



TransGrid

Revenue Proposal

TransGrid Revenue Proposal 2018/19 - 2022/23 overview

11 April 2017

Revenue Proposal

The Proposal recognises that the energy industry is undergoing profound change



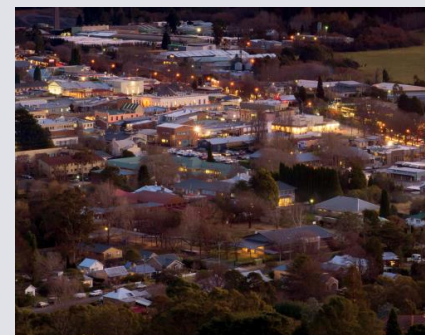
We have proposed a prudent program of necessary augmentation and replacement work.



We have achieved real savings in operating expenditure.




Our contribution to the average bill will be \$69 per year, or \$17 per quarter – a decrease in real terms from the previous period.



Customers sit at the heart of TransGrid's business plans. We have developed our five year proposal after extensive consultation.

Summary and Responses


Some of our slides respond to questions the Consumer Challenge Panel are raising in the following presentation. These slides are marked with a  in the top right hand corner.

TransGrid's owners

NSW ELECTRICITY NETWORKS


Spark Infrastructure is an ASX listed infrastructure network specialist investment fund with a market capitalisation of around \$3 billion

15.01%


Global (with strong Australian heritage) specialist manager of infrastructure assets with over \$10.8 billion in funds under management

22.5%


Caisse de dépôt et placement du Québec
One of the largest institutional fund managers in Canada and North America with net assets totalling over C\$241 billion (~C\$10b infrastructure)

22.5%


Tawreed Investments is an infrastructure investment vehicle wholly owned by the Abu Dhabi Investment Authority

19.99%


Global Direct Infrastructure Investment vehicle of the Kuwaiti Investment Authority

19.99%



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

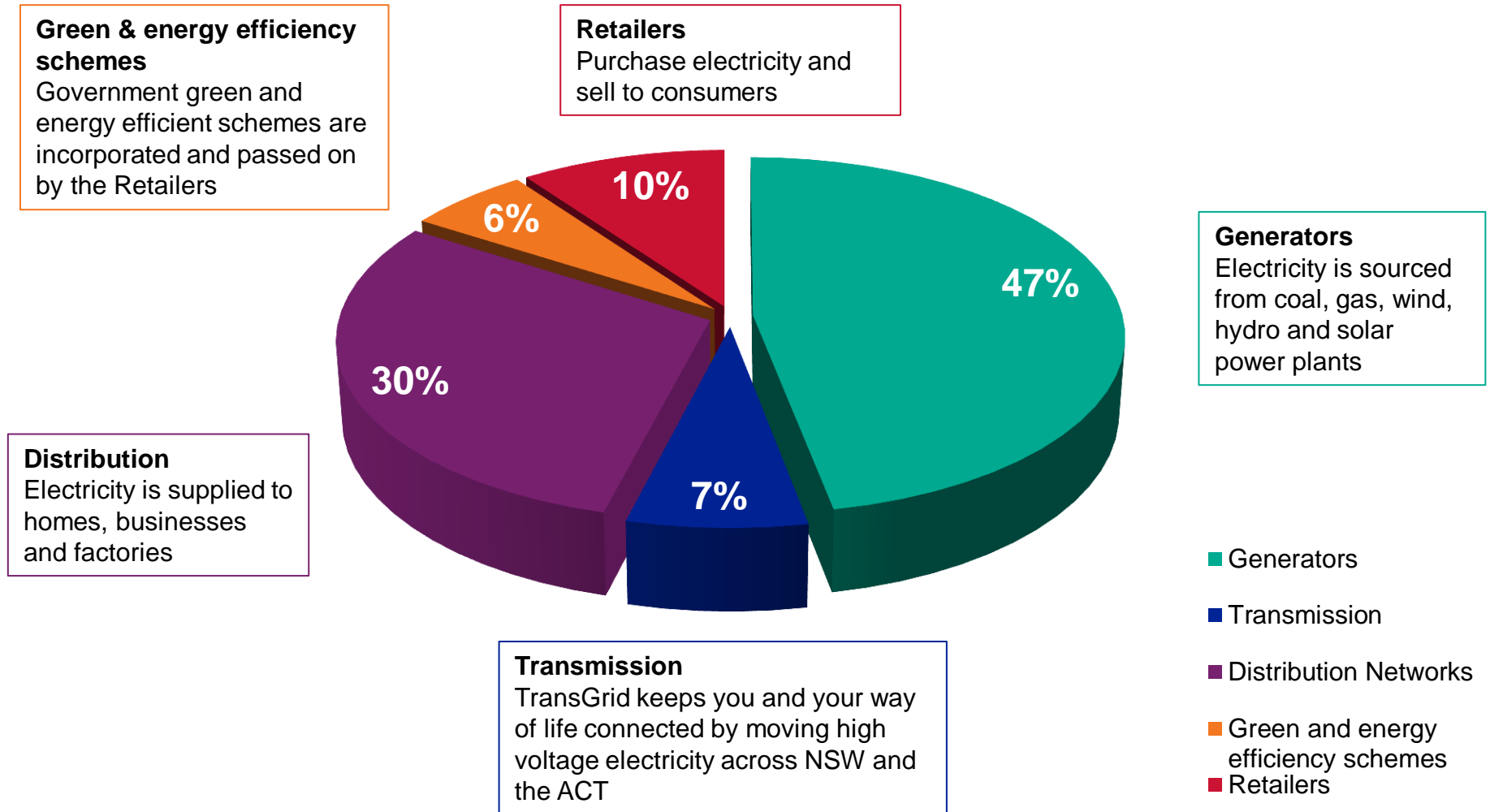


Includes 13,039 km of transmission lines to operate and manage



Includes 99 substations to operate and manage

Transmission components of the electricity bill



Electricity consumption in NSW

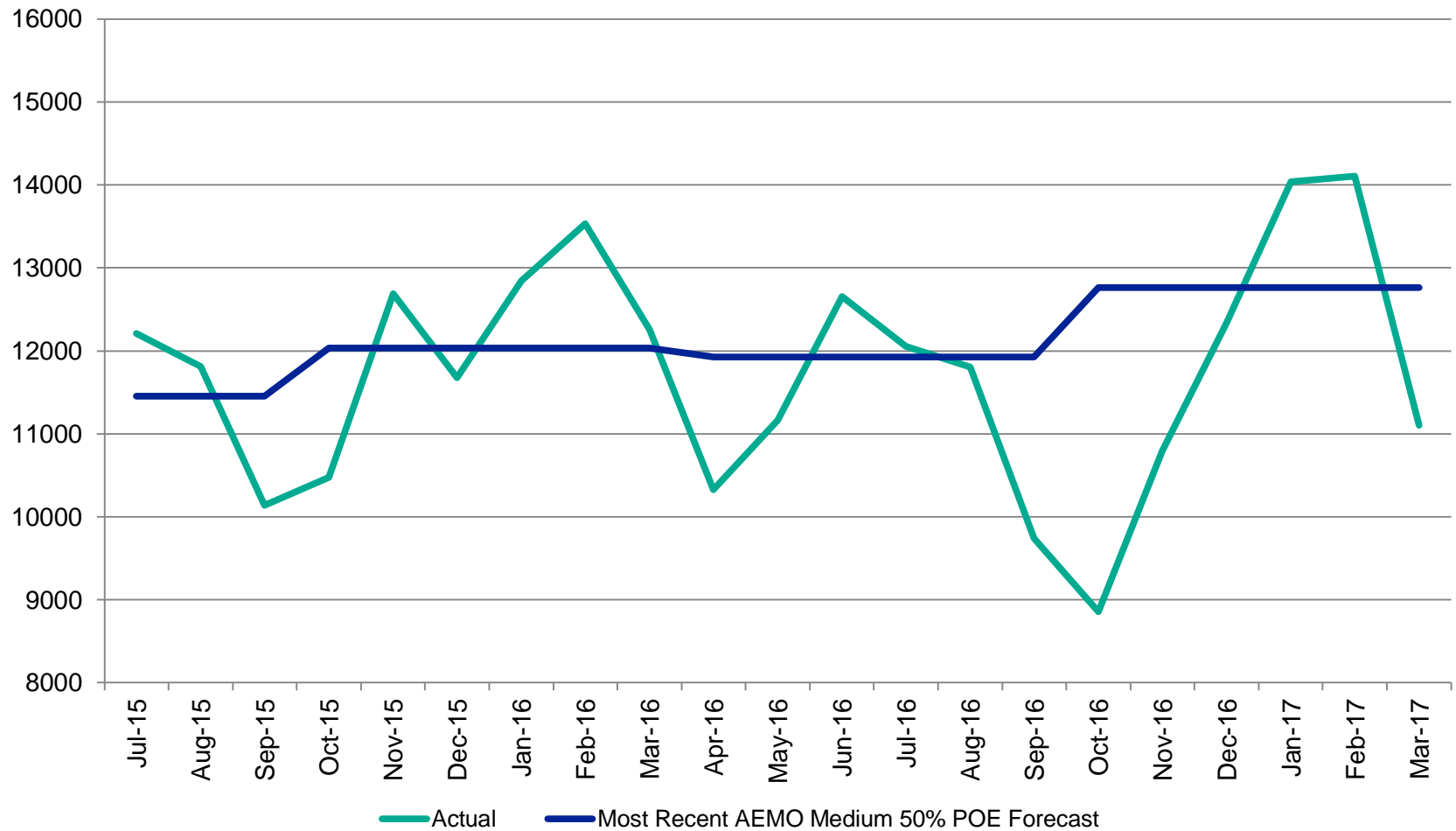
- Annual electricity consumption in NSW fell between 2009/10 and 2014/15
- There has been some recovery in the last two years.

