2023-27 Revenue Proposal

Customer Panel presentation

Preliminary Positions and Forecasts Paper (PPFP)
July 2020

Purpose of this session

- Discuss Powerlink's Preliminary Positions and Forecasts Paper (PPFP) for its 2023-27 Revenue Proposal.
- Gather input on Powerlink's July 2020 (Cut 3) forecasts and proposed engagement activities.
- Input will inform our Draft Revenue Proposal, which we are aiming to release for consultation by end September 2020.
- This presentation is intended to also be used for wider engagement beyond the Customer Panel and Revenue Proposal Reference Group (RPRG). Slides providing further background and context are included for this reason.

All figures are preliminary and indicative only. They do not represent Powerlink's final Revenue Proposal position.

Purpose of the PPFP

This Preliminary Positions and Forecasts Paper (PPFP) is another step in our ongoing journey of engagement and development of the Revenue Proposal. It is a reflection of our thinking at this point in time.

The purpose of the PPFP is to:

- Provide an indication of where key forecasts and positions are heading - this builds on existing information we've shared and is our "Cut 3" forecast. Our Cut 1 forecast was in November 2019 and Cut 2 was April 2020.
- Explain the key drivers and assumptions behind our forecasts.
- Enable topics for deeper engagement between August-December to be identified.
- Provide broader range of customers and stakeholders opportunity to provide feedback, beyond our Customer Panel and Revenue Proposal Reference Group (RPRG).
- Important step toward 'capable of acceptance'.

PPFP components

- There are four components to the PPFP, outlined below, which should be read and considered together.
- All figures in the PPFP are presented in $2021/22 unless otherwise stated.

Component	Description
Presentation	• This presentation outlines our forecasts and preliminary positions for Maximum Allowed Revenue (MAR), Regulated Asset Base (RAB), Rate of Return (RoR), capital expenditure (capex), operating expenditure (opex), incentive schemes and our customer engagement program. • The background slides of this presentation provide further detail on the Revenue Determination process, capex and opex categories and forecasting approach, customer engagement approach and feedback received to date.
Supporting Document	• A brief supporting document that provides further detail on our drivers of capital and operating expenditure and the inputs and assumptions used to derive this forecast.
Data Pack	• An excel spreadsheet with details of historical, current and forecast figures of MAR, RAB, capex and opex, as well as a comparison of the Cut 3 forecasts with our prior forecasts from December 2019 and April 2020.
Background documents	• We recommend reading our Expenditure Forecasting Methodology, Engagement Plan, Business Narrative and previous presentation information provided for our RPRG meetings. These documents will provide further context.

Items still under consideration

- Several items relevant to the Revenue Proposal are still being considered and are not within the PPFP.
  - Service Target Performance Incentive Scheme (STPIS).
  - Shared assets.
  - Nominated pass throughs.
  - Demand Management Innovation Allowance Mechanism (DMIAM).

July 2020 forecasts overview

Matthew Myers

2023-27 Revenue Proposal objectives

Deliver a Revenue Proposal that is capable of acceptance by our customers, the AER and Powerlink.

Balance the needs for appropriate expenditure to manage the network, a reasonable price for customers and appropriate returns to Shareholders.

Meaningfully engage with our customers and other stakeholders.

Ensure the Network Vision is considered within determination forecasts and plans as part of Powerlink's long-term narrative.

Improve efficiency and robustness of the determination process for Powerlink, our customers, stakeholders and the AER.

We are committed to providing a Revenue Proposal that:

- is based on genuine, demonstrated needs;
- allows us to meet all our regulatory obligations for prescribed services; and
- is justifiable to the AER and customers as prudent and efficient.

Revenue Proposal considerations

- Below are a number of key considerations specific to the Revenue Proposal. Refer to our Business Narrative for context on our broader operating environment.

