of channels and covered a range of topics at different levels of detail to gain a more sophisticated knowledge of customer and consumer perspectives.

Our external engagement activities are guided by the TransGrid Advisory Council (TAC) which includes a cross-section of consumer representatives, customers and stakeholders. TAC advises on many issues such as price, investment and innovation. The Revenue Proposal Working Group (RPWG) established under the TAC, ensured that customers, large energy users, consumer representatives and others had an opportunity to understand and influence our approach to the Revenue Proposal.

## Who we engage with



### 2.1.1 Overview of customer concerns

During the engagement program for this Revenue Proposal, customer and stakeholder areas of interest included:

- > Our forecasting methods and the evidence which supported elements of the forecast
- > Our approach to managing assets and maximising asset lives
- > The implementation of non-network solutions to network constraints.

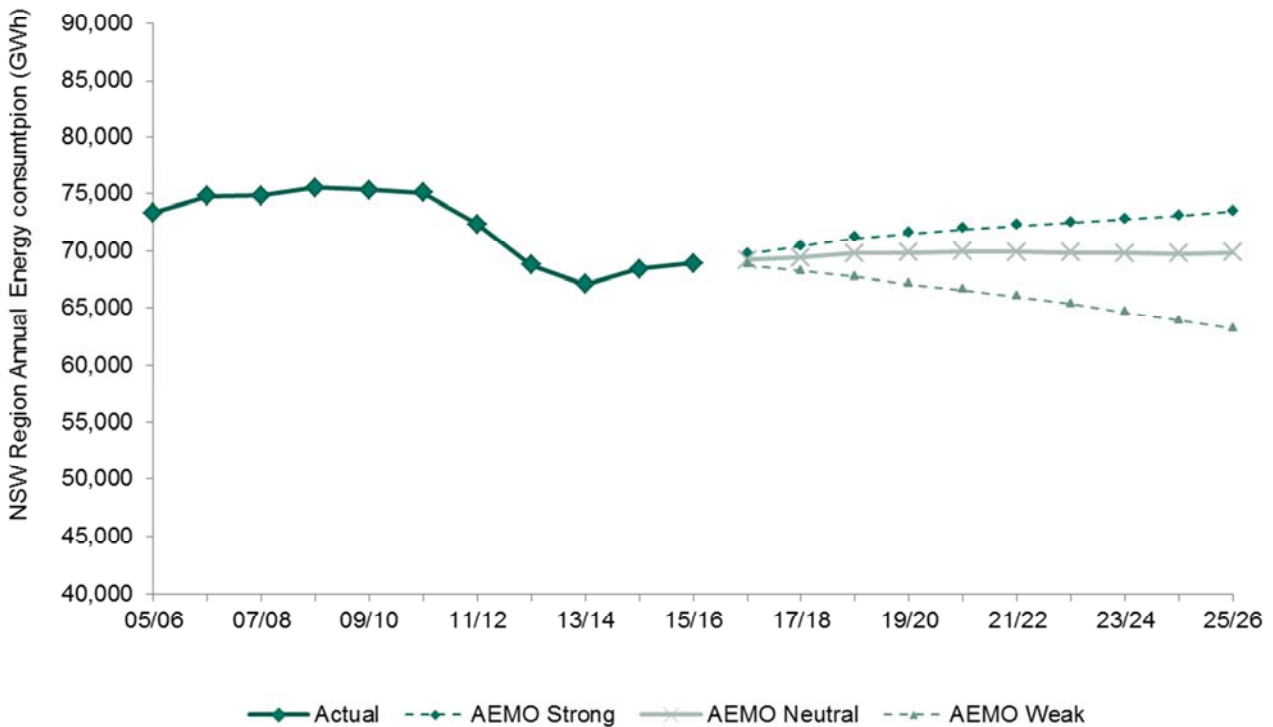
Further information on how customers and stakeholders have shaped the revenue proposal is provided in section 9 later in this document and Appendix C of the Revenue Proposal.

### 2.2 Changing consumer expectations and characteristics

Electricity consumer preferences for more control, affordability and lower carbon emissions have partly led to changes in electricity consumption patterns. Enabled by the technology such as solar generation and storage, consumers are having a greater say in how their electricity is provided. They are also making more conscious decisions about electricity usage and as a result, consumption has been lower in recent years.

The Australian Energy Market Operator’s (AEMO’s) 2016 forecast in Figure 1 shows how annual electricity consumption in NSW fell between 2009/10 and 2014/15. AEMO’s ‘neutral’ consumption forecast for NSW shows little growth in the next ten years.

**Figure 1: Annual NSW electricity consumption (MWh)**



Source: AEMO’s National Electricity Forecasting Report 2016

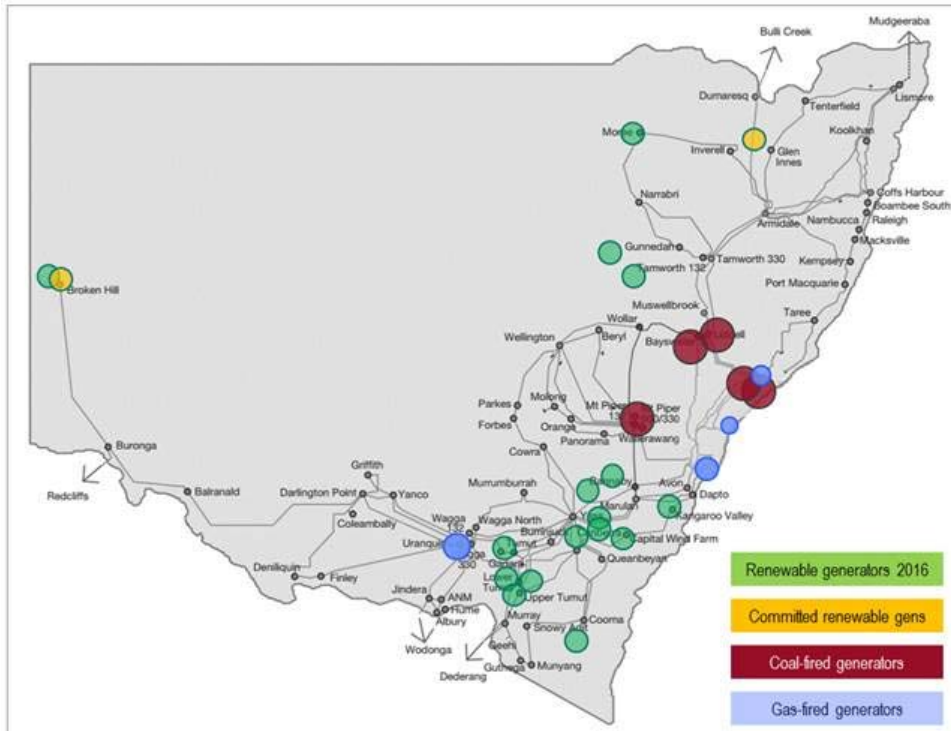
For peak demand, TransGrid expects higher than average growth in some areas, driven by new housing and industrial developments. For example, forecast peak growth for the next ten years is almost 4 per cent per annum for the Macarthur and Vineyard bulk supply points in western Sydney.