Forecast annual electricity consumption in NSW (MWh)



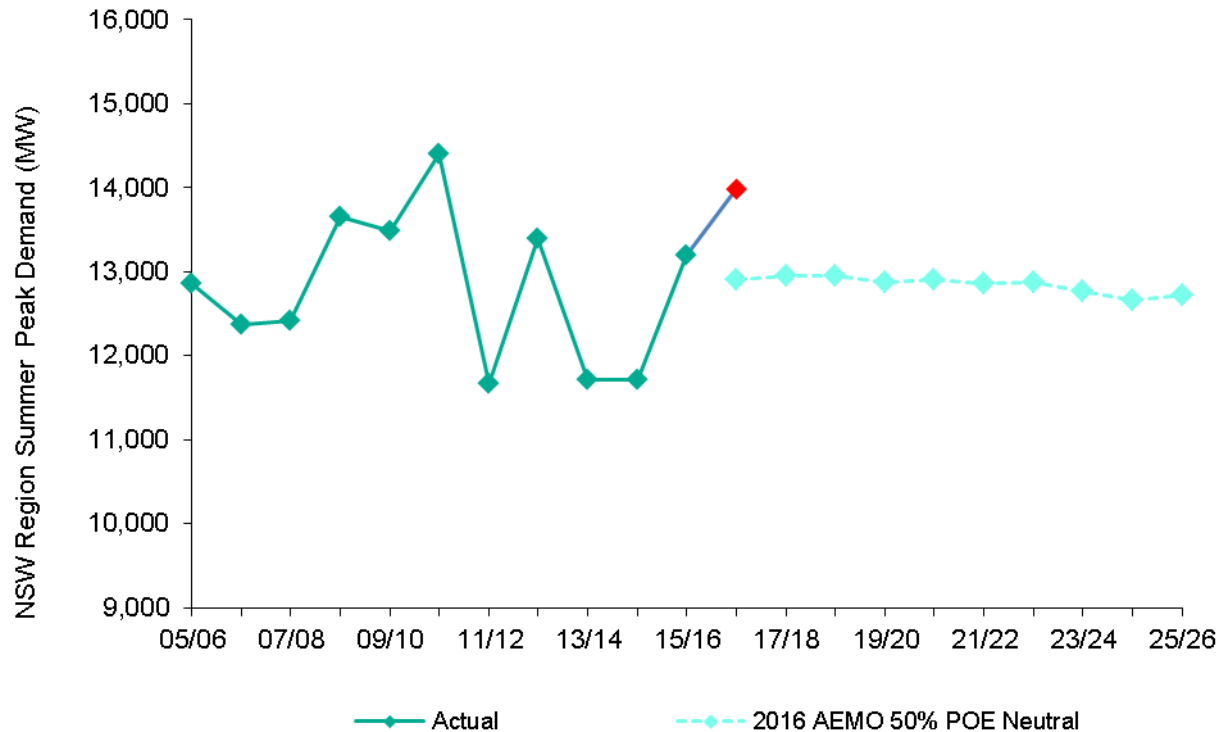
Source: AEMO's National Electricity Forecasting Report 2016

Actual demand vs forecast



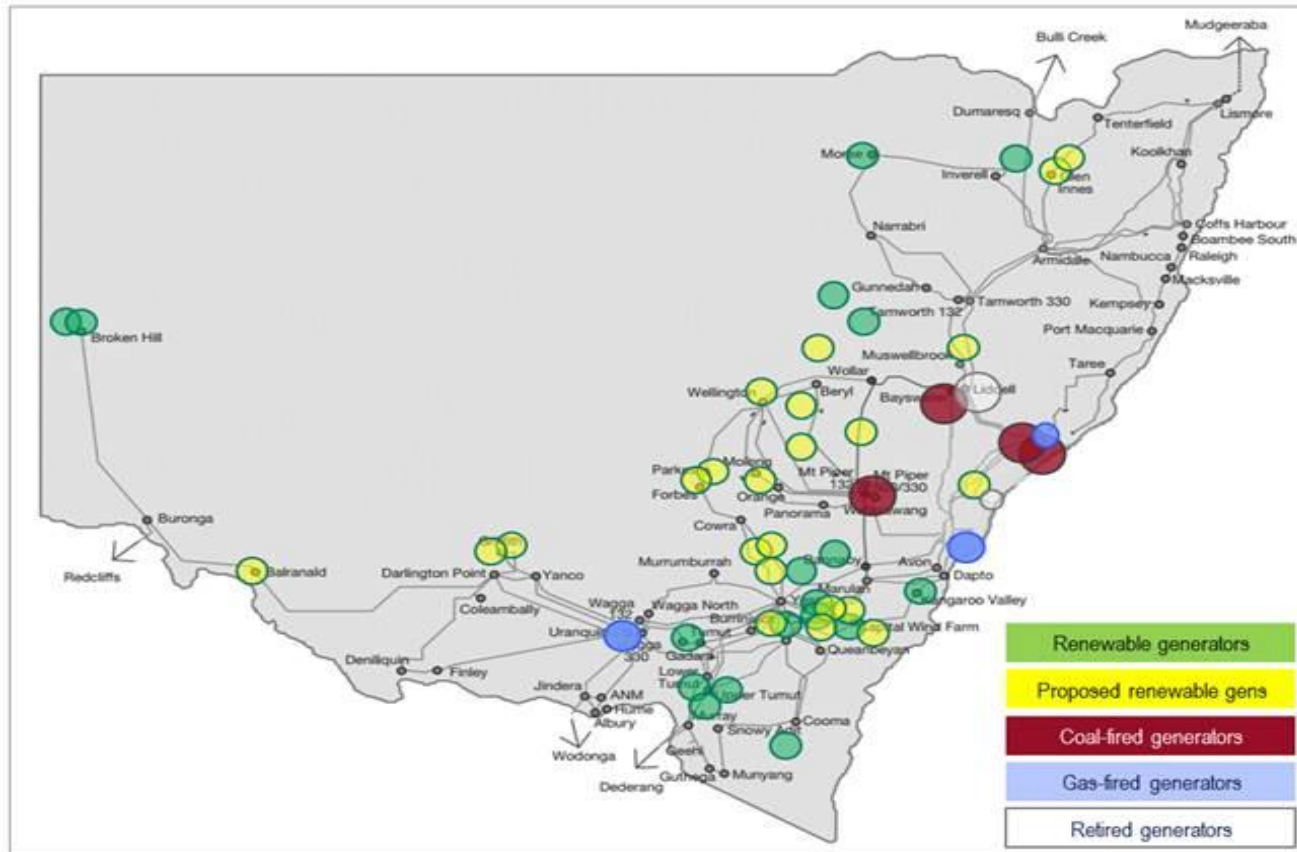
AEMO forecast summer peak load for NSW (MW)

Pockets of growth in maximum demand driving limited location specific augmentation



Existing and proposed generation in NSW to 2026

- There will be a significant change in generation in NSW over the next five years
- 24 proposed wind projects with a total capacity of 4,723MW are proposed before 2026
- The pattern of power flows on the network will fundamentally change



TransGrid's engagement framework



An improved approach to external engagement



Accessibility

TransGrid Advisory Council



An executive-level forum that provides ongoing advice to TransGrid. Members have been appointed based on their level of industry expertise to jointly provide high level advice and feedback on areas such as price, infrastructure, investment and innovation to ensure the customer and consumer perspective is included in TransGrid decision making.

Transparency

Revenue Proposal Working Group



A dedicated forum to ensure that customers, consumers and interested parties have an opportunity to discuss, explore impacts of and tangibly influence TransGrid's approach to the upcoming Revenue Proposal.

Communication

Stakeholder Forums



TransGrid is embracing new opportunities and in 2016 launched the NSW Energy Forum to explore priorities for NSW, including how we support a low carbon future and explore ways to shape the future of the grid. There was also a dedicated PSF forum in November 2016 which focussed on non-network alternatives.

Inclusiveness

Board and Executive debrief

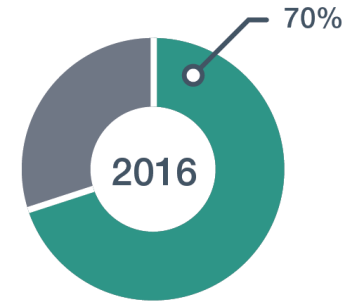
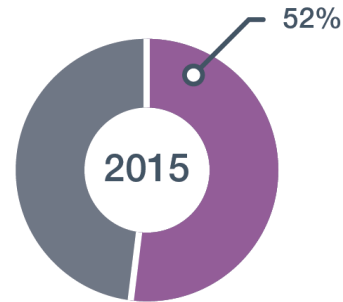


Ideas and views expressed by stakeholders are shared with TransGrid's Board and Executive team.

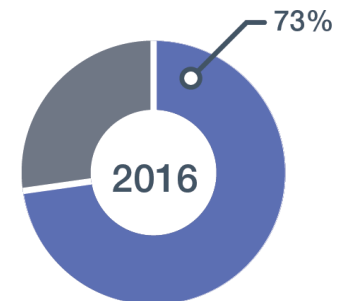
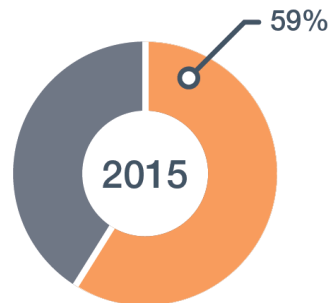
Measuring engagement and reputation



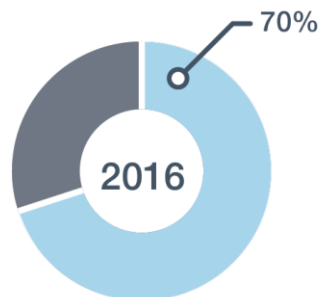
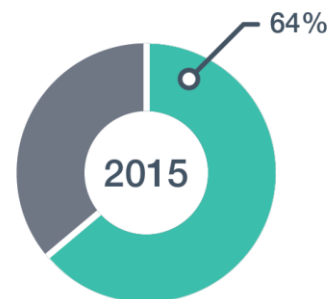
Trust in TransGrid to do the right thing by stakeholders rose from 52% in 2015 to 70% in 2016



Advocacy for TransGrid improved from 59% in 2015 to 73% in 2016



TransGrid's overall reputation increased from 64% in 2015 to 70% on 2016



Topics for consumer and stakeholder engagement



NSW Electricity Transmission Reliability Standards



Asset strategy and potential capital investments



Operating expenditure & WACC



TransGrid Pricing Methodology



TransGrid's vision



Transmission annual planning



Innovation and technology



Supporting a low carbon future

Examples of changes made to our proposal arising from consumer engagement feedback

Amended our approach to measuring output growth

Changed the studies we were relying on for industry productivity measure

Improved our asset management strategy and risk framework

Increased information on IT, step changes and non-network alternatives

Ensured a transparent presentation of the WACC value

Revenue forecast delivers real price reductions



	2009/10 - 13/14	2014/15 - 17/18	2014/15 - 17/18	2018/19 - 22/23
Real	-7%		-2.5%	
Nominal	7%		8.4%	

