Revenue Proposal Reference Group (RPRG) Meeting #2

5 December 2019, 10:30am – 12:30pm

Introduction, minutes and governance
Matthew Myers

Benchmarking
Greg Hesse

Purpose

- To inform the RPRG of Powerlink's performance in the AER Annual Benchmarking Report for TNSPs.

- To assist the RPRG understanding of what factors influence benchmarking performance.

- To seek RPRG input into what areas Powerlink should focus on to improve benchmarking outcomes.
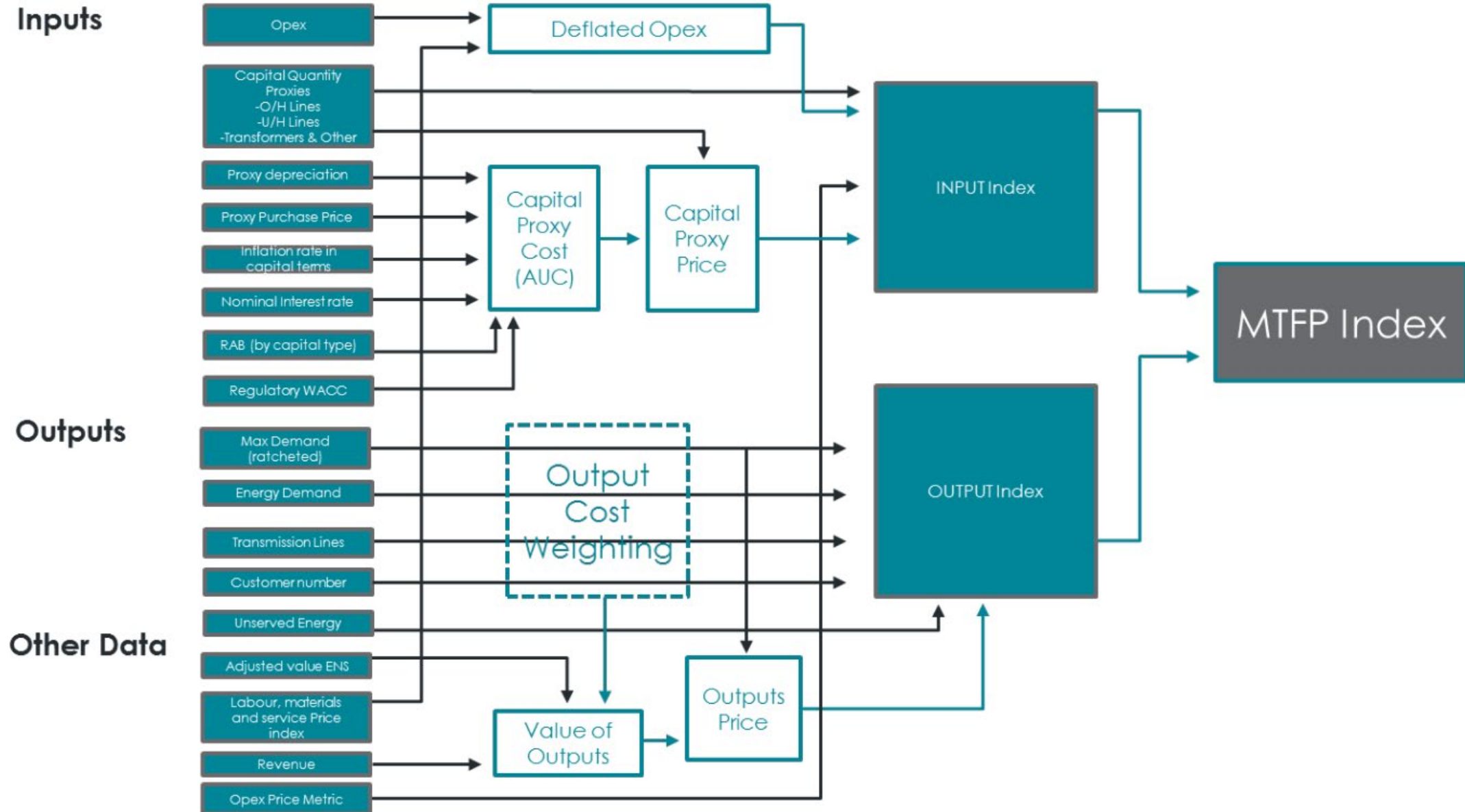
Agenda

- Benchmarking and its context within a transmission Revenue Determination process.

- 2019 benchmarking results:

  o   Multilateral Total Factor Productivity (MTFP).

  o   Capex and opex Multilateral Partial Factor Productivity (MPFP).

  o   Partial Performance Indicators (PPIs).

- Drivers of benchmarking performance.

- Interactive discussion.