Increased external engagement

Affordability

COVID-19 impacts

Operating expenditure needs

Network capex investment

Contingent reinvestment

STPIS scheme

Cyber security

Benchmarking

Insurance

Inflation

Declining Rate of Return

Impact of COVID-19

- COVID-19 is impacting our current regulatory period and may impact our next regulatory period.
- From a Revenue Proposal perspective, these impacts include (but are not limited to):
    - lower demand and energy – potential impacts to timing of projects (including Integrated System Plan (ISP) projects) and network utilisation;
    - capex – delay in network capital project delivery in 2019/20 and 2020/21 with scope for some catch-up in 2021/22;
    - opex – we are now intending to use 2018/19 as our base year, due to potential impacts to 2019/20 and 2020/21. COVID-19 may also impact opex rate of change elements (e.g. output growth and productivity);
    - insurance premiums – potential further upward pressure;
    - incentive scheme performance – Efficiency Benefit Sharing Scheme (EBSS), Capital Expenditure Sharing Scheme (CESS) and STPIS;
    - benchmarking; and
    - ability to effectively engage, both within the business and externally, on the Revenue Proposal.
- Many short- and long-term potential impacts of COVID-19 remain uncertain and we are working to understand these impacts.

Material changes since our April 2020 forecast

- Refer to the PPFP Data Pack for a more detailed comparison between our November 2019, April 2020 and July 2020 forecasts.

Topic	Key changes
Capex	• Forecast capex is $263m and 20% lower than our April 2020 forecast. • This is due to the ongoing conditioning and calibration of the Repex Model and review of unit rates. This forecast integrates a mix of 'top down' forecasts based on the Repex Model and 'bottom up' forecasts from individual project estimates.
Opex	• Forecast opex is $7.1m and 0.6% lower than our April 2020 forecast. • We are intending to use 2018/19 as our base year. • We have reduced our potential step changes from the April 2020 forecast from ~ $26.1m to $11.8m • The rate of change (trend) has increased from 0.92% to 1.06%. This is due to adjustments to the Wage Price Index input and output growth inputs of the rate of change.
RAB/RoR/MAR	• Inflation forecast is 2.25%, per the AER's methodology and using trimmed mean inflation due to COVID-19 impact. • Cost of debt updated to reflect Powerlink's most recent prevailing interest rate and assume this remains unchanged for the 2023-27 regulatory period, resulting in a RoR forecast of 4.49% to 4.02% over the 2023-27 regulatory period. • MAR is higher by $32.4m (1%) compared to the April 2020 forecast due mainly to the adoption of the year-by-year tracking approach for forecasting depreciation.
Incentive schemes	• CESS has been updated and results in a $4.9m increase in MAR for the 2023-27 regulatory period. • EBSS has been re-calculated and will increase MAR by $6.1m for the 2023-27 regulatory period.

July 2020 forecast - high level overview

Maximum Allowed Revenue

2018-22 - $3964.7m

2023-27 - $3480.4m

$484m (12%)

Rate of Return

2018-22 - ~6%

2023-27 - ~4.49%

1.5%

Capital expenditure

2018-22 - $904.8m

2023-27 - $1065.2m

$160m (18%)