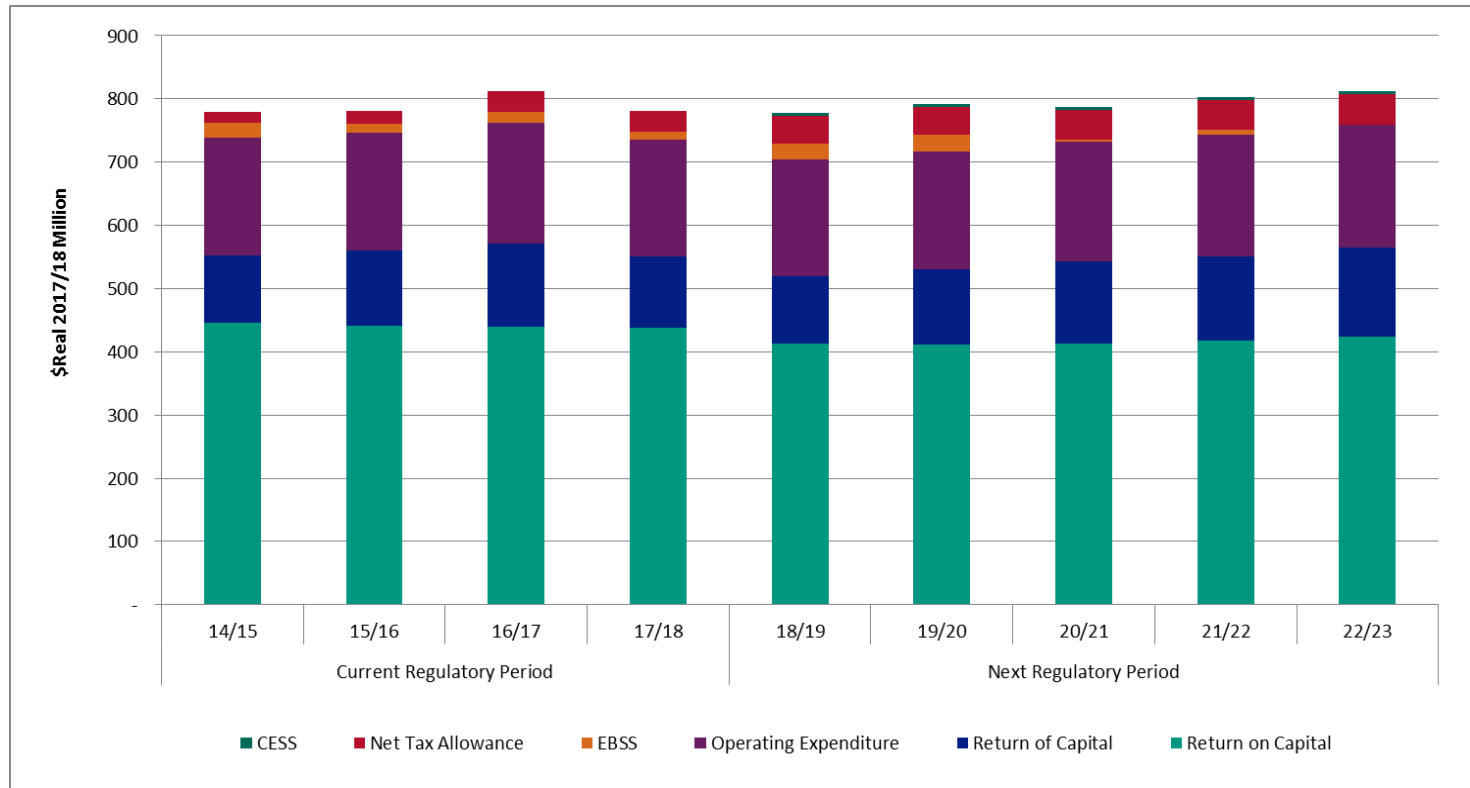
TransGrid's revenue proposal presents price changes on a real basis. Real price reductions have occurred this period compared to the prior and are forecast for the next regulatory period.

The AER issues paper presents the same price analysis but includes CPI escalation.

Revenue comparison

- TransGrid's proposed Maximum Allowed Revenue for the 2018/19 to 2022/23 period is \$3,973 million (\$ June 2018)
- Annual average revenue is \$10 million p.a. higher in the forecast period

Period to Period Comparison of Maximum Allowed Revenue (\$ June 2018)



Bill impact – revenue



In the upcoming
**regulatory
control period,**



TransGrid's average
contribution
to a representative bill will be



\$69 per
year or



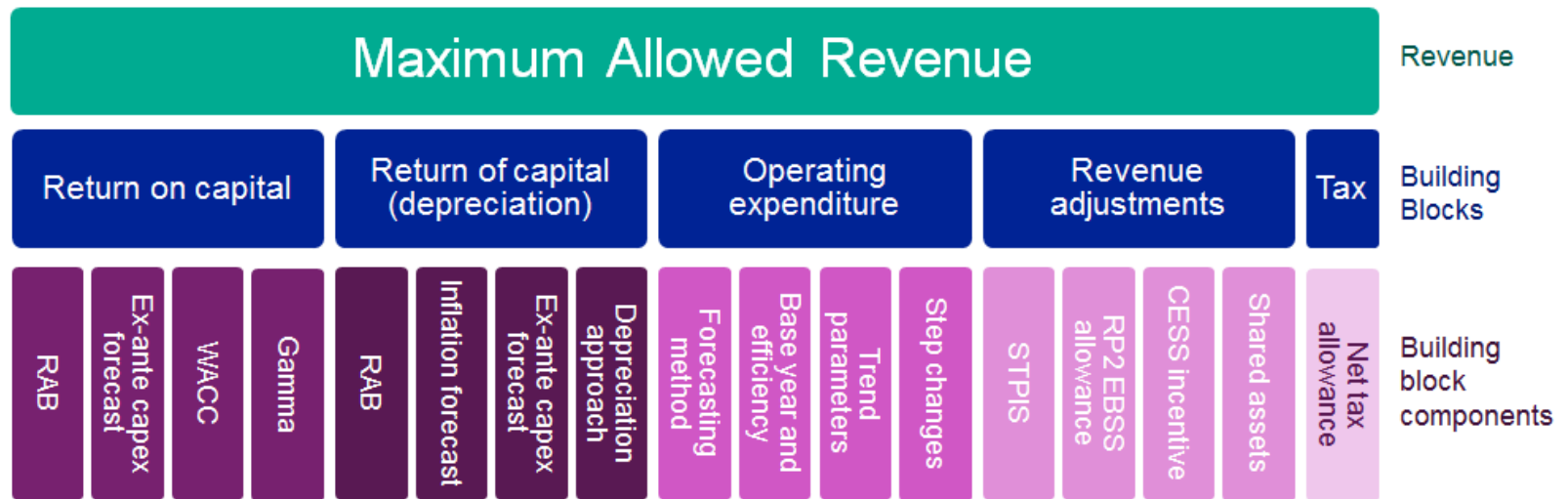
\$17 per
quarter



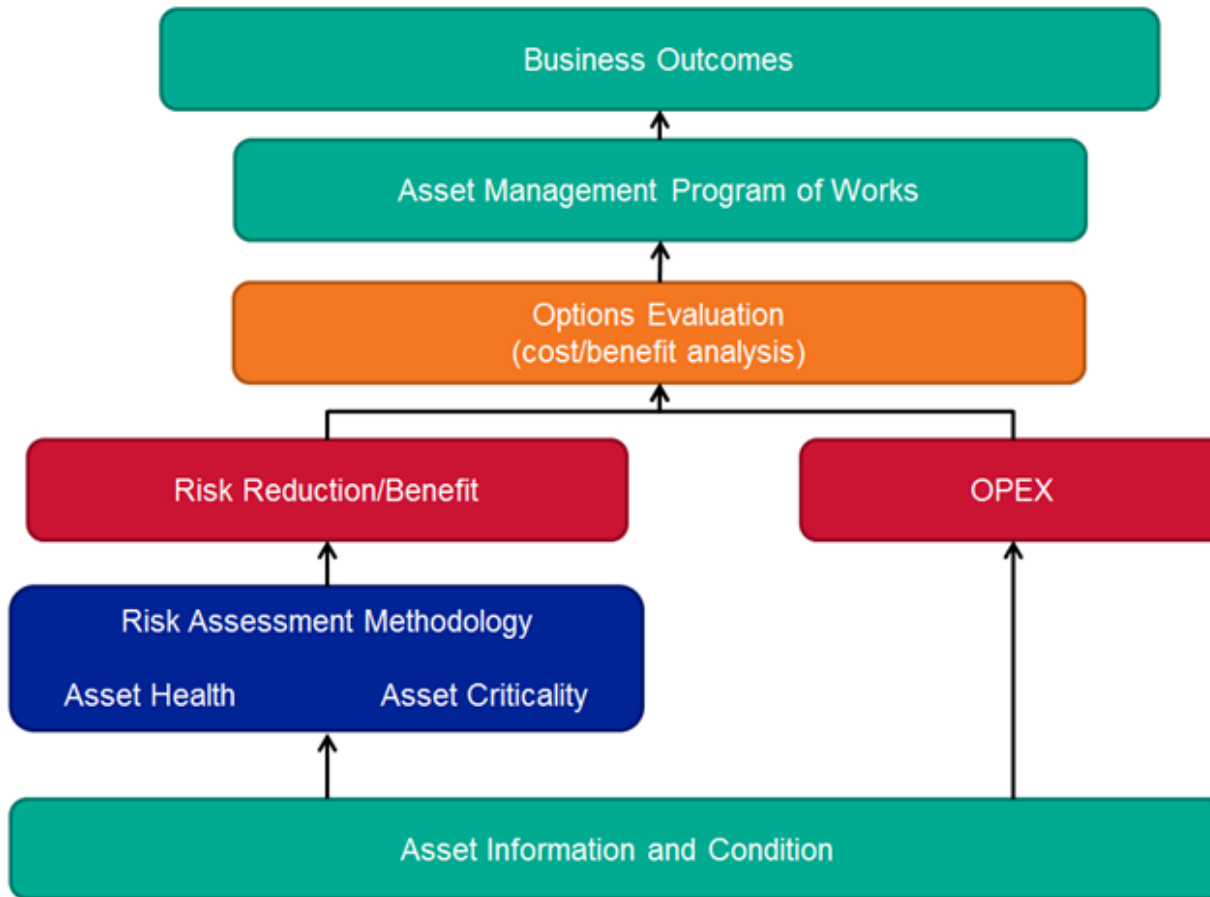
Revenue building block approach

- TransGrid's proposed MAR is constructed from five building blocks as required by the National Electricity Rules and the AER's post-tax revenue model