Introduction to benchmarking

- The National Electricity Rules (NER) require the Australian Energy Regulator (AER) to prepare and publish an annual benchmarking report that describes the relative efficiency of each Transmission Network Service Provider (TNSP).

- Econometric benchmarking of transmission businesses is not well developed, even internationally. Australia is further limited by the small sample size of only five TNSPs.

- AER focus is on multi-lateral productivity measures – measuring relative changes between businesses and over time. This measures how efficiently a business transforms a 'basket' of physical and financial inputs into a 'basket' of outputs.

- It is not always related to costs to customers.

- Benchmarking also considers partial productivity indicators, e.g. ratios of total costs to specific outputs such as $/customer.

Benchmarking in a Revenue Determination context

- AER must <u>have regard to</u> the most recent annual benchmarking report when assessing whether operating and capital expenditure forecasts provided by a TNSP within its Revenue Proposal represent efficient expenditure.

- The AER uses benchmarking to apply productivity trends to Distribution Network Service Providers (DNSPs) operating expenditure in a deterministic manner, however benchmarking is not used deterministically by the AER for TNSPs.

- Powerlink also has regard to benchmarking as part of the calculation of the trend parameter of its operating expenditure 'base-step-trend' model. This includes having regard to our own benchmarking results, plus industry-wide productivity trends.
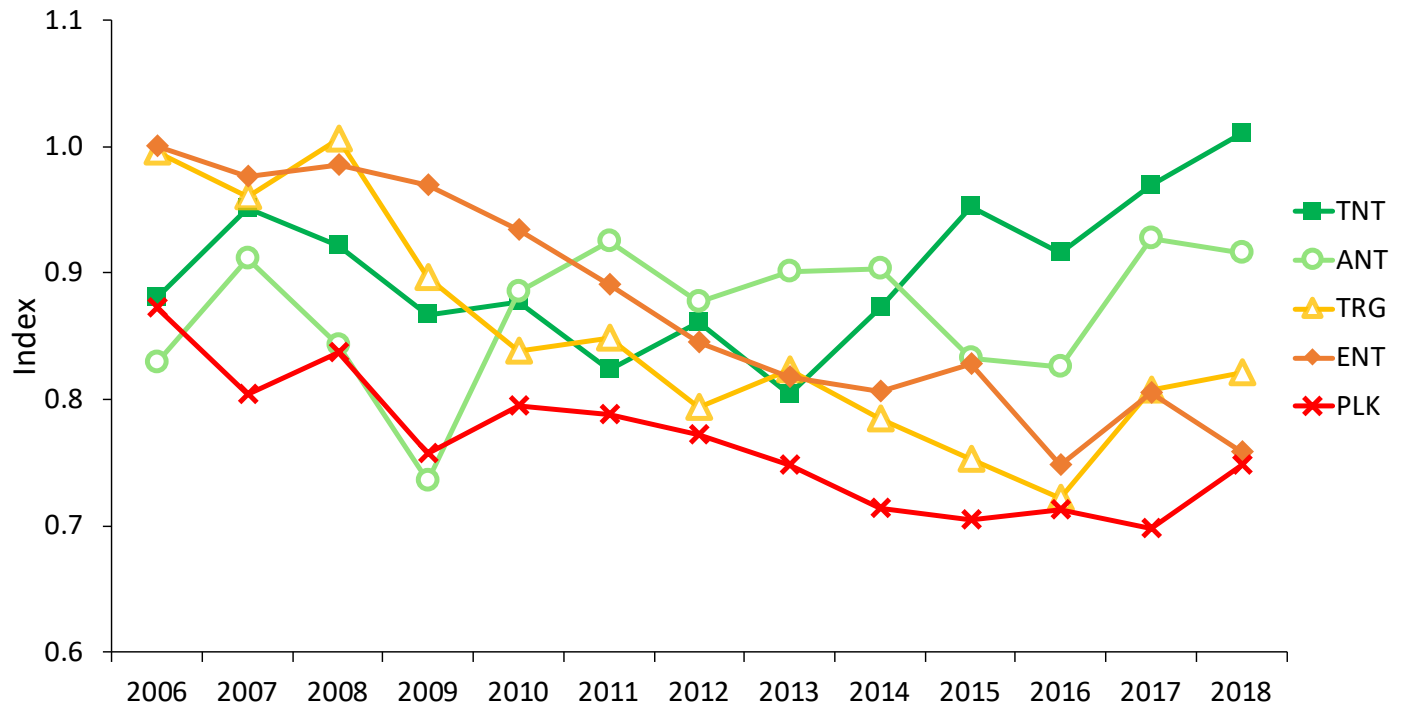
- Multilateral Total Factor Productivity (MTFP) 2006 – 2018.

- Powerlink recorded the largest % improvement in 2017/18 across TNSPs, albeit off the lowest base.