Operating expenditure

2018-22 - $1056.5m

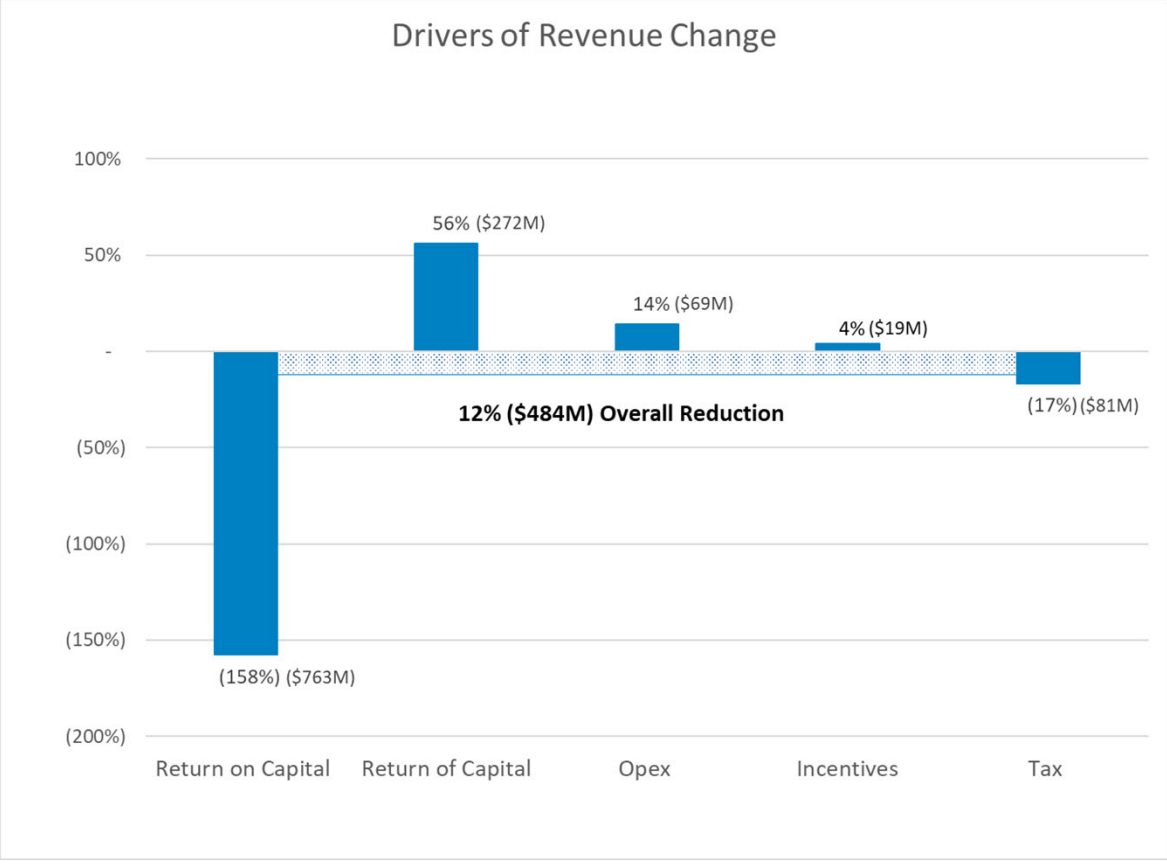
2023-27 - $1125.0m

$68.5m (6%)

Notes:

- *All figures are in $m (2021/22 real) and are for the full five-year regulatory period.*
- *RoR / Weighted Average Cost of Capital (WACC) is nominal vanilla.*

Drivers of MAR change



2023-27 MAR is forecast to decrease by ~12% ($484m) compared to the current regulatory period. Key contributors are:

- Return on Capital - $763m lower due to lower Rate of Return (RoR)[1].
- Return of Capital - $272m higher due to the impact of a lower revaluation of the RAB and change to the year-by-year depreciation tracking approach.
- Opex - $69m higher, due to the rate of change, higher insurance premiums, Australian Energy Market Commission (AEMC) Levy[2] and proposed cyber security step change.
- Incentives - $19m higher, due to the introduction of CESS and a forecast revenue increment under both EBSS and CESS.
- Tax - $81m lower, primarily due to the change in estimating taxation as a result of the AER's 2018 Tax Review.