### 2.3 Changing generation patterns

As a result of renewable energy policies, there will be a significant change in generation in NSW over the next five years. The Australian Energy Market Operator’s (AEMO) 2016 Statement of Opportunities noted the retirement of the Liddell power station (-2,000MW in March 2020) and three committed wind projects totalling 198MW. It also included 24 proposed wind projects with a total capacity of 4,723MW installed by 2026.

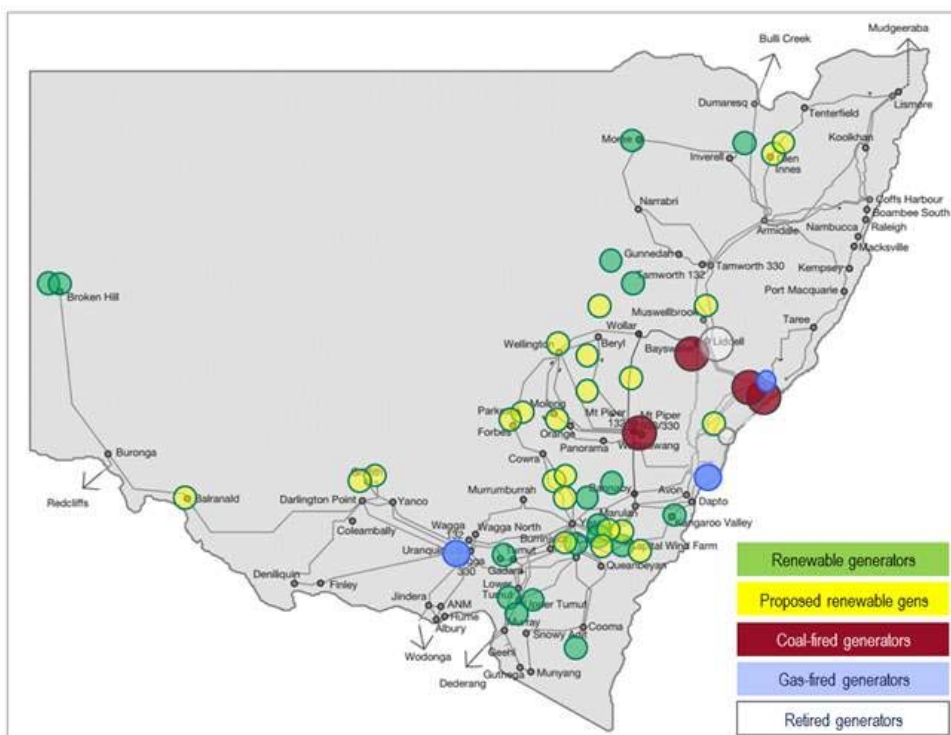
As generation becomes more dispersed the pattern of power flows on the network will fundamentally change.

**Figure 2: Existing and Committed Generation in NSW 2016<sup>1</sup>**



Source: TransGrid figure, data from AEMO Electricity Statement of Opportunities (November 2016; December 2014).

**Figure 3: Existing and Proposed Generation in NSW to 2026**



Source: TransGrid figure, data from AEMO Electricity Statement of Opportunities (November 2016; December 2014).

<sup>1</sup> The terms 'committed' and 'proposed' are the terms used by AEMO in forecasting potential future generation – they relate to the likelihood of a project proceeding. Proposed generation will not all eventuate and others which are not yet identified may connect instead.



TransGrid is committed to facilitating the transition to a lower carbon future while efficiently maintaining network reliability and security. In response to expected generation changes, we have proposed contingent projects in the Revenue Proposal. These are network investments which will only be made if certain generation conditions eventuate. This flexible approach is in the long term interest of customers and consumers as it allows security of supply to be maintained efficiently.

## 2.4 Regulatory and policy changes

TransGrid recognises that security of supply across the NEM is critical to supporting the economic growth of Australia. The new NSW Transmission Reliability Standard was finalised by the Independent Pricing and Regulatory Tribunal (IPART) in December 2016. This is an important driver of network investment. TransGrid planned on the basis of a draft standard and the only change apparent in the final version may drive a need for network support or additional capacity at Broken Hill. This is further outlined in Chapter 5 of the Revenue Proposal.

TransGrid's operations could also be impacted by a range of reviews that were initiated by the COAG Energy Council in October 2016. Following the state-wide blackout of South Australia in September 2016 and given the critical importance of energy security, reliability and system resilience, the COAG Energy Council commissioned a wide ranging independent review. This will consider the current security and reliability of the NEM and will advise governments on a coordinated, national reform blueprint. The blueprint will outline national policy, legislative and rule changes required to maintain the security, reliability and affordability of the NEM in light of the transition taking place.

## 2.5 Evolving role of the transmission network

Global trends in energy production and consumption are being driven by community expectations and availability and cost of new technology. Transmission network operators around the world are adapting their businesses to ensure the efficiency and sustainability of the electricity system in this rapidly changing environment.

We understand that a reliable, secure and affordable transmission network provides a foundation for economic growth, opens opportunities for investment and is a platform for grid innovation. With over 60 years' infrastructure excellence, strong technical capabilities and a location at the heart of the NEM, TransGrid is well positioned to respond to the changing energy landscape by:

- > Supporting reliability and security of supply as the level of intermittent and widely dispersed generation increases to unprecedented levels
- > Actively enabling the integration of new technology such as energy storage.