- Improvement was predominantly driven by the ~7% reduction in opex as part of the last Revenue Determination for the 2018-22 regulatory period.

- Contribution to annual change in TFP for 2017/18 is dominated by opex reductions.

Whole of industry outcomes
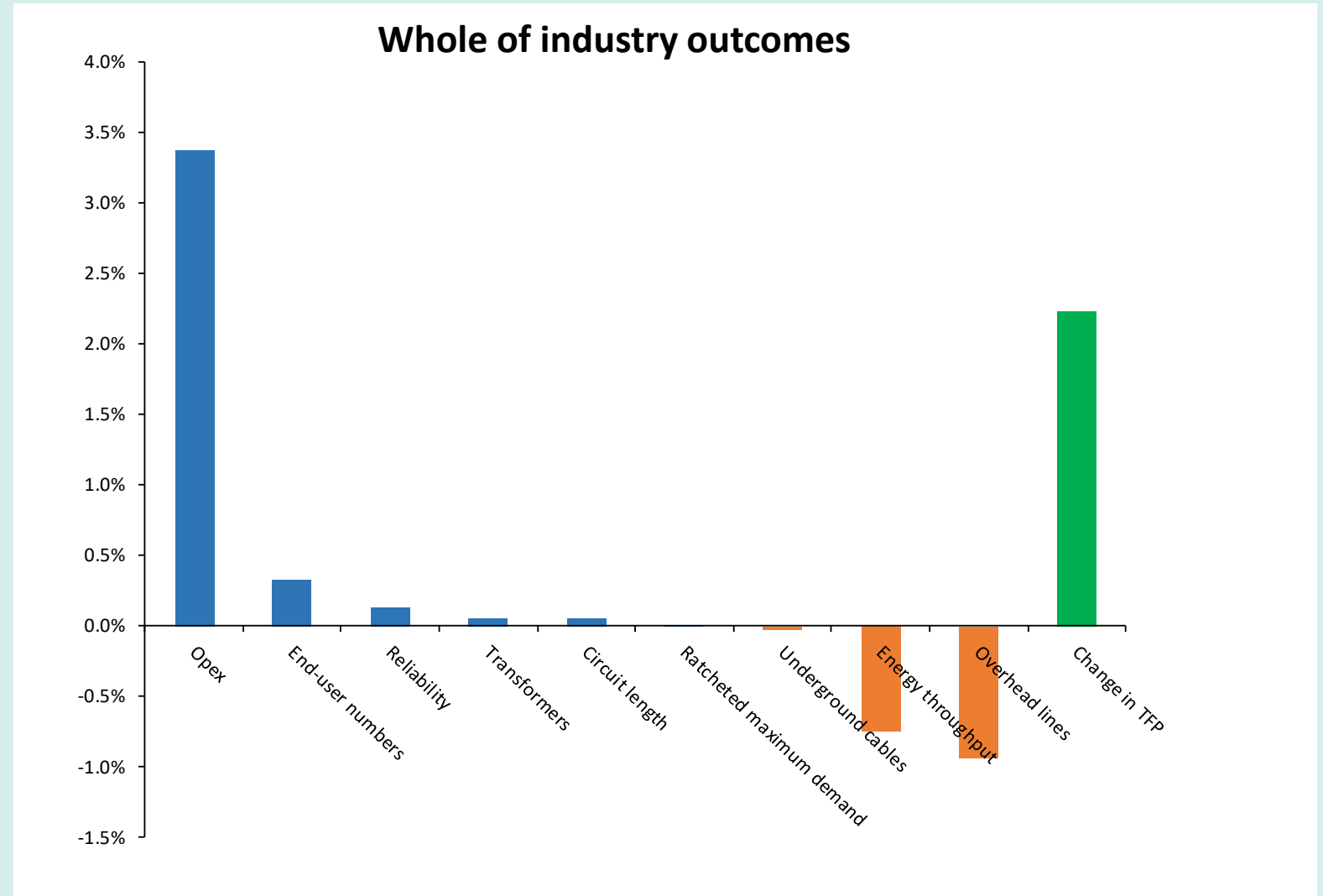
MTFP – individual contributions for 2018

- Note the impact of reduced energy throughput for AusNet (10% reduction) and ElectraNet (20% reduction).