Building Blocks

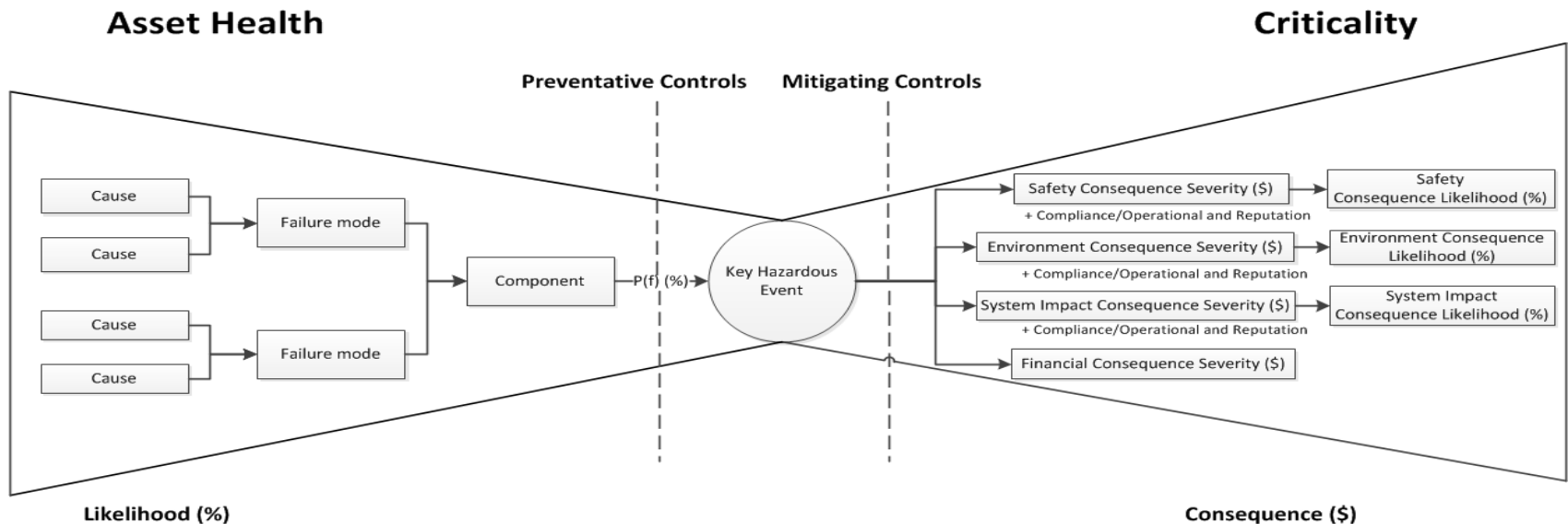


Capital expenditure forecasting – a new approach

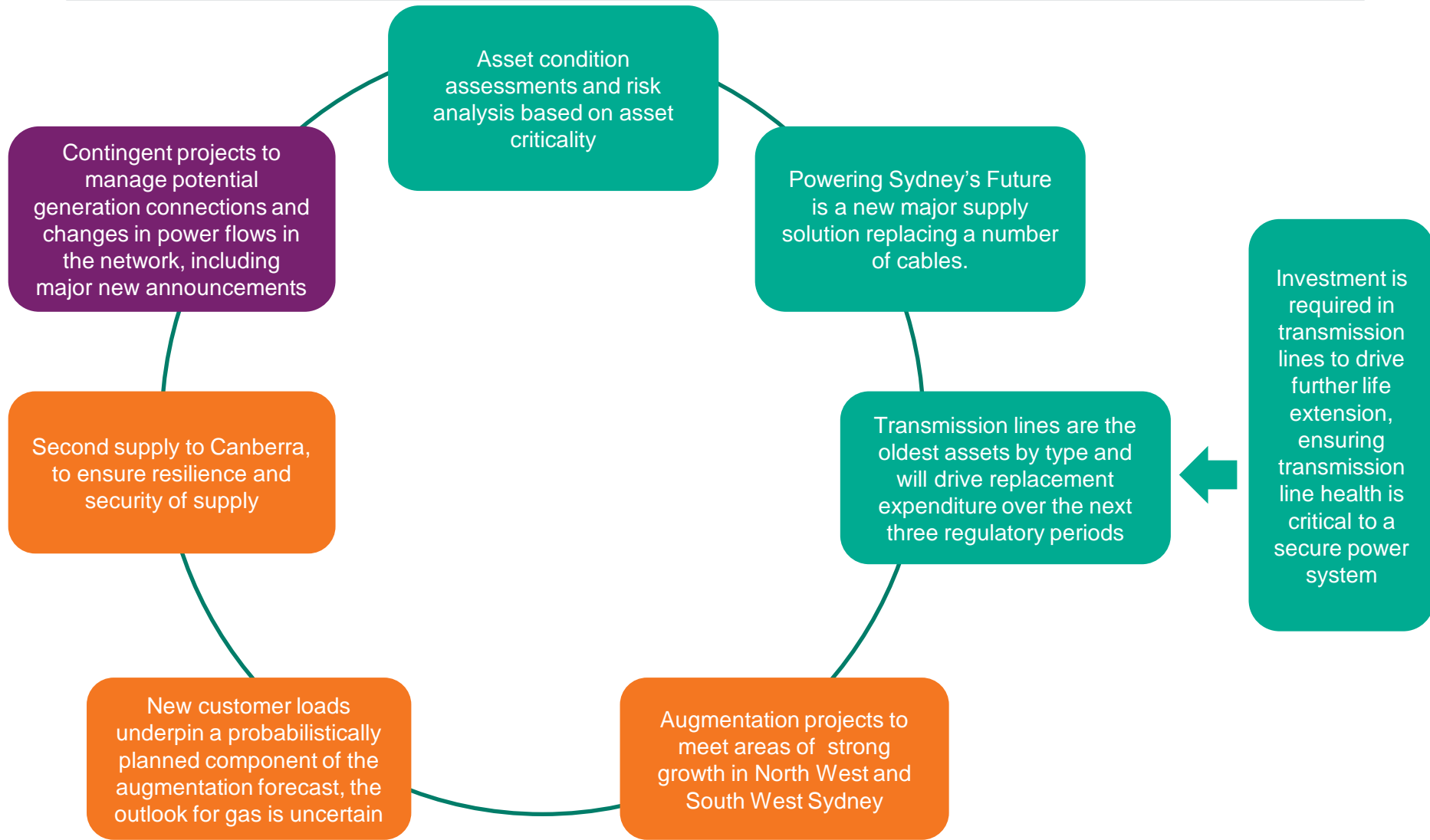


Asset Management High Consequence Risks

- Catastrophic/explosive failure
- Conductor drop
- Structure failure
- Unauthorised access to assets
- Uncontrolled release of pollutant
- Uncontrolled discharge or contact with electricity
- Unplanned outage of supply (electricity or communications)