Comparison against current Rate of Return

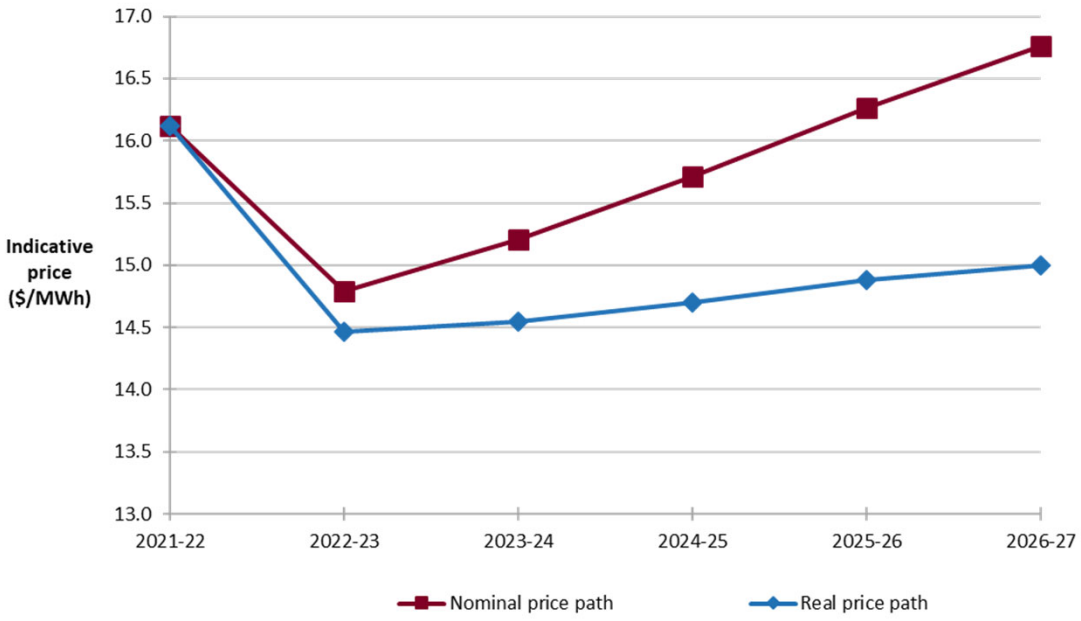
- We recognise the RoR is largely driven by external financial markets.
- For comparison, if the current RoR (~6%) was applied to the July 2020 capital and operating expenditure forecasts, our MAR would be increasing in the 2023-27 regulatory period by ~$640m.

Notes:

[1] *Based on RoR scenario of 4.49% for Cut 3.*

[2] *We are still investigating alternative treatment.*

Forecast impact on prices



- Powerlink's contribution to the average electricity bill is ~9% for households and small businesses[1].
- This equates to ~$113 per annum for households[2] and ~$192 for small businesses[3].
- Based on July 2020 forecast MAR ranges, the indicative impact to electricity prices in the first year of the next regulatory period (2022/23) would be:
  - Residential – reduction of ~$12 (11%).
  - Business – reduction of ~$21 (11%).
- On average, price increases for average residential households and small businesses will remain within CPI (assumed forecast of 2.25%) for the remainder of the regulatory period.

[1] based on the 2019 Australian Energy Market Commission (AEMC) Electricity Price Trends Report, published December each year.
[2] based on the Queensland Competition Authority's (QCA) annual Tariff 11 (residential) median energy usage of 4,061kWh p.a.
[3] based on the QCA's annual Tariff 20 (small business) median energy usage of 6,831kWh p.a.

RoR, MAR and RAB

Dana Boxall

Key observations – financial elements for the 2023-27 regulatory period

Topic	Key observations
RAB	• The Regulated Asset Base (RAB) is forecast to continue to decline in real terms over the current regulatory period and into the 2023-27 regulatory period. • RAB will increase marginally in the period in nominal terms, due to inflation.
Depreciation	• We propose to change the methodology for forecasting depreciation from the weighted average remaining life (WARL) method to year-by-year tracking. • We also propose to apply an adjustment to smooth the transitionary impact from WARL to year-by-year tracking, in response to customer feedback. • The change in approach will increase MAR by ~$12m p.a. over the 2023-27 regulatory period. This would be ~$20m p.a. without the proposed adjustment to smooth the transitionary impact.
RoR	• The Rate of Return (RoR) is forecast to be lower over the next regulatory period (4.49% in Year 1 to 4.02% in Year 5). • This is primarily driven by a low risk free (Government bond) rate and assumes that Powerlink's 2020/21 prevailing interest rate remains unchanged for the 2023-27 regulatory period.
MAR	• Maximum Allowed Revenue (MAR) is forecast to be ~$3.5bn over the 2023-27 regulatory period. This is a reduction of ~ $484m (12%) from the current regulatory period. • This is primarily driven by a reduction in the return on capital, which is lower by ~35% than the current regulatory period due to the declining RoR.
Contribution to MAR	• Return on capital, return of capital (depreciation), tax and incentive schemes contribute approx. 70% to MAR.