## 3. Proposed revenue

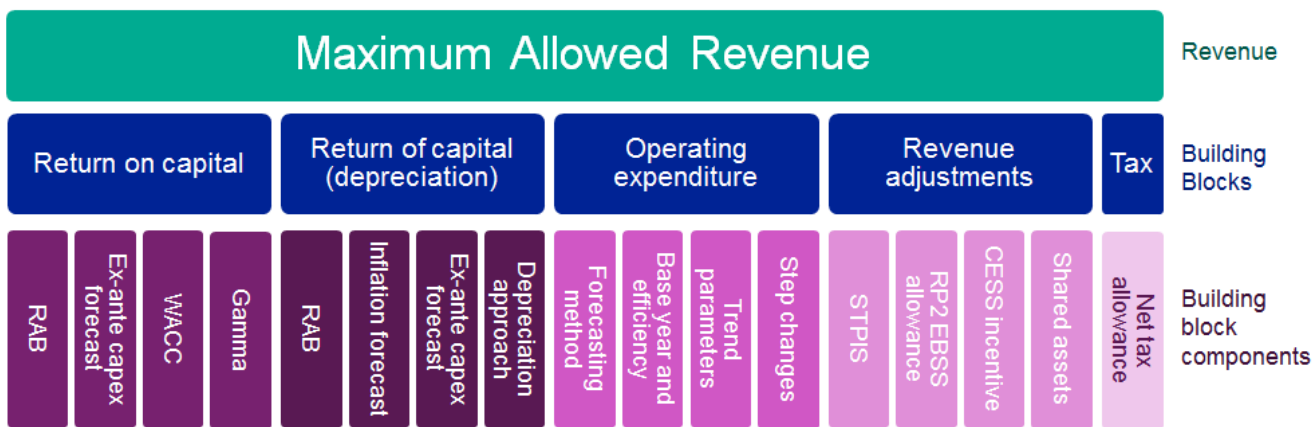
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This section summarises our proposed revenue for the forthcoming regulatory period. TransGrid's revenue is recovered through electricity bills issued by retailers and from a few directly connected large customers and generators. In NSW, the transmission component is typically around 7% of the average electricity bill for homes and small businesses.

### 3.1 Building Block Approach

The maximum allowed revenue (MAR) covers the cost of providing transmission services. It is the revenue TransGrid proposes to recover in each year of the regulatory control period. The MAR is constructed from five building block allowances as outlined in the National Electricity Rules and the AER's post-tax revenue model. Each building block is based on different component parts.

**Figure 4: MAR and its building blocks**



Building blocks are:

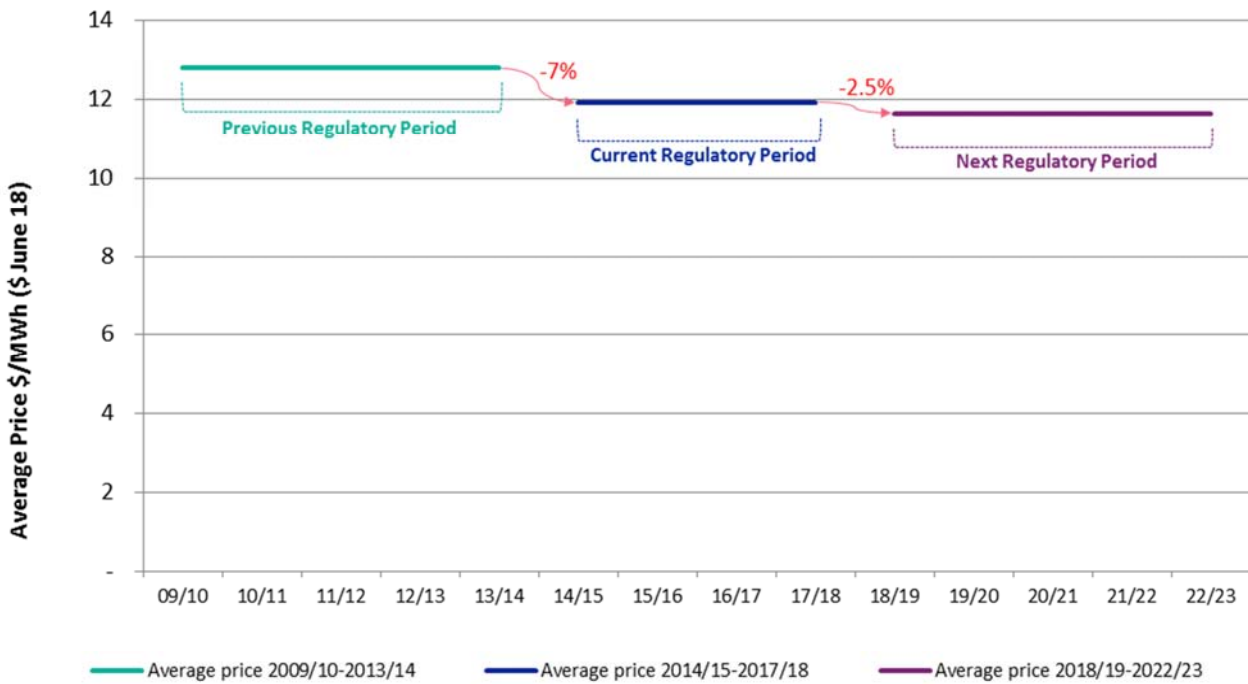
- > Return on capital – a rate of return is applied to the Regulated Asset Base, which is the value of regulated transmission assets in each year of the period. The asset base is adjusted annually to account for the commissioning of new assets, the depreciation of existing ones and asset retirements.
- > Return of Capital (Depreciation) – the return of investors’ capital over time. This equals the value of assets that are written down each year.
- > Operating expenditure – the cost of operating our business and maintaining assets.
- > Revenue adjustments – these include allowances (or penalties) for performance under incentive schemes, and negative revenue adjustments for the use of the regulated asset base for non-regulated activities.
- > Tax – an allowance for the net cost of corporate income tax.

The Revenue Proposal includes information on TransGrid’s approaches to, and forecasts for, each MAR building block and their various components.

### 3.2 Revenue forecast delivers real price reductions

TransGrid’s proposed MAR for the 2018/19 to 2022/23 period is \$3,973 million (\$ June 2018). This leads to a reduction in average transmission prices for a third consecutive regulatory period.

**Figure 5: Indicative real price change**



Determined prices shown for 2009/10 to 2017/18. Forecast prices shown for 2018/19 to 2022/23

Average prices reduced by 7% from the prior regulatory period to the current period, and will reduce again by 2.5% on the basis of this proposal. This further reduction will be achieved without impacting the reliability and sustainability of the network in this rapidly changing environment.