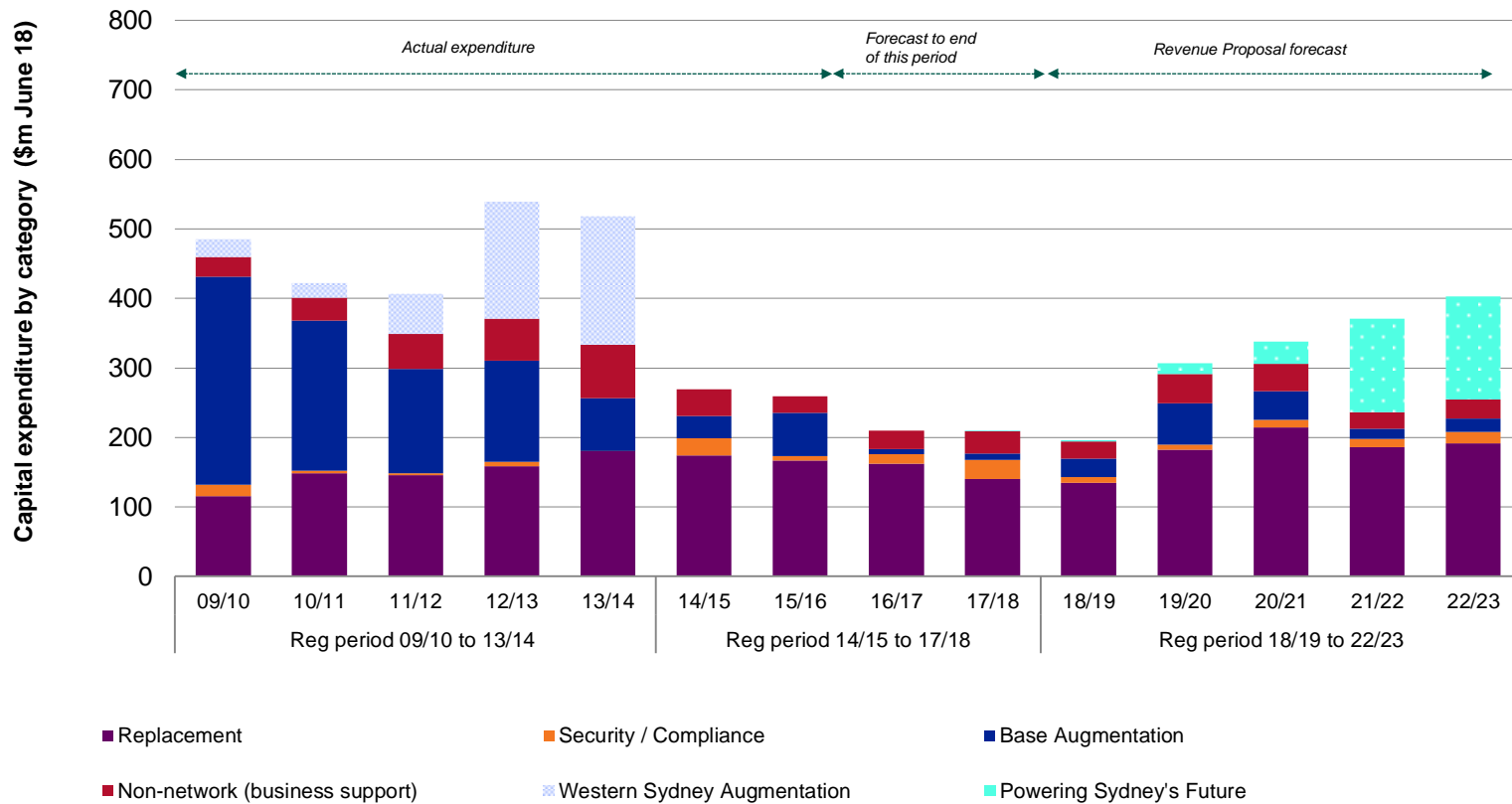


Capital expenditure drivers

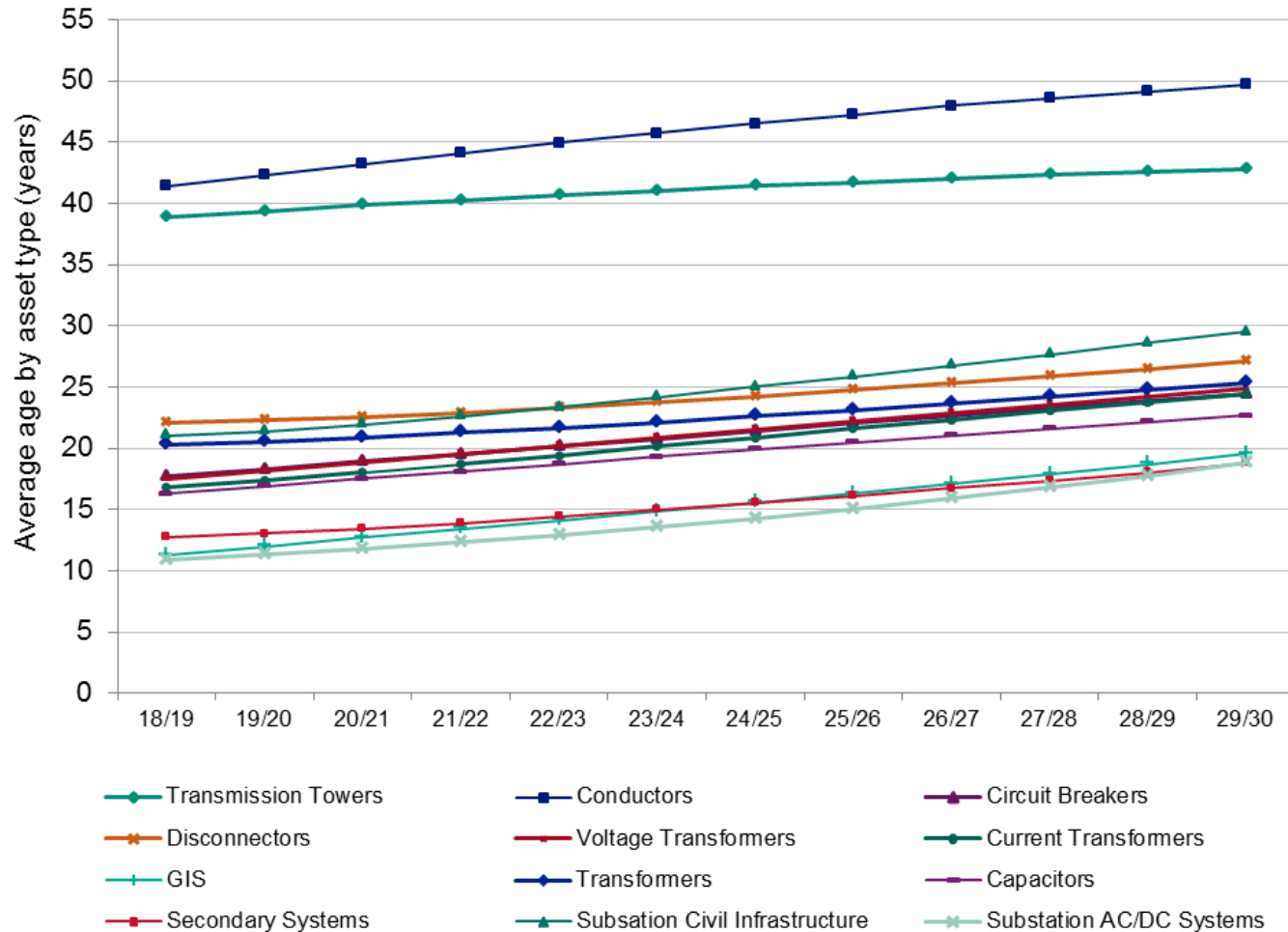


Capital expenditure forecast

Capital expenditure trend and forecast by category (\$m June 18)



Average asset ages using replacement profiles



Bill impact – capital expenditure

The proposed capital expenditure forecast will add less than \$5 per year (\$June 18) to a representative residential bill



In real terms,

the entire capital expenditure forecast in the upcoming period will cost the representative consumer less than



\$5 per year



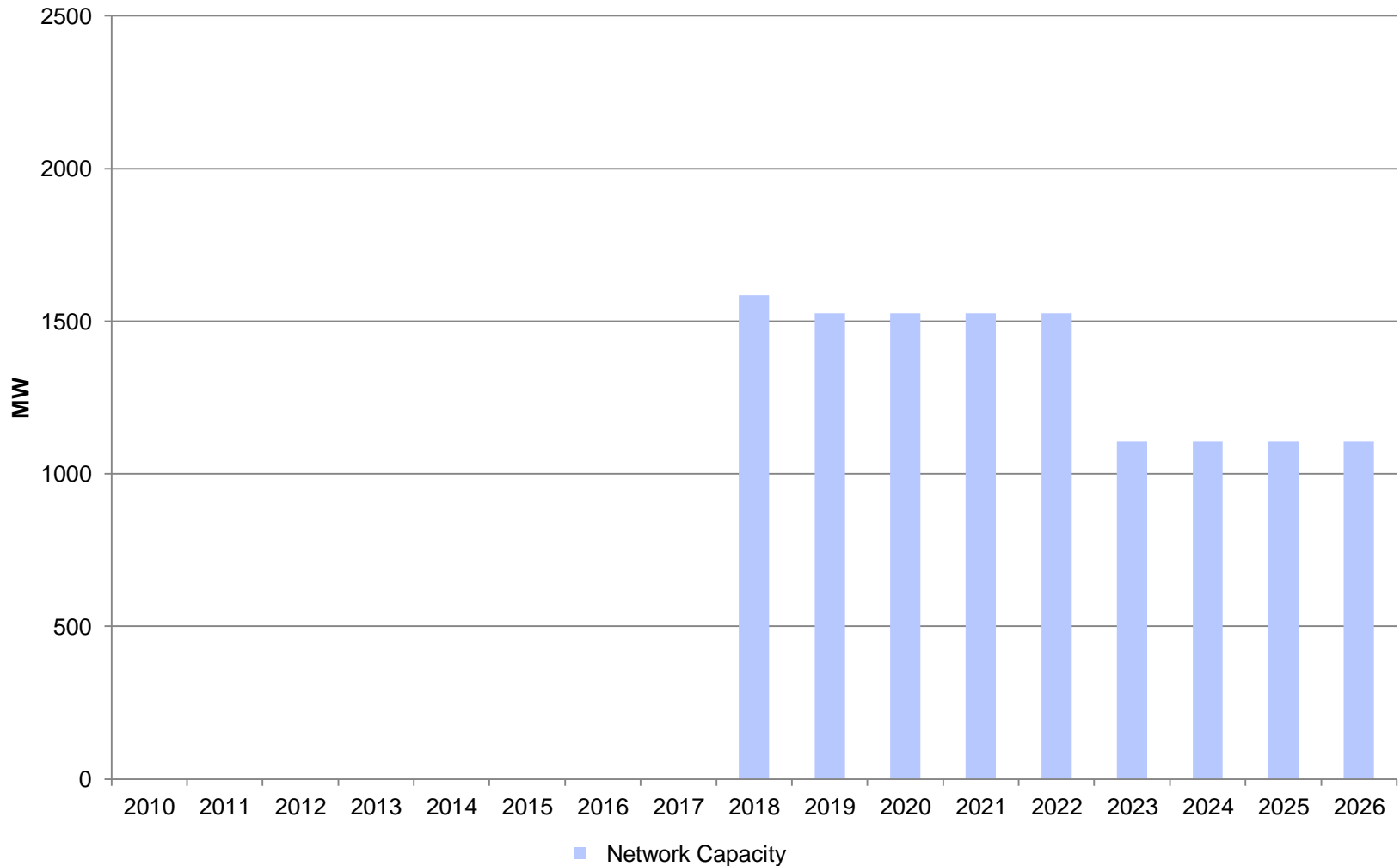
Every \$100 million
of capital expenditure



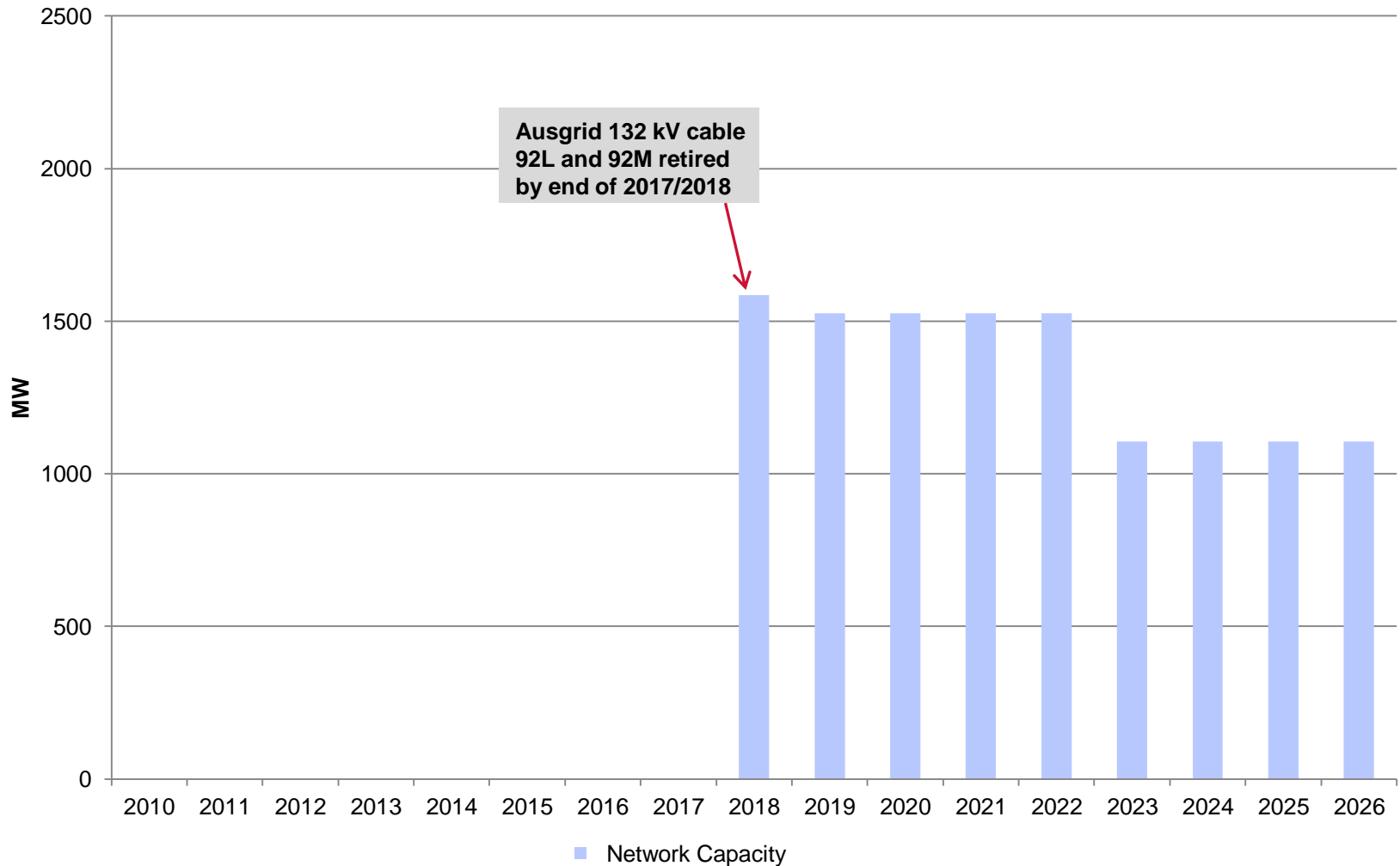
will cost the representative consumer
29 cents per year