Cut 3 inflation assumption

- We have assumed 2.25% inflation for the 2023-27 regulatory period.
- Our view is that trimmed mean inflation better reflects underlying expectations of inflation and smooths the volatility we are currently seeing in headline inflation (due to COVID-19).
- This is based on the AER's methodology and includes trimmed mean inflation forecasts, as used by the AER in recent revenue determinations[1].
- The below table shows the difference between headline and trimmed mean inflation forecasts.
- We have also adopted trimmed mean inflation for the EBSS and CESS models for 2019/20 and 2020/21. We are discussing this approach with the AER.
- The AER is undertaking a review of the inflation approach and expects to release a Final Position Paper in December 2020. Powerlink will re-assess its inflation forecast for the Revenue Proposal at that time.

	2020	2021	2022	2023-27
Trimmed mean	1.5%	1.25%	1.5%	2.25%
Headline	(1.0%)	2.75%	1.5%	2.15%

[1] Energex, Ergon Energy, Jemena Gas Networks, DirectLink and SA Power Networks.

Change in depreciation tracking approach

- Powerlink will propose to change the approach for calculating the forecast regulatory depreciation allowance from the Weighted Average Remaining Life (WARL) to a year-by-year tracking approach going forward.
- Our view is that year-by-year tracking is a more accurate method of depreciating our assets, better aligns depreciation with the capex spend profile, and better reflects intergenerational equity in the future.
- We discussed this position with the RPRG in June 2020.
- While there was general agreement the year-by-year tracking is a more accurate approach, there was concern about the impact on customers in the next regulatory period.
- In response to the customer feedback, we have subsequently identified an option to smooth the impact of the transition that meets the National Electricity Rules (NER) requirements and spreads the initial increase across two regulatory periods.
- We have had initial discussions with AER staff regarding this smoothing approach.

Change in depreciation tracking approach

- Changing the depreciation forecasting approach to year-by-year will increase Powerlink's revenue by ~$20m p.a. (3%) over 2023-27. This is equivalent to a ~$2 p.a. increase for the average residential customer.
- To smooth the impact of the transition from WARL to year-by-year tracking, we propose a minor change in the remaining life of the secondary systems asset class.
- We consider this minor change meets the NER requirements for the depreciation of assets.
- The adjustment will reduce the increase in Powerlink's MAR from ~$20m p.a. to ~$12m p.a. over the 2023-27 regulatory period with an offsetting increase in the 28-32 regulatory period. This is shown in the table below.

Regulatory Period	Indicative MAR Impact p.a. ($Real 21/22)	Indicative MAR Impact p.a. ($Real 21/22) - Adjusted	Variance
RR23-27	$20m	$12m	($8m)
RR28-32	($27m)	($19m)	$8m