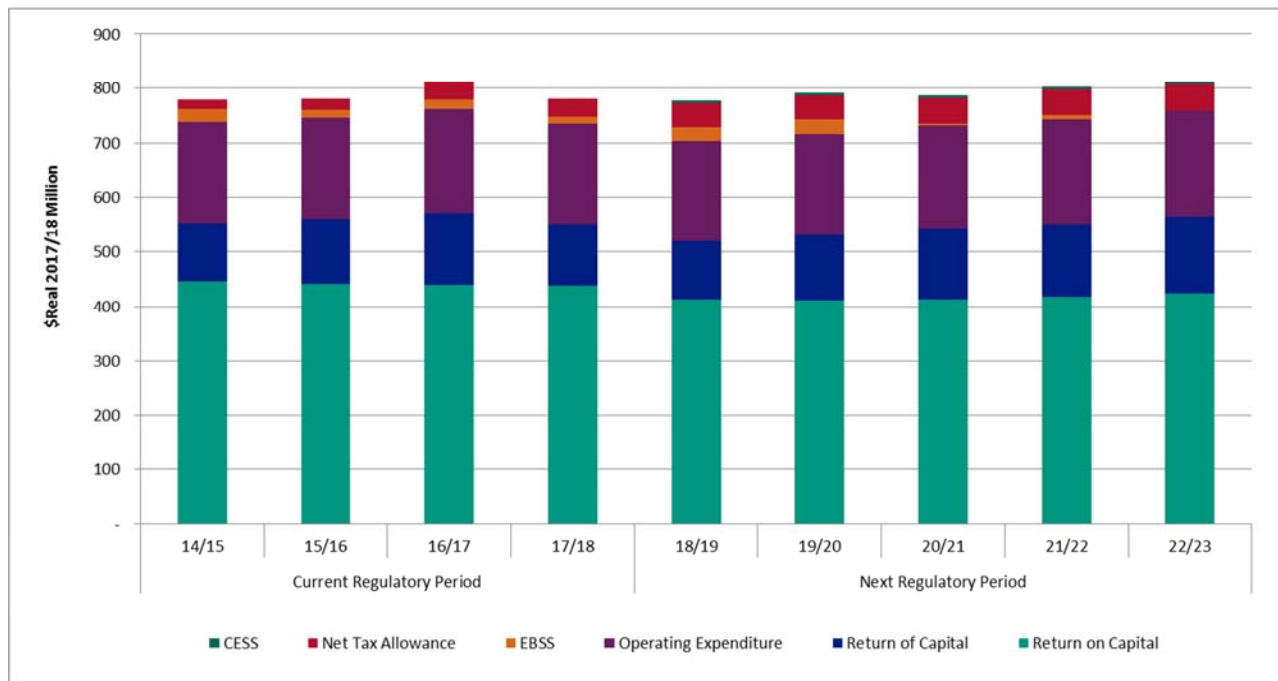
Since the last revenue determination, we have improved our operational efficiency through a series of initiatives. These have reached into all aspects of the business and have reshaped how we deliver our transmission services with a focus on the customer. This process delivered an overall reduction in operating expenditure despite increased compliance costs of almost \$4 million per annum driven in by new obligations put in place at the point of privatisation.

### 3.3 Comparison of revenue

TransGrid’s current regulatory period is four years compared to the five year period for 2018/19 to 2022/23. Total MAR in the current period is \$3,140 million (\$ June 18), or \$785 million on average each year. This compares with the proposed MAR of \$3,973 million (\$ June 18), or \$795 million on average each year in the next period.

This annual 1% real increase reflects network investments over the last five years that have been necessary to maintain an appropriate level of reliability, safety and environmental performance and operating expenditure to meet new obligations. Current period and forecast revenue are shown in Figure 6.

**Figure 6: Comparison of annual revenue (\$ June 2018)**



## 4. Capital expenditure

The long term interests of customers and consumers underpin our capital investment decision making processes. We are committed to operating in an efficient, responsive and innovative manner as demonstrated by the capital expenditure forecast. The forecast is:

- > Innovative: We have transformed our approach to incorporating risk in capital investment analysis. This ensures a robust, rigorous and quantifiable approach is applied to every identified network risk and opportunity.
- > Responsive: We have made significant improvements to the asset management strategies and policies that underpin the capital investment process.
- > Efficient and affordable: Our new investment framework optimises the portfolio of capital projects based on quantified risk assessments and cost benefit analysis. This benefits consumers by efficiently delivering service reliability, safety and environmental performance.

The capital expenditure forecasting and governance is summarised in Chapter 4 of the Revenue Proposal and the actual forecast is covered in Chapter 5.

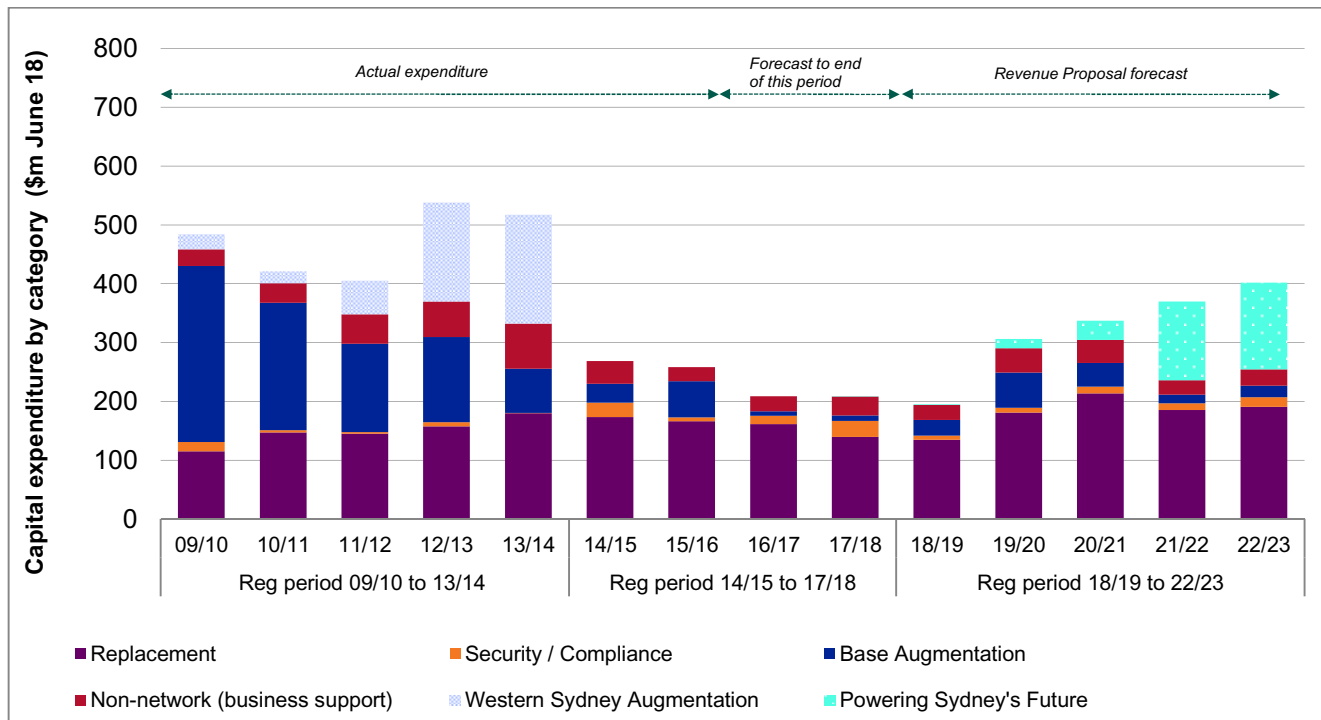
### 4.1 Asset decisions based on lifecycle performance, risks and costs