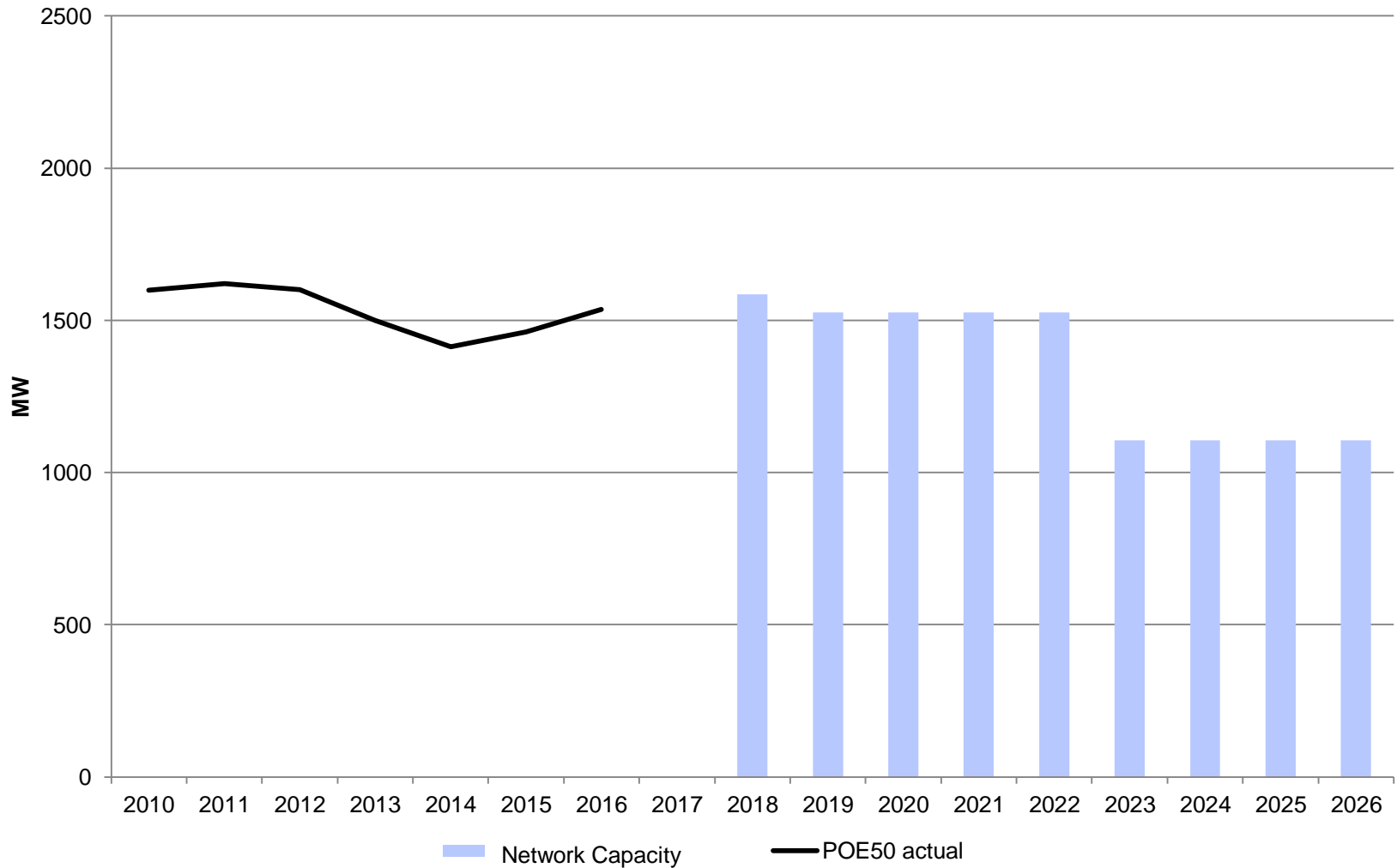
Sydney CBD forecast and network capacity



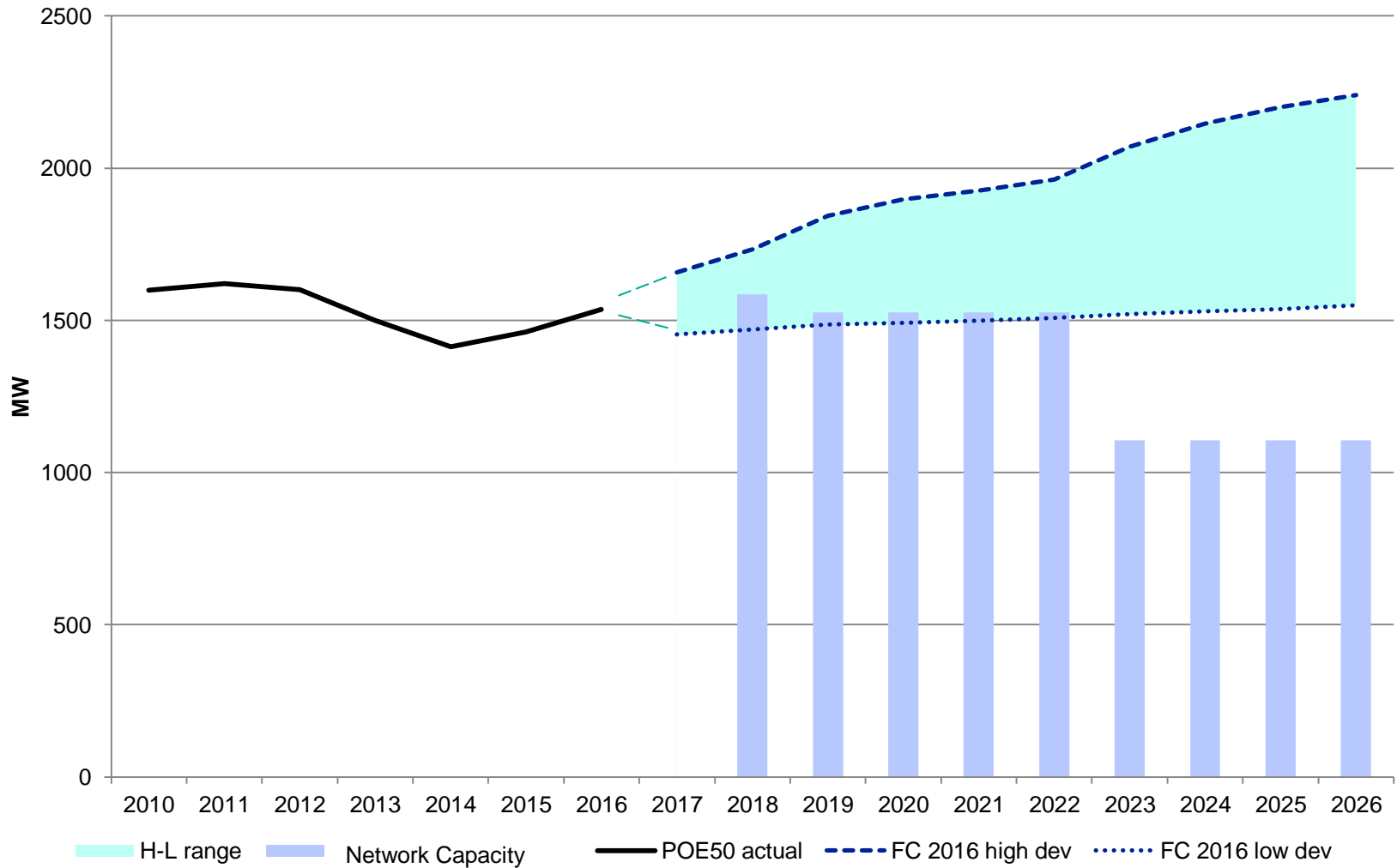
Sydney CBD forecast and network capacity



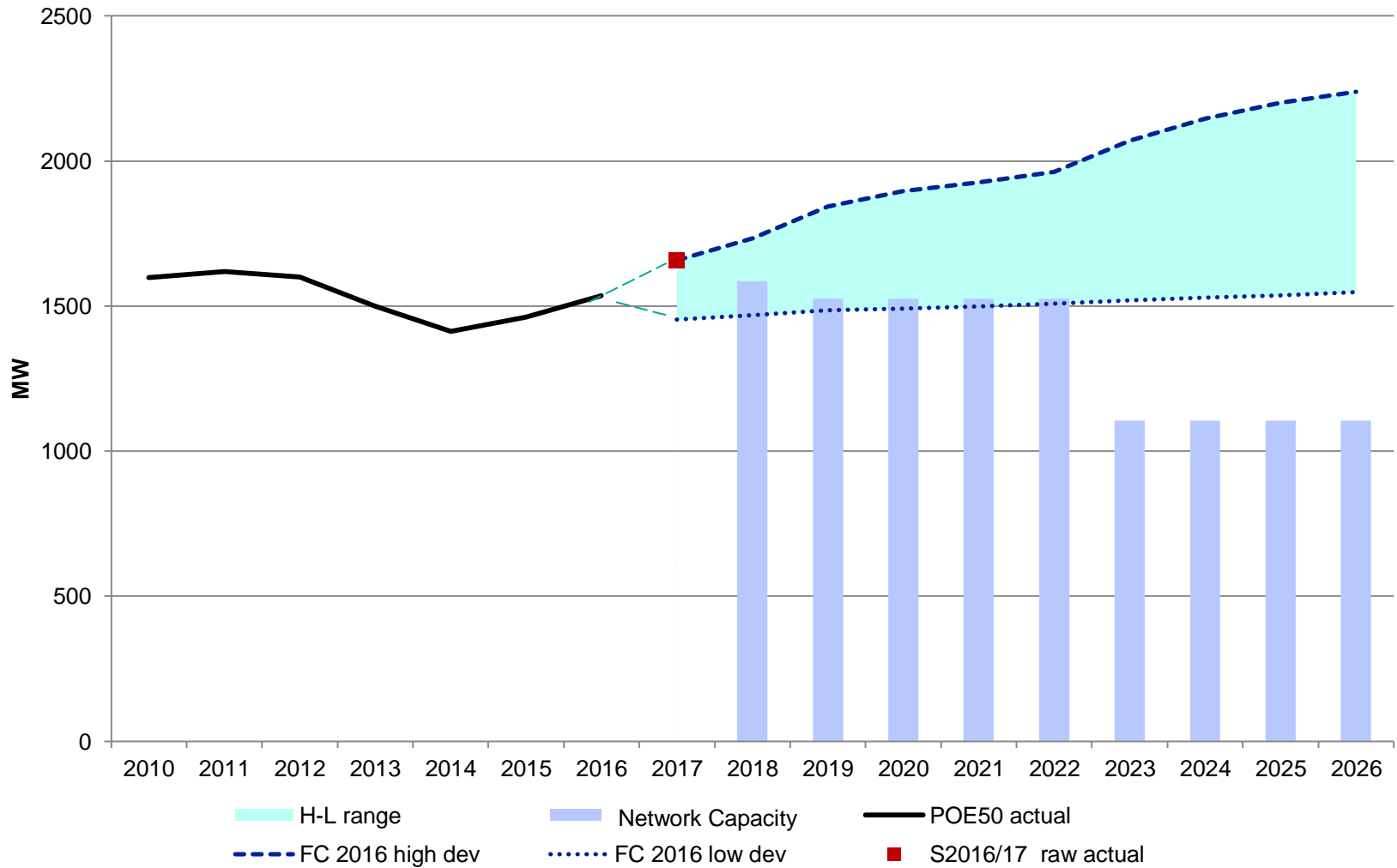
Sydney CBD forecast and network capacity