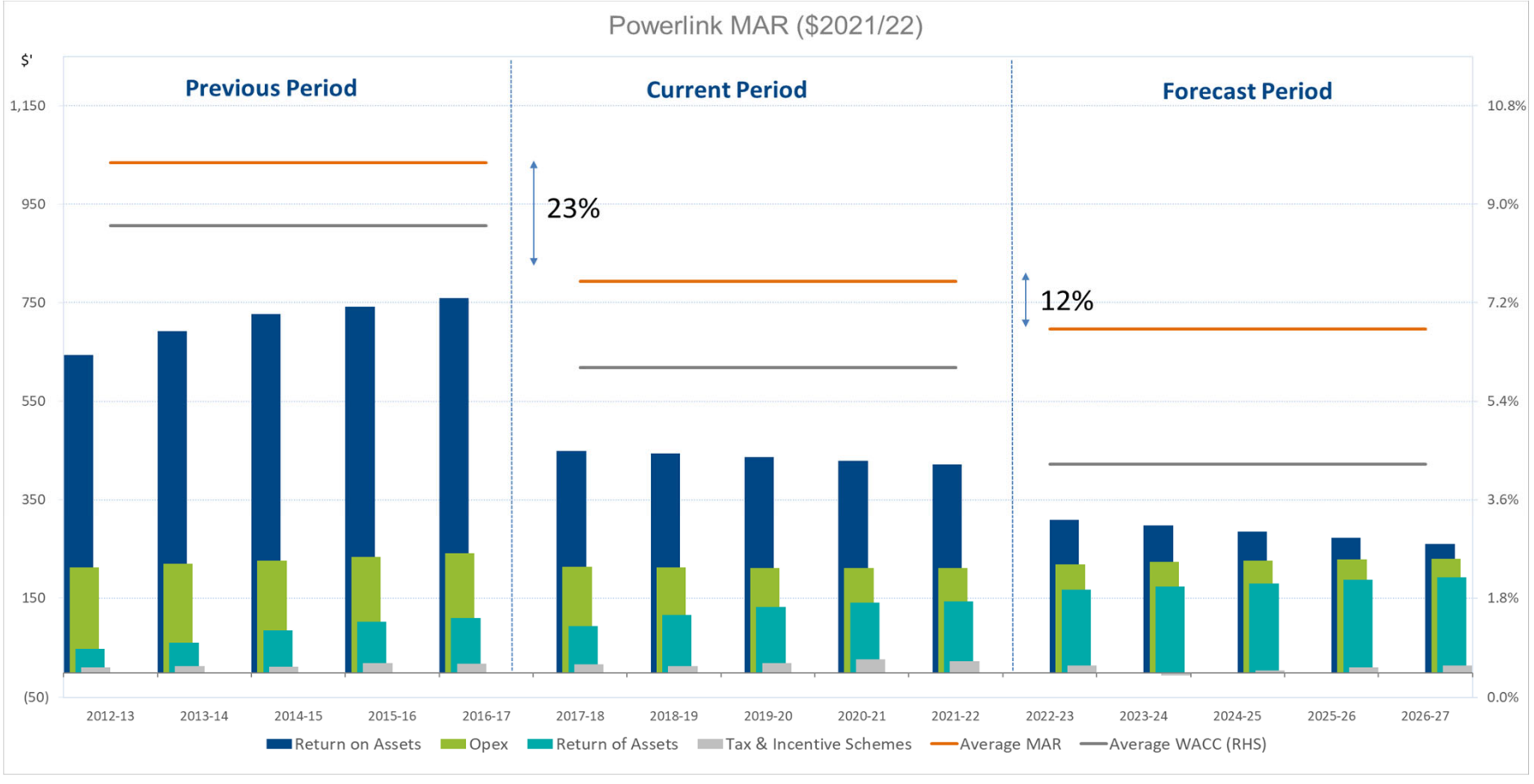
Cut 3 forecast - RoR

- The rate of return for the 2023-27 regulatory period is ~1.5% lower than the current regulatory period, primarily driven by the current historic low interest rate environment.