Individual contributions to TFP growth rates

	2018					
	Annual change in TFP (%)	Reliability contribution (ppts)	Overhead lines contribution (ppts)	Energy throughput contribution (ppts)	Opex contribution (ppts)	End-user contribution (ppts)
Industry	**2.2**	**0.1**	**-0.9**	**-0.7**	**3.4**	**0.3**
AusNet (Vic)	0.0	-0.1	-0.1	-2.4	2.0	0.3
ElectraNet (SA)	-6.0	0.3	-0.5	-5.5	-0.6	0.4
PowerLink (QLD)	7.2	-0.1	-0.1	0.3	6.0	0.4
TasNetworks (Tas)	3.2	0.8	0.1	0.0	2.5	0.0
TransGrid (NSW)	1.2	0.2	-2.2	0.2	3.1	0.3

Capex/opex MPFP
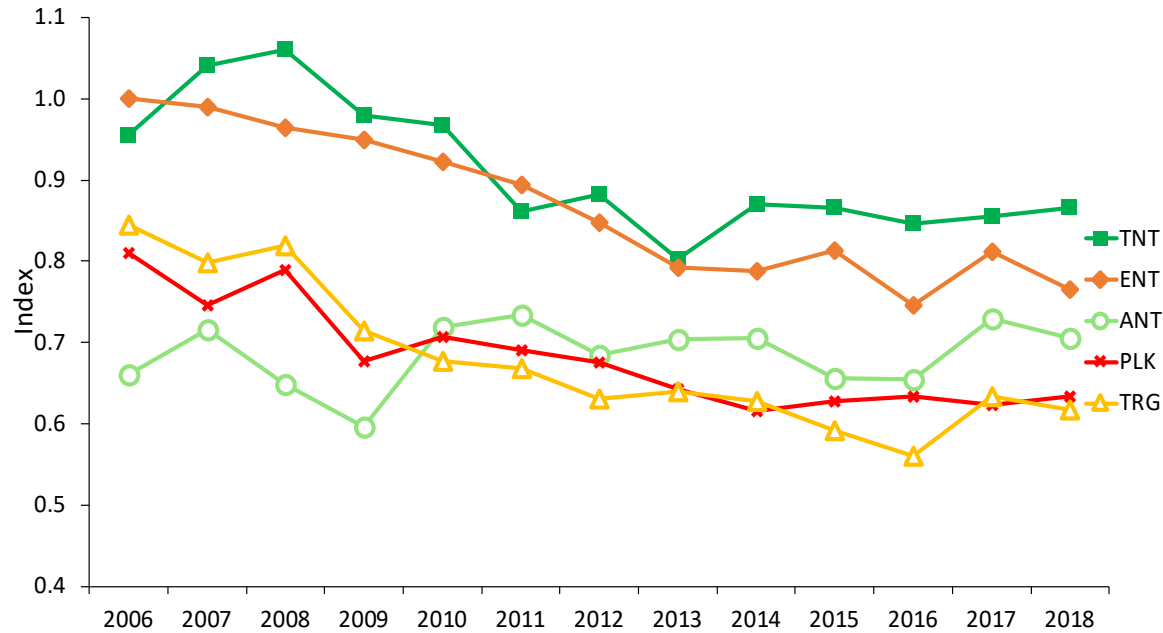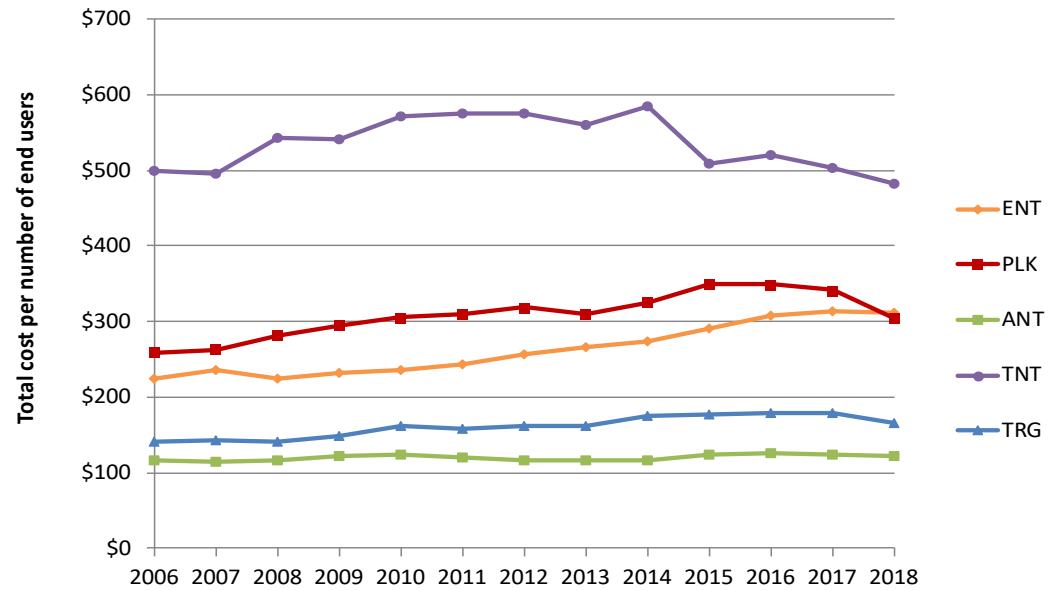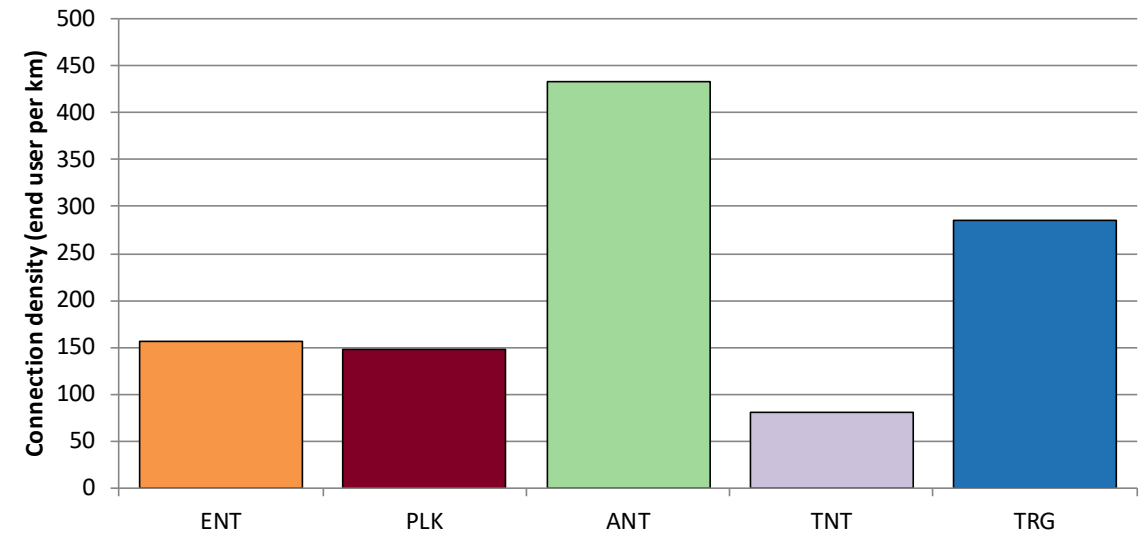