All assets have a lifecycle – they are planned, built, operated, maintained and then renewed or replaced. If assets are replaced prematurely, our costs will be higher than necessary. However, consumer representatives presented concern that if we defer asset replacement or maintenance for too long it can cause price spikes in the future. This is a balancing act. To ensure we are making investment decisions at the right time, we have enhanced our asset management and risk management process to undertake a robust analysis based on the condition and performance of our assets. This process ensures the development of asset strategies that manages asset risks to meet compliance requirements at least cost to the consumer.

## 4.2 Forecast highlights and drivers

TransGrid's annual average capital expenditure is currently lower than it has been in recent history. Overall this lower level of expenditure continues into the next regulatory period, although we do propose a moderate increase over current levels. Figure 7 shows past and forecast expenditure.

**Figure 7: Capital expenditure trend and forecast by category (\$m June 18)**



Forecast capital expenditure has a number of drivers:

- > Condition assessments and risk analysis indicate that more of TransGrid's assets are reaching a point where action is required to manage their failure risk. While age does not determine replacement need, this analysis reflects the fact that 44% of operating assets were commissioned in the 1970s or earlier. Nevertheless, risk analysis has identified younger assets with a higher replacement priority and older assets that can safely continue operating.
- > Key elements of the inner Sydney network are deteriorating in condition, leading to capacity reductions and decreasing reliability. Cables owned by Ausgrid are expected to be retired and those remaining are expected to become less reliable. One of TransGrid's cables has also had its capacity reduced. Analysis shows an expected increase in forecast levels of unserved energy in the inner Sydney network and this has driven the need to consider how best to secure it.
- > Significant changes in generation location and type are in progress. Over the next five years, generation capacity in NSW will change by around one quarter of the currently installed capacity and new generation will be much more geographically dispersed. As the timing and location of generation changes cannot be precisely forecast, TransGrid is managing the risks and cost impacts via contingent projects which will only proceed if specific events occur.
- > Similarly, a number of possible new customer loads may drive capital expenditure in specific parts of the network. Given uncertainty in the timing and likelihood of these, TransGrid adopted a probabilistic forecasting approach combining AEMO's forecasts and an external demand scenario analysis. This approach manages the risk to customers that not all projects may eventuate while ensuring that TransGrid can provide network services when required.
- > Local pockets of higher than average peak load growth exist.
- > The ACT Transmission Licence requires the provision of two geographically separate points of supply to Canberra by 2020.

### 4.3 Powering Sydney's Future

The inner Sydney electricity network supports a highly densely populated area that makes a significant contribution to Australia's economy. Powering Sydney's Future is seeking to ensure a reliable and secure electricity supply to this important economic area, in light of deteriorating network assets and increasing levels of forecast unserved energy. It is a significant project and TransGrid has carefully monitored network security in order not to invest early.

Feasible options have been identified taking account of factors including geography, cost, community and environmental impacts, planning considerations and technical feasibility. The most feasible options are considered to include a combination of non-network options (if available in the right size and location) and 330kV cables from Rookwood Road to Beaconsfield West.

These are now the subject of a Regulatory Investment Test for Transmission (RIT-T) consultation and the first round of submissions closed in February 2017. The project will evolve as a result of this and as more detailed assessment is completed. TransGrid is engaging with stakeholders and is keen to progress more detailed community consultation around route selection with some level of certainty about the investment.

#### Seeking non-network options as part of Powering Sydney's Future

In recent engagement, TransGrid heard that customers and stakeholders value innovation and support a level playing field for non-network investment alternatives.

In response, TransGrid arranged an extended consultation session on Powering Sydney's Future with additional time to discuss the non-network requirements. The workshop took place in November 2016 as part of the RIT-T consultation.

### 4.4 Benefits of the proposed capital program

We are conscious that the cost of electricity continues to be a concern to customers and consumers and we have significantly developed our capital expenditure processes in the last two years.

TransGrid has estimated the proposed capital expenditure forecast will add less than \$5 per year (\$June 18) to a representative residential bill. Based on the proposed total revenue, TransGrid's contribution to the representative bill will be \$69 a year on average (\$ June 18).

Figure 8: Impact on bill of TransGrid's revenue and TransGrid's capital expenditure



### 4.5 Regulatory Asset Base (RAB) and the capital expenditure forecast

The capital expenditure forecast is used in the return on capital building block as it becomes part of the RAB. To calculate annual RAB we used the AER's post-tax revenue model (PTRM). Commencing from the opening RAB as at 1 July 2018 discussed in the proposal in Chapter 3, we calculated the annual RAB by:

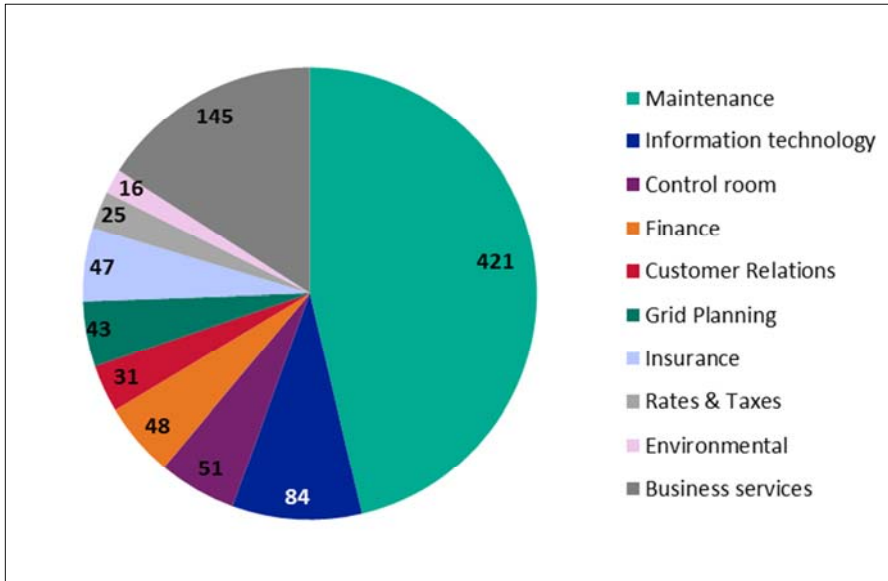
- > Adding forecast capital expenditure during financial years from 2018/19 to 2022/23

- > Removing forecast asset disposals during financial years from 2018/19 to 2022/23
- > Removing the depreciation expense based on the rates and methodologies discussed in Chapter 10
- > Adding forecast inflation.

## 5. Operating expenditure

A key component of our operating expenditure is the cost of maintaining assets and operating the transmission system. Prudent and efficient maintenance and operation is crucial to maintaining network safety and reliability.

**Figure 9: Operating expenditure components (\$m June 18)**



Committed to enhancing the way we operate, we are strongly focussing on efficiency, cost reductions and smarter ways of delivering our services. We have undertaken a forensic review across the business to identify opportunities for cost reductions. These cost reductions have been identified, implemented, and are reflected in the forecast operating expenditure for the next regulatory period.

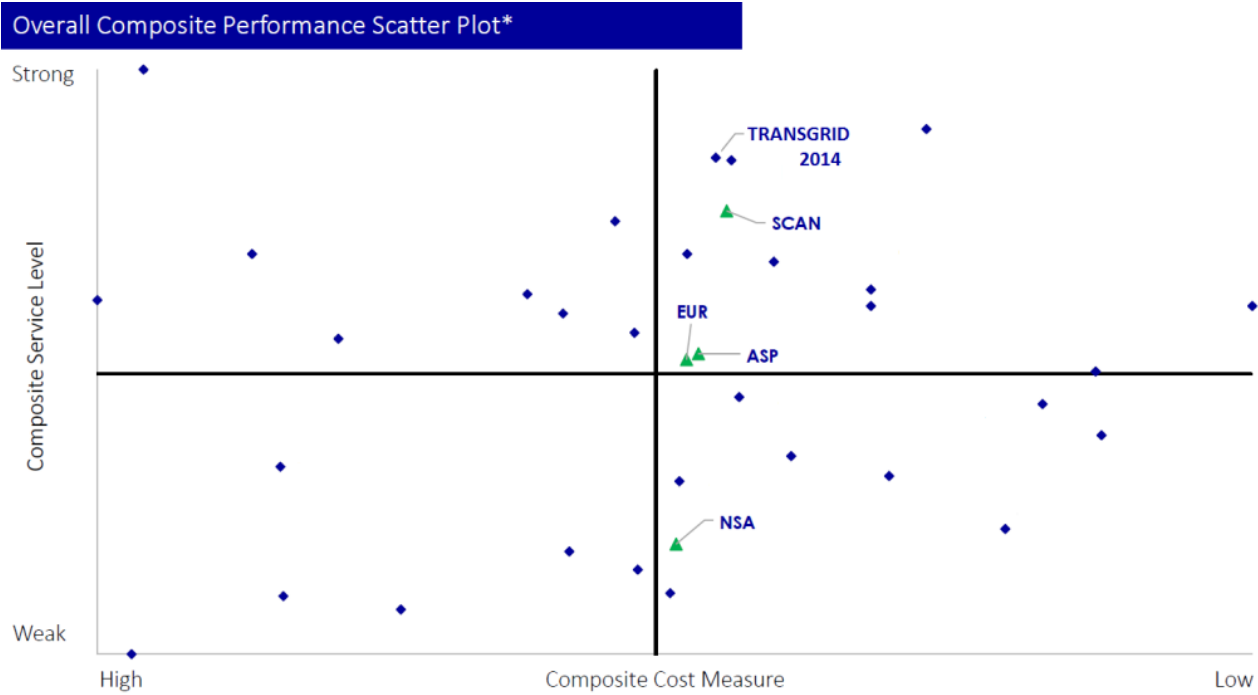
The 2016/17 operating expenditure is efficient, reflects the new business cost base and supports a forecast that is in the long term interests of consumers for both price and reliability. Planned efficiency savings of 3% in the 17/18 year are included in the forecast, lowering the total costs to consumers.

### 5.1 Measuring efficiency

An increased focus on efficiency revealed further opportunities for improvement in service performance and cost reductions. According to independent assessments, in the two years leading up to the change in ownership TransGrid was a high performer internationally and within its Australian peer group. For example, the most recent International Transmission Operations and Maintenance Study (ITOMS) 2015 identified TransGrid as an “overall top performing company” for transmission line operations out of 31 international transmission businesses.<sup>2</sup> The best performing businesses are shown in the top right of Figure 10.