Parameter	Base	Assumptions
Risk Free Rate (Rf) *(Change from April 2020)*	0.93% *(0.07%)*	Rf based on recent 20 day averages
Market Risk Premium (MRP)	6.10%	As per the AER's 2018 binding Rate of Return Instrument
Equity Beta	0.6	As per the AER's 2018 binding Rate of Return Instrument
Return on Equity *(Change from April 2020 forecast)*	**4.59%** *(0.07%)*	
Return on Debt *(Change from April 2020 forecast)*	**4.42%** ---	Cost of debt assumes Powerlink's prevailing rate for 2020/21 remains unchanged for 2023-37 regulatory period
WACC *(Change from April 2020 forecast)*	**4.49%** *(0.02%)*	
Gamma	0.585	As per AER's 2018 binding Rate of Return Instrument

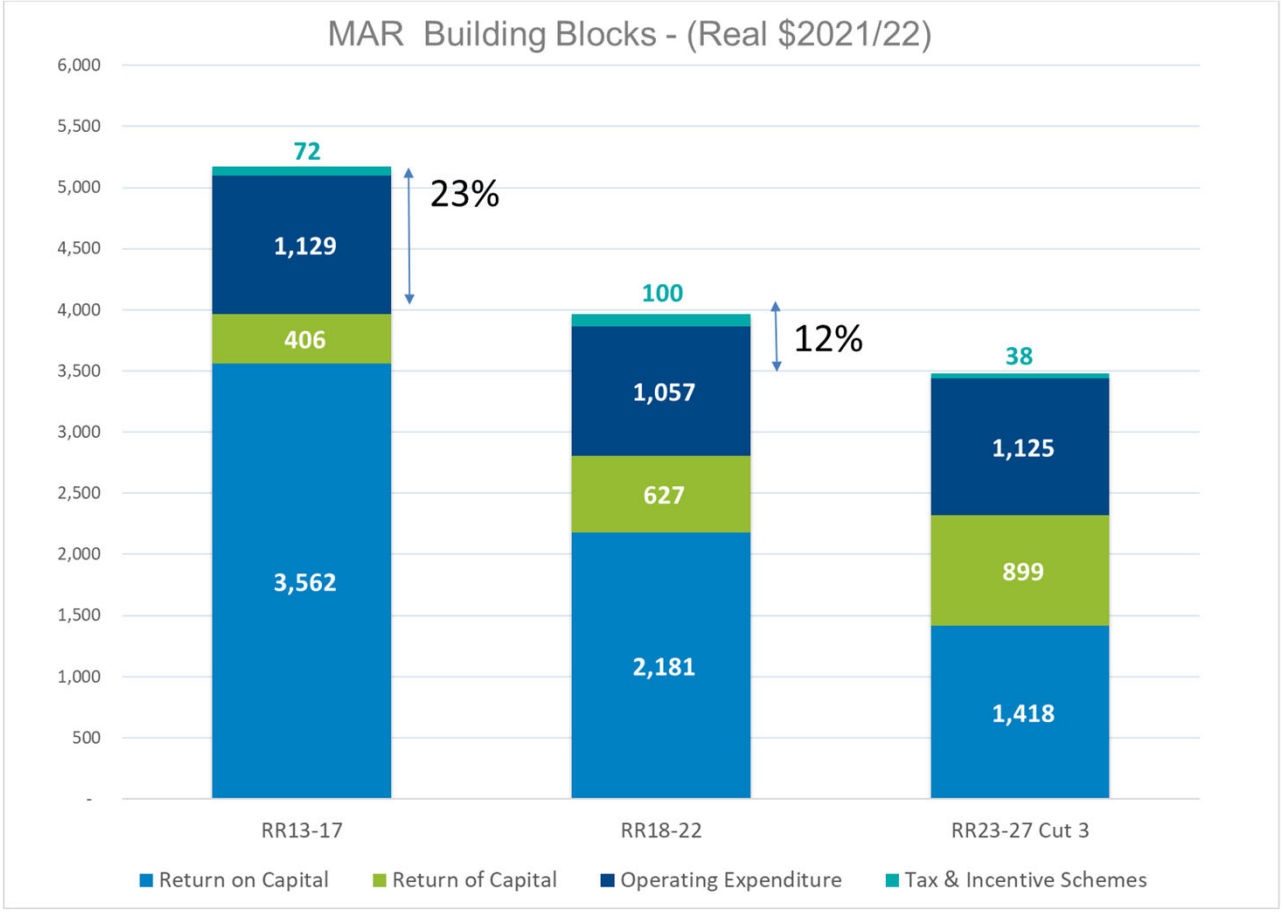
Cut 3 forecast – MAR

- Average MAR forecasts are based on Cut 3 assumptions with trimmed mean inflation.
- MAR for the 2023-27 regulatory period will reduce by ~12% from the current regulatory period primarily due to the lower rate of return.