Capex MPFP

Opex MPFP
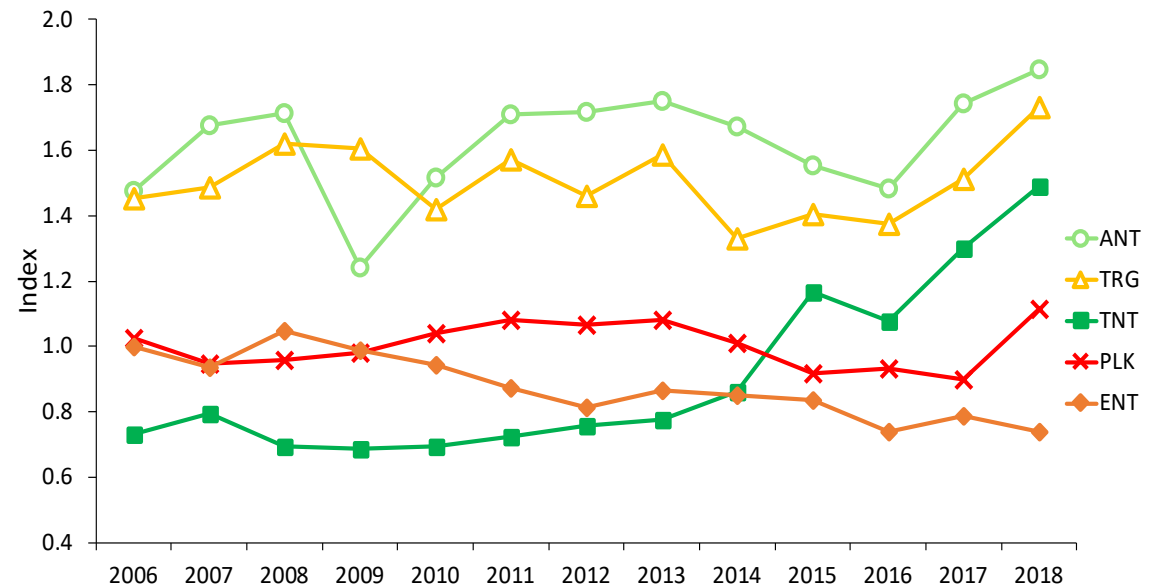
Partial Performance Indicators (PPIs)

Total cost per end user

Connection density (end user/circuit kms)

# Drivers for benchmarking outcomes

Drivers	
Inputs	• Overhead lines and underground cables (MVA.km) – thermal rating x circuit length. • Transformers (MVA thermal rating) • Opex spend – based on total opex spend year-on-year. • Capex spend – based on RAB value, not year-on-year capex.
Outputs	• Energy throughput (GWh) – for Powerlink, forecast to decline by 0.7% over next 10 years. • Ratcheted maximum demand (MW) – for Powerlink, highest maximum demand seen to date in 2019 and is growing by 0.5% over next 10 years. • Circuit length (kms) – for Powerlink, relatively static given no augmentation occurring. • Customer numbers (end users) – approximately 2.5 million, growing slightly by approximately 1% per annum. • Energy not supplied ($'s) – calculated as MWh x Value of Customer Reliability (VCR). Weighting is ~2%, capped at 5.5%.
PPIs	• Annual User Cost (AUC) – standardised WACC return applied to TNSPs own RAB + TNSPs own opex.