<sup>2</sup> UMS Group: Overview – ITOMS 2015 Report, 28 January 2016, p.26

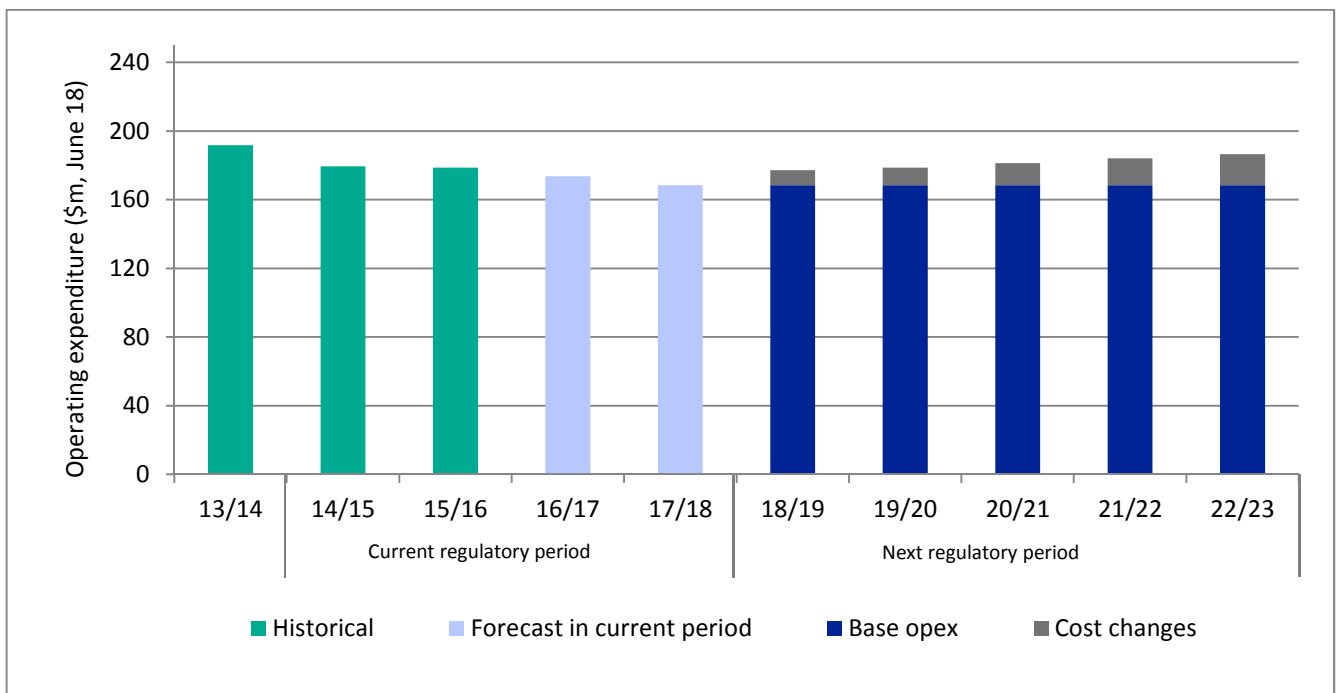
**Figure 10: ITOMs Benchmarking Results**



A 2016 KPMG benchmarking report has also indicated that TransGrid has the lowest operating expenditure per customer compared to all six Australian transmission network service providers. TransGrid’s operating expenditure per circuit kilometre was the lowest in most years of the study. This report is included in Appendix N of the Revenue Proposal.

Most of TransGrid’s savings initiatives identified following the last revenue reset were implemented in early 2016 and financial benefits will be realised by 2017/18. TransGrid will reduce operating expenditure in 2016/17 by 3% in spite of material cost increases, including new costs arising from the change in ownership. In practice, cost savings of closer to 5% were achieved to offset these new costs. A further 3% reduction is expected in 2017/18 and this is built into next period’s forecast.

**Figure 11: TransGrid’s historical and forecast prescribed operating expenditure**





## 6. Incentive schemes

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Under an incentive based regulation framework, transmission networks have an incentive to reduce costs. There are incentive schemes for both operating and capital expenditure which facilitate this.

### 6.1 Efficiency Benefit Sharing Scheme

The Efficiency Benefit Sharing Scheme (EBSS) has been designed to share the benefits of improved operating efficiency with consumers.

- > TransGrid has responded to the incentives that would be provided by a correctly functioning EBSS, and achieved material cost savings in the current regulatory period. Examples of these are discussed in Chapter 6 of the Revenue Proposal.
- > There are potentially inappropriate rewards and penalties when a four year carryover period is combined with a five year regulatory control period. Consequently, TransGrid proposes that the EBSS carryover from the 2014/15 - 2017/18 years is calculated using a five year carryover period.

Further information on EBSS and the proposed scheme is included in Chapter 13 of the Revenue Proposal.

### 6.2 Capital Expenditure Sharing Scheme

The Capital Expenditure Sharing Scheme (CESS) allows savings to be shared between consumers and a transmission business when capital expenditure in a period is lower than the capital expenditure allowance.

- > In this regulatory period the scheme uses CESS Version 1 and operates only over 2015/16 - 2017/18, as the 2014/15 transitional year from the last determination was excluded. Capital expenditure for priority projects approved under the network capability component of the Service Target Performance Incentive Scheme (STPIS) were excluded from the scheme.

Further information on CESS and the proposed scheme for 2018/19 to 2022/23 is included in Chapter 14 of the Revenue Proposal.

## 7. Rate of return

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Electricity transmission requires large specialised assets that need on-going and long-term investment to keep the network performing efficiently. Rather than customers funding the total cost of equipment when it is installed, TransGrid funds the new investments with a combination of debt and equity financing. Consumers then fund the cost of these investments over the life of the asset via the weighted average cost of capital (WACC).

The WACC, otherwise known as the rate of return, refers to the expected efficient cost of debt and cost of equity the business faces as financing costs on its investments. It is a key component of the AER's building block method which should ensure the efficient financing of costs the business incurs are included in the revenue allowance.

Setting the right rate of return on capital is very important to promote efficient prices in the long term interests of consumers. If the rate of return is too low it is likely to lead to underinvestment in network equipment and could affect the reliability of the network. Conversely, if the rate of return is too high it could lead to over investment and increase electricity prices.

With this in mind, TransGrid has aligned its approach to WACC to the AER's preferred guideline approach, with updates for current market rates. Our proposed WACC is 6.6% which is lower than the current approved rate.

## 8. Other topics

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### 8.1 Shared Assets

The AER's Shared Asset Guideline details the AER's preferred approach to adjusting the MAR to reflect a TNSP's use of regulated assets for non-regulated activities. TransGrid has applied the AER's methodology and has identified two categories of non-regulated services which use shared assets; these are Telecommunications Services and Property Rental.

Further information on Shared Assets is provided in Chapter 12 of the Revenue Proposal.

### 8.2 Depreciation

TransGrid's forecast of depreciation on prescribed assets from 2018/19 to 2022/23 period is outlined in Chapter 10 of the Revenue Proposal.

### 8.3 Tax

The estimated cost of corporate income tax is outlined in Chapter 11 of the Revenue Proposal. The proposed approach to imputation credits is set out in Chapter 9.

### 8.4 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 discussed further in Chapter 17 of the Revenue Proposal.

## 9. How customers and stakeholders have shaped the revenue proposal

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Proactive, transparent and with a genuine desire to consult; TransGrid has continued to engage on our business plans and electricity challenges faced across the NEM.

In 2016 we established the TransGrid Advisory Council. This brought together a panel of consumer representatives, customers and large energy users to provide advice to TransGrid on strategic policy issues, business plans and offer consumer insights to improve the value of TransGrid's transmission services to NSW and the ACT.