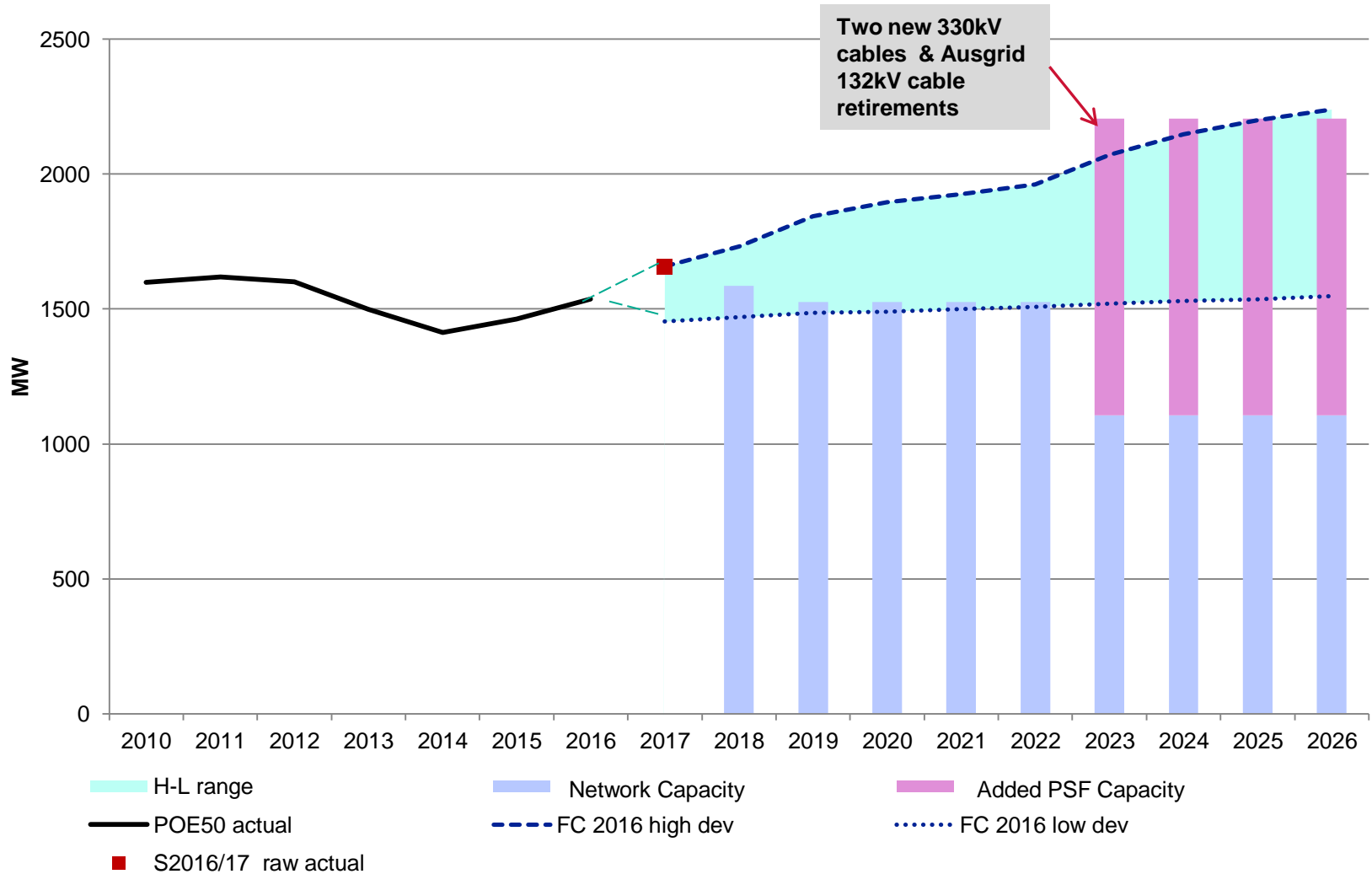
Sydney CBD forecast and network capacity



Sydney CBD forecast and network capacity



Sydney CBD forecast and network capacity



Potential annual bill impact of contingent projects

Note, all contingent projects will follow an identical RIT-T review to other augmentation projects. TransGrid understands that at the time a contingent project is triggered the AER will undertake a similar review that it is currently undertaking for ex-ante projects

NSW South Australia Network Upgrade: \$1.98

- Range: 81cents to \$3.14 per year

Reinforcement of Northern Network: 30 cents

- Range: 18 cents to 41 cents

Reinforcement of Southern Network: 66 cents

- Range: 17 cents to \$1.15

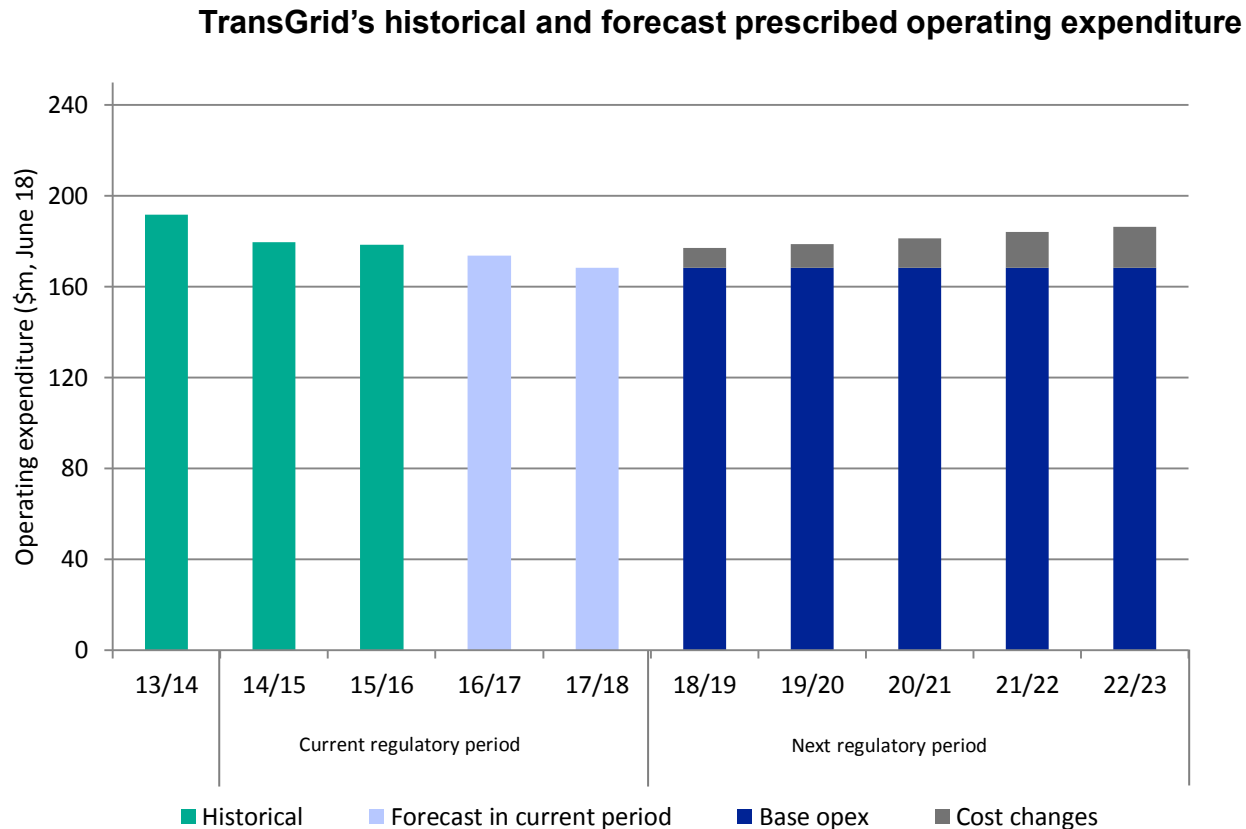
Support South Western NSW for Renewables: 81 cents

- Range: 26 cents to \$1.37

Supply to Broken Hill: 33 cents

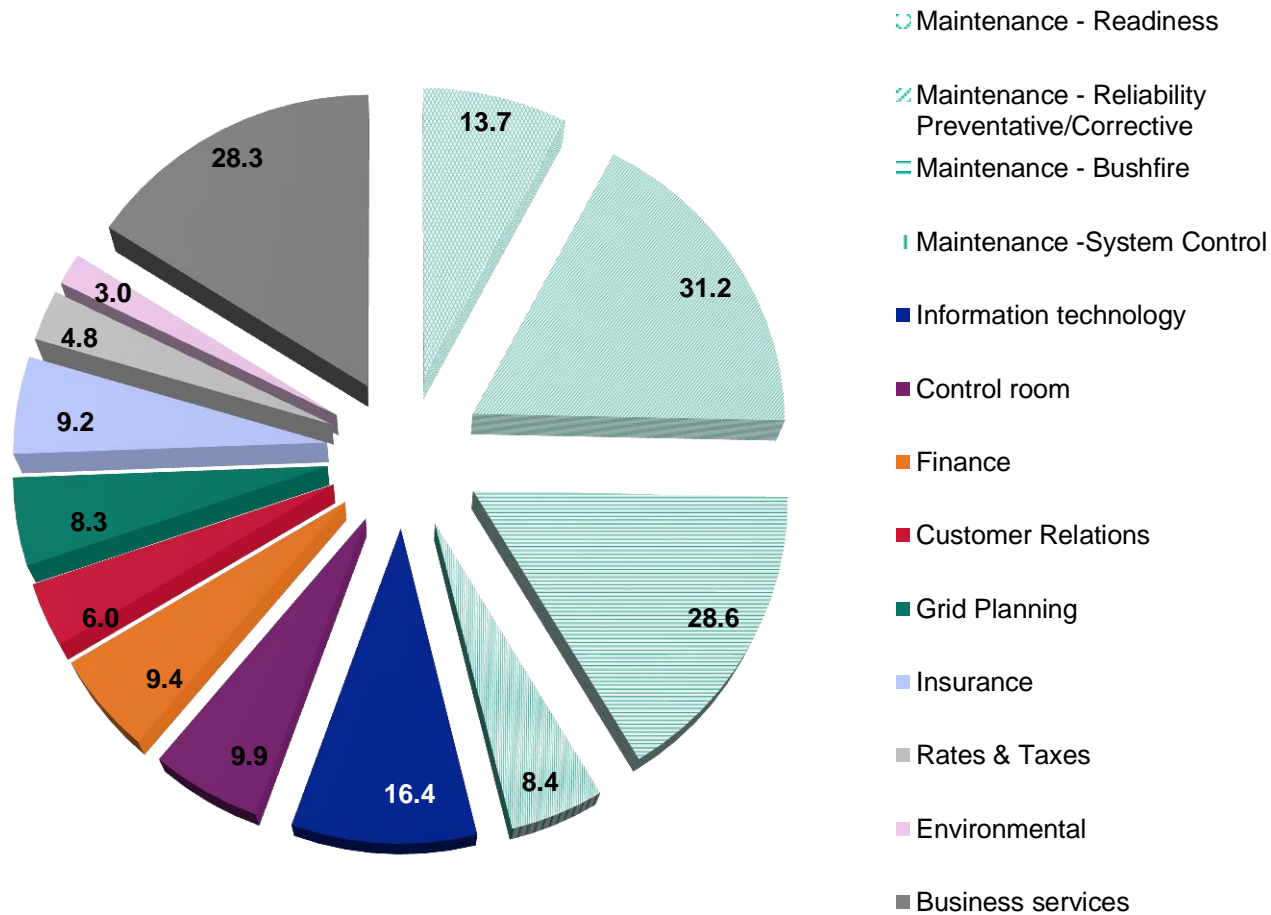
- Range: 15 cents to 52 cents

Operating expenditure forecast



- TransGrid has achieved gross savings in opex of 5% in the current year.
- A further 3% saving forecast for 2017/18.
- All forecast savings taken up in the future opex forecast.