Demonstration of Powerlink's Benchmarking Model
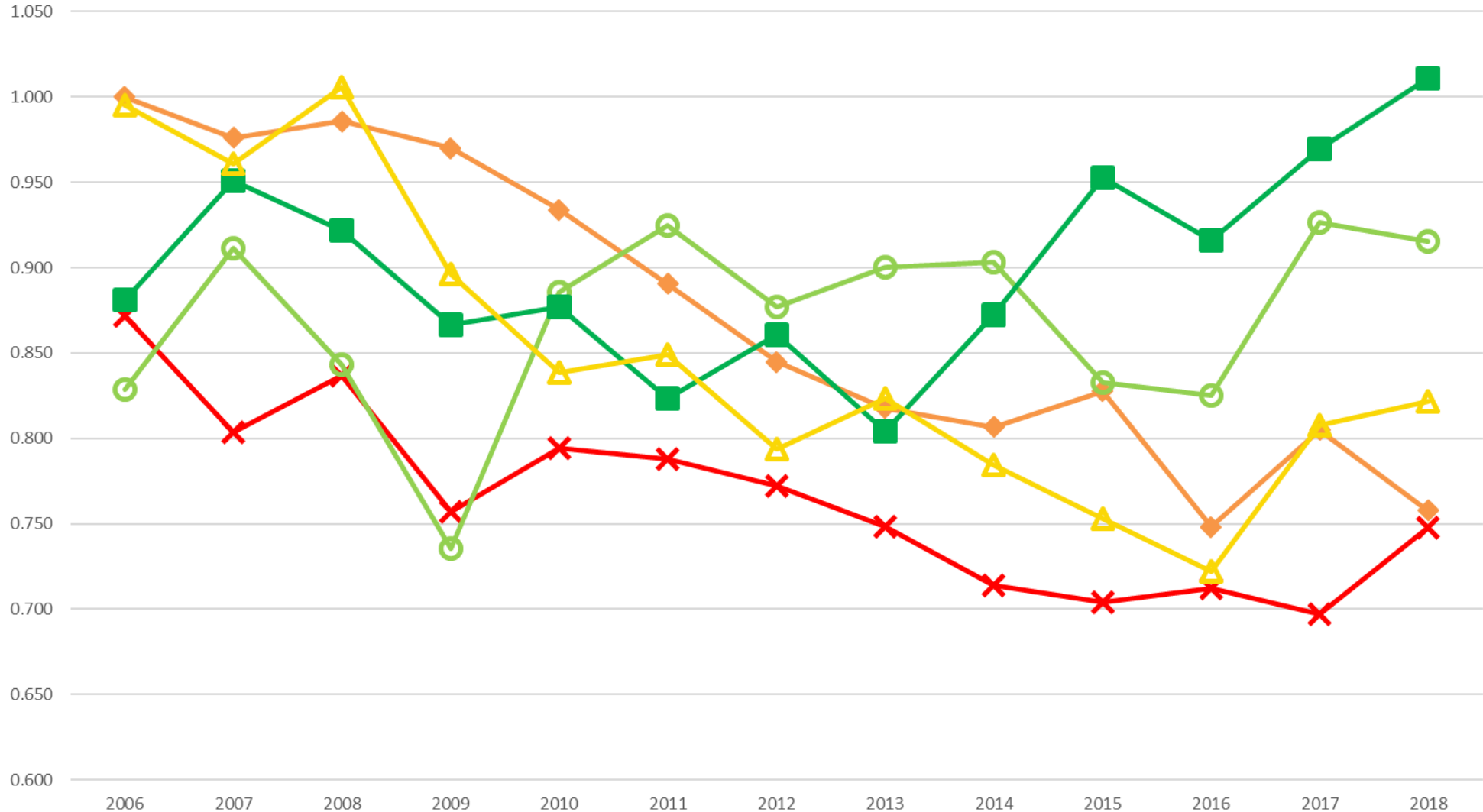
Note – this is an interactive slide which needs to be viewed in PowerPoint.

Powerlink will take the RPRG through this slide on the day of the meeting.