Building upon previous successful engagement activities, we further evolved our engagement program to ensure it aligned with the Revenue Proposal. A full summary of engagement is described in Chapter 3 and Appendix C of the revenue proposal.

### Responding to insights

Customer and stakeholder insights	Our response
Customers commented on, and recommended changes to TransGrid's proposed approach to output growth for forecasting operating expenditure	TransGrid changed its approach to adopt the suggested recommendations. This has reduced the output growth trend and led to a \$1 million lower operating expenditure forecast
Customers want TransGrid to invest in maintaining its assets to maximise their lives. In doing this, customers wanted to ensure that investments are made at the right time and in their long term interests to minimise cost impacts	TransGrid responded through its significantly improved asset management strategy and risk framework. This proposal is centred on a capital program that is efficient, innovative and in the long term interests of consumers

Customer and stakeholder insights	Our response
Customers wanted a reasonable explanation and justification for costs relating to the step change for off-easement vegetation risk management over the next period	TransGrid has reflected this feedback and provided further detail as Appendix D to the Revenue Proposal
Customers recommended that TransGrid focus more on the proposed WACC value rather than the approach itself	TransGrid has ensured that it is transparent in regards to the proposed WACC of 6.6%. Details of the WACC and expenditure are included in the front of both the Executive Summary and the Overview Paper, in addition to more detailed information in the Revenue Proposal
Customers were concerned that Productivity Commission's Productivity Update for 2016 data could have been distorted as it included the water sector	In response, TransGrid looked again for an alternative forecast and subsequently identified that the AERs DNSP report, which includes a substantially larger data set to the AER's TNSP report, might be a suitable alternative
Customers suggested that TransGrid clarify its messaging on IT efficiencies as it had created uncertainty around the potential for service impacts resulting from costs reductions	In response to this feedback, TransGrid improved and clarified the information in the Revenue Proposal
Customers told TransGrid of a perception that transmission networks do not actively pursue non-network alternatives and that the process during a RIT-T can be seen as a "tick box" exercise	<p>TransGrid acknowledges this is an established concern and is working hard to satisfy customers that a non-network solution will be pursued wherever feasible and efficient.</p> <p>Expected non-network requirements for the Sydney CBD have recently been specified and TransGrid is actively seeking network support as part of the overall solution. A public forum was held in November 2016 to present and discuss the specific non-network requirements to this need. The forum was well attended and helped TransGrid and non-network proponents form a better mutual understanding.</p> <p>To actively develop the demand management market, TransGrid has proactively commenced a survey of demand reduction available from commercial buildings in the Sydney CBD.</p> <p>TransGrid is actively pursuing a non-network solution in the Broken Hill area. This is a result of the new NSW transmission reliability standards, published in December 2016. These create a new requirement to improve supply reliability at Broken Hill - a late change from the published draft. Options are still being developed but TransGrid considers that a non-network solution would be efficient in that location. TransGrid has committed to updating the AER as soon as an efficient solution is identified.</p>

## 10. Key Risks and Benefits for customers and consumers

### 10.1 Benefits

- > As a result of the enhanced engagement approach for this Revenue Proposal, TransGrid has a deeper understanding of customer and stakeholder priorities and has tried to address these where possible.
- > Close alignment with the AER's preferred methods and guidelines provides customers and consumers with confidence in TransGrid's approach and the resulting prices.
- > Applying the AER's rate of return guideline approach, with updates for current market rates, results in a return on equity significantly lower than other market based measures. Customers benefit from the lower prices arising from this approach.
- > TransGrid has transformed how it manages assets and better incorporates risk in capital investment analysis. It has applied this robust, rigorous and quantifiable approach to developing the capital expenditure forecast. Customers and consumers can have confidence that the proposed capital expenditure is reasonable and justified and also that reliability, safety and environmental risks have been rigorously considered.
- > Savings in capital expenditure achieved in the current period result in lower prices for customers in the next regulatory period. Further new savings which are enabled by new design and equipment standards are also built into the capital expenditure forecast.
- > Uncertainty in how future generation investments and retirements will impact the network has been managed through contingent projects. This means that TransGrid can make necessary investments if particular needs do eventuate but there is no cost to consumers if they do not. This approach allows us to plan responsibly and efficiently for possible network needs and maintain security of supply, irrespective of how the future unfolds.
- > TransGrid's approach to forecasting operating expenditure is closely aligned to the AER's preferred method. However, a small number of variations have been made to improve accuracy. These were discussed with customers and consumers in consultation sessions. Customers benefit from a rigorous forecasting methodology which is closely aligned to TransGrid's current cost drivers.
- > Forecast operating expenditure efficiency savings in the current year and in 2017/18 are sustainable and have been built into all future year forecasts. Customers benefit from these savings through lower prices.

### 10.2 Risks

- > TransGrid's capital programme includes an element of probabilistic planning for a portfolio of uncertain network requirements which could arise as a result of possible large customer connections. This is effectively a risk sharing approach between TransGrid and customers, ensuring necessary investments can proceed without customers funding every possible outcome.
- > TransGrid's approach to estimating the rate of return reflects a balance between market evidence and AER preferences. There is a risk that more reductions in the 'risk free rate' will pull the rate of return further out of line with investor requirements. An inadequate rate of return could compromise TransGrid's ability to invest efficiently in the network. This is not in the long term interests of consumers as it may reduce the quality of transmission network services provided to customers and have future price impacts.
- > The timing of the Powering Sydney's Future project in the revenue proposal is defined by the critical network investment path. It is hoped that this timing can be delayed if suitable non-network solutions can be identified in time. The risk to customers and consumers is that if suitable solutions are not identified in time then this opportunity to achieve savings is lost. TransGrid has communicated the requirements for non-network solutions and is actively seeking expressions of interest through a formal process.
- > If inner Sydney cable assets are in poorer condition than anticipated then reliability could be impacted in the short term and there could be a need to advance the timing of the Powering Sydney's Future investment.

- > If contingent project triggers have not been defined correctly (by anticipating future drivers) then investments which enable consumer benefits from lower wholesale energy prices and improved security of supply may not be able to proceed
- > If operating expenditure is set below sustainable business levels it would compromise the ability for the business to operate efficiently. It also reduces the performance incentive aspects of the regulatory framework which are designed to benefit customers through efficiency sharing.

## 11. Contact us

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If you have any questions or would like any further information on TransGrid's Revenue Proposal, contact the Stakeholder Engagement team in the following ways:

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