Operating expenditure components 2018/19 \$m

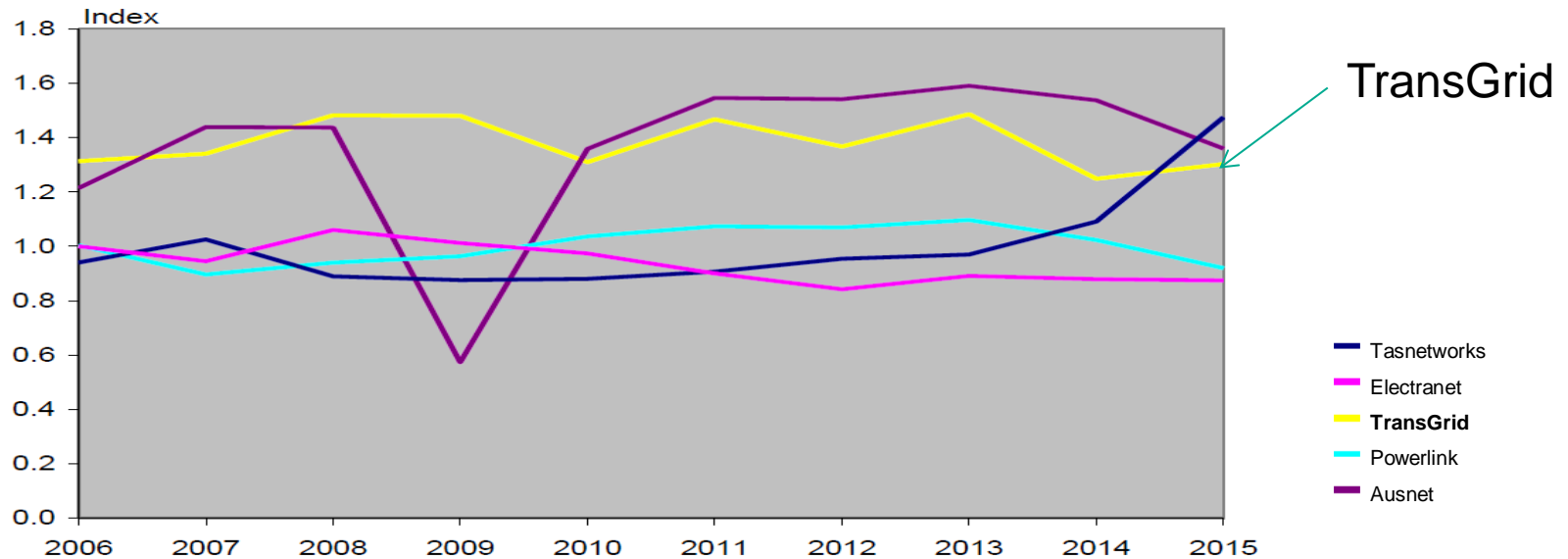


Demonstrating efficiency of base year

Evidence of efficiency:

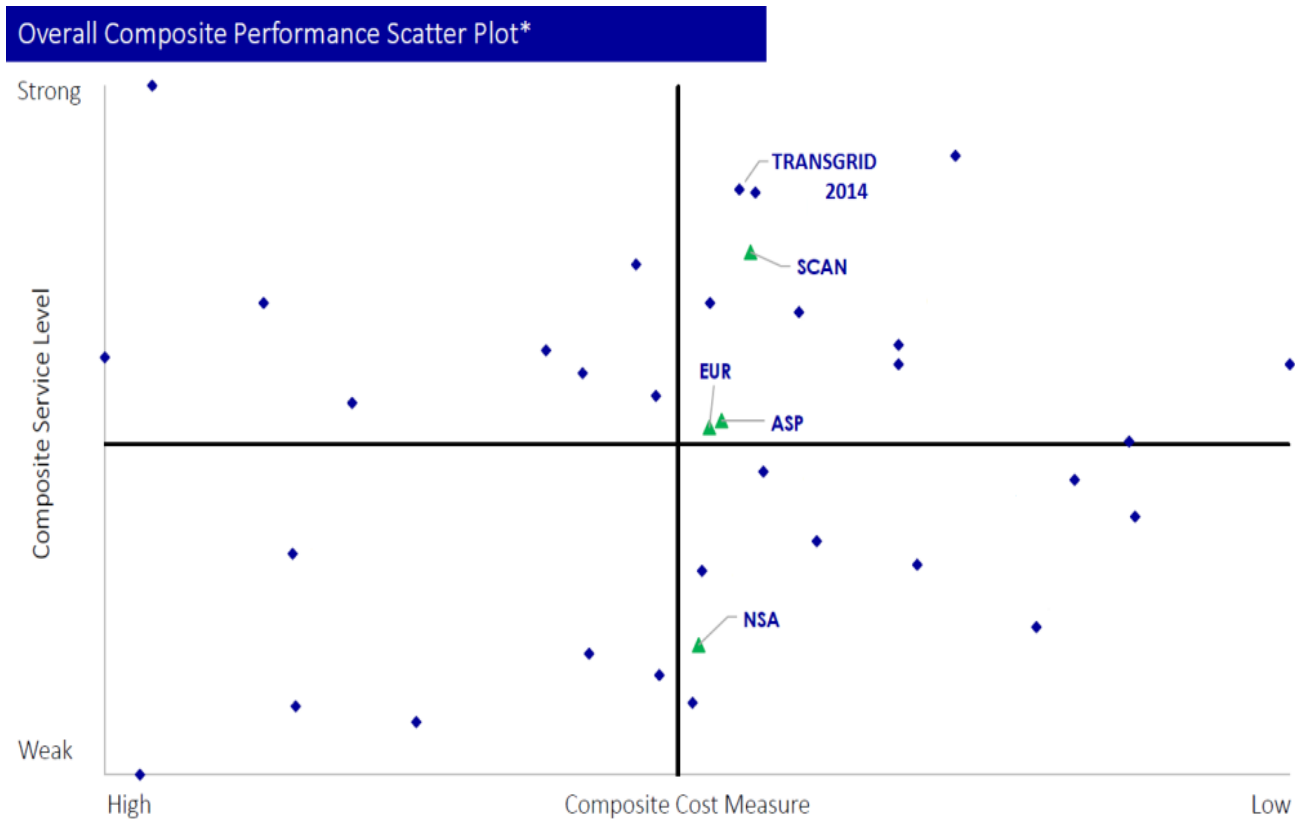
- > Aurecon review of TransGrid's maintenance practices
- > ITOMS benchmarking – Independent 'off the shelf' study
- > CEB IT benchmarking results – Independent 'off the shelf' study
- > KPMG benchmarking results – Independent 'off the shelf' study
- > AER Benchmarking

AER's TNSP multilateral OPEX partial factor productivity indexes, 2006 - 2015



Operating expenditure efficiency indicator

- The most recent International Transmission Operations and Maintenance Study (ITOMS) 2015 compared 31 international transmission businesses
- It identified TransGrid as an 'overall top performing company' for transmission line operations



Operating expenditure forecast approach

Adopted the AER Guideline approach with modifications to improve accuracy and better align to NER requirements

Starting Point for Forecast

Using actual base year data that is demonstrated to be efficient

HSF and Frontier both agree this is a better approach.

Step change for future expenditure on off-easement risk management.

Driven by a change in regulator and its new compliance regime and audit guidelines

Cost of Capital

Adopted the AER Guideline approach for WACC with updates to the MRP to reflect current market conditions

Evidence from the DGM and other sources is that the return on equity has remained constant.

- **SL-CAPM for cost of equity**
 - Equity beta 0.7
 - MRP 7.5%

- **Transition to trailing average**

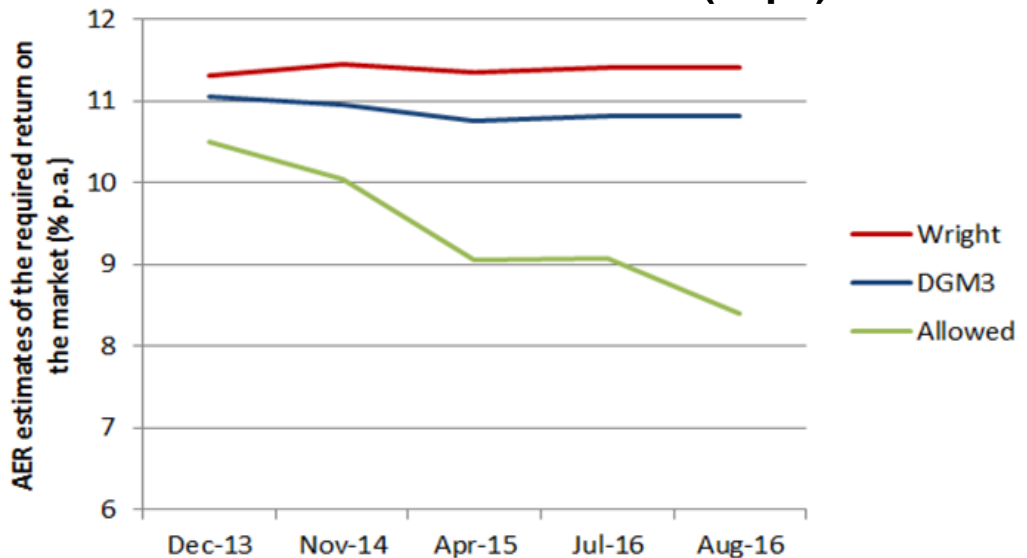
Value of Dividend Imputation Credits (Gamma) 0.25

AER's approach and analysis

AER assessment of DGM:

The model can readily incorporate changes in the market data, such as share prices and interest rates.

AER estimate of the return on the market (% pa)



AER approach to estimating the MRP – AER explanatory statement

...we propose to **have regard to DGM estimates when estimating the MRP**. ... we also **propose to consider an alternative** ... proposed by Professor Stephen **Wright**. Both the Wright approach and the DGM (when used to provide an estimate of the MRP) assume a perfectly negative relationship between the MRP and the risk free rate. Having regard to these estimates, therefore, may lead to more stable returns.