MTFP / Capital MPFP / Opex MPFP

- Ensure transmission lines ratings reflect the maximum secure power transfer capability, which may be less than the maximum current carrying capacity.
- Greater alignment of expenditure capitalisation with other TNSP – e.g. insulator replacement program moves from opex to capex.
- Continue focus on driving efficient opex outcomes. Recognising that this alone will not appreciably alter the MTFP outcomes.

Partial Performance Indicators (PPIs)

- Continue focus on driving efficient costs to consumers. Long-term strategy and will take time to 'move the dial' (RAB + opex).

Should Powerlink investigate changing its capitalisation practices to better align with other TNSPs?

Which benchmarking measures do you consider most relevant for Powerlink to consider when developing its Revenue Proposal?

What are your reasons?

Long-term price impacts
Darryl Rowell, Dana Boxall

Discussion context

- Customers have raised concerns that, after the 2023-27 regulatory period, prices could materially increase if Powerlink's Weighted Average Cost of Capital (WACC) increases.

- Powerlink is also considering the implications of the low WACC environment on returns to its shareholders over the next regulatory period.

- This is an initial discussion with the RPRG about whether there is interest in exploring the potential opportunity to 'smooth' price impacts over the long-term, while ensuring reasonable returns for shareholders. This is potentially achievable given the context of a low risk free rate environment.

Items not considered for this discussion

- Expenditure forecast – we will undertake detailed analysis to develop our expenditure requirements for the Revenue Proposal to ensure they are prudent and efficient. We recognise we will need to demonstrate in the coming months what we are doing to deliver value for our customers.

- Targeted accelerated depreciation – there may be a need to propose targeted accelerated depreciation i.e. on specific assets. We are working to understand these needs and will engage with the RPRG about them at a separate time.

- Our intent is to explore options that could benefit both customers and Powerlink. Options assume full recovery of MAR.

Concept of smoothing price impacts

The above diagram is <u>illustrative only</u> and intended to show how:

a) changes in the MAR, primarily driven by changes in WACC, can cause volatility for customers (in terms of prices) and for Powerlink (in terms of returns).

b) how 'smoothing' revenue could smooth price impacts and why this could be beneficial to customers (long-term) and Powerlink (short-term).

Potential levers and previous customer feedback

Potential levers to achieve a 'smoother' price over the long-term	
Depreciation	• There may be some scope to achieve greater price stability by having a depreciation profile that is able to be adjusted in response to the movements to the return on capital, e.g. by considering the return on and of capital together (as a 'capital charge').
Indexation of RAB	• Reduce the inflation adjustment from RAB and regulatory depreciation. This would result in timing differences in the Return on and of Capital.

- Powerlink has not undertaken detailed analysis of any of these levers as yet and how they could be practically implemented.

- We are mindful of customer feedback in the context of other revenue determination processes. We understand that customers:
  - are sensitive to changes that will increase prices (short- or long-term).
  - are concerned about proposals that result in inter-generational equity issues.

- Some of the challenges which would need to be further explored and addressed:

  o Ability to implement under the NER.

  o Inter-generational equity.

  o Administrative simplicity / complexity.

  o How to ensure intended outcomes can be achieved over multiple regulatory periods.

  o How to determine how much is reasonable to pay now to offset the potential for price increases in the future, i.e. trade-offs between the present and future.

Interactive discussion

Do you support investigating these concepts further?

What further information might you need?

Are there other alternatives you would like us to consider?

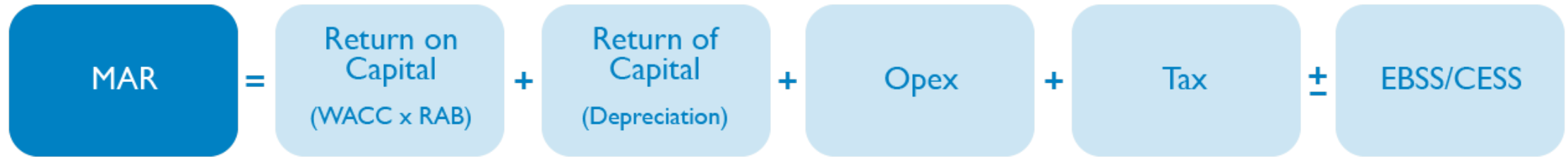**How can we best work with you if we were to develop these options?**

Pre-reading material for long-term price impacts session

$$MAR = \text{Return on Capital (WACC} \times \text{RAB)} + \text{Return of Capital (Depreciation)} + Opex + Tax \pm \text{EBSS/CESS}$$

Return on Capital = a measure of return on investments (capex)
Return of Capital = annual regulatory depreciation allowance
Opex = annual operating and maintenance cost allowance
Tax = calculated effective company tax payable
EBSS = carryover amounts for the Efficiency Benefit Sharing Scheme from the previous regulatory period
CESS = carryover amounts for the Capital Expenditure Sharing Scheme from the previous regulatory period

$$\text{Return on Capital} = \text{WACC} \times \text{RAB}$$

WACC - Powerlink must apply the AER's new Rate of Return Guidelines

RAB - adjusts each year for new assets (capex), disposals, depreciation and CPI

Background reference - why is WACC significant?

- WACC is used to calculate Powerlink's Return on Capital (RoC), which is a component of Powerlink's Maximum Allowed Revenue (MAR).

- The RoC is the return Powerlink earns on its Regulated Asset Base (RAB) and is calculated as WACC x RAB.

- Powerlink's expenditure forecasts for the 2023-27 regulatory period indicates RoC will be ~42% of Powerlink's MAR.

- While it is still the largest component of MAR, RoC has significantly declined over time. A large contributor to this has been reductions in the WACC.

- The AER's 2018 Binding Rate of Return Guideline sets the WACC parameters.

- One parameter that contributes to WACC is the risk free rate, which is the primary driver for the forecast reduction in WACC for the 2023-27 regulatory period.

Powerlink MAR ($2021/22)

Background reference - risk free rate
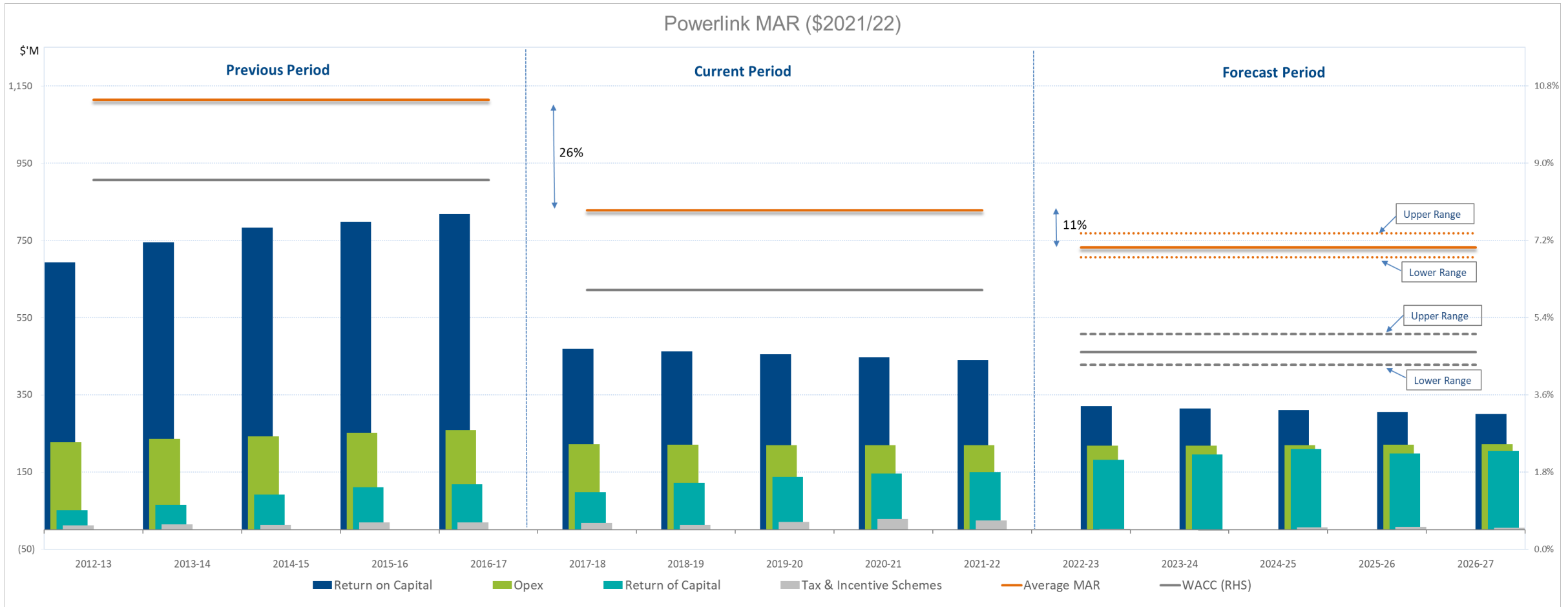
10-year Australian Government Bond Yield

Sources: RBA; Yieldbroker

- The Australian 10 year bond yield is used as the risk free rate.

- A lower risk free rate results in a lower WACC, lower MAR – and vice-versa.

- Powerlink's current Determination (April 2017) was based on a risk free rate at the time of 2.85%.

- The prior Determination was (April 2012) was based on a risk free rate of 4.17%

- Our initial forecast is based on a risk free rate of between 0.8-1.1%.

- **The risk free rate is at historic lows and there is potential for an increase in the risk free rate over the long-term.**