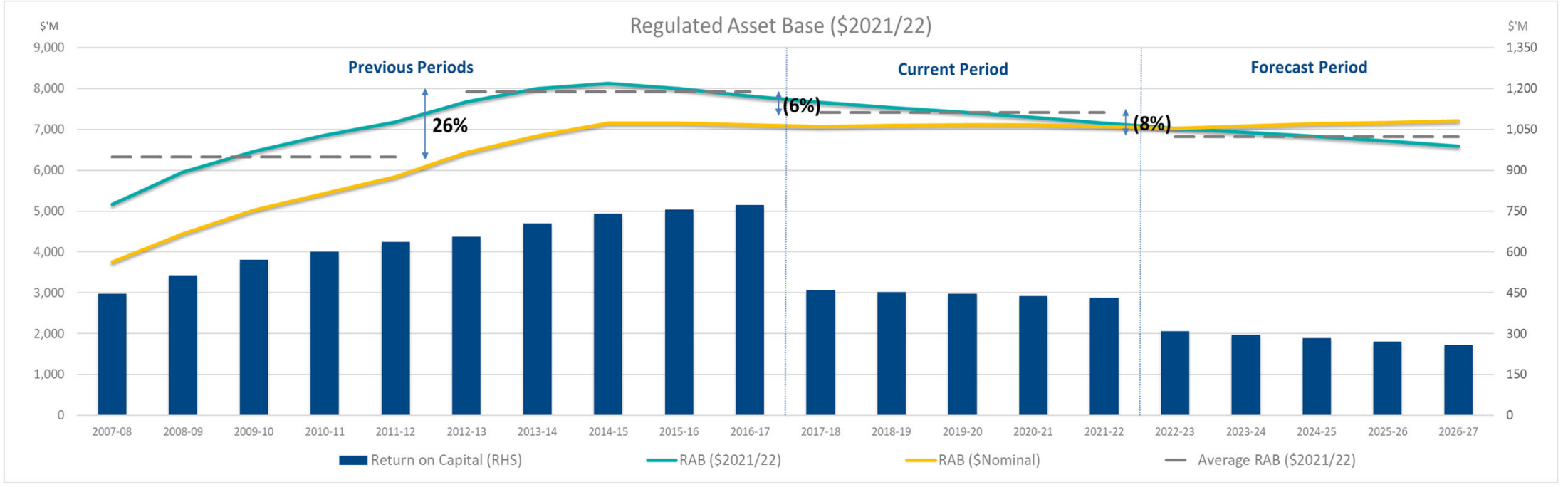
Cut 3 forecast – MAR Building Blocks

- The reduction in MAR is primarily related to a reduction in the return on capital building block (RAB*Rate of Return). This is forecast to be $763m or 35% lower than the current regulatory period.



Cut 3 forecast – RAB

- The RAB is forecast to continue to decline in real terms in the current regulatory period and through the 2023-27 regulatory period.



Capital expenditure

Greg Hesse

Key observations – capex

Topic	Key observations
Current regulatory period	• Current period allowance has been reduced by around 1.7% due to low inflation, compared to outlook in December 2019. • Current period actuals expected to land ~1-2% below the AER allowance, a reduction of >35% from the previous period. • COVID-19 has impacted network capital project delivery in 2019/20 (~ $-12 million) and is expected to also affect 2020/21 (~ $-7 million). We are targeting to catch-up some of this shortfall during 2021/22. • Our proposed office refit (~$16 million) has been deferred to next regulatory period. We will not seek to collect the equivalent revenue for this project within the 2018-22 period.
2023-27 regulatory period	• Next period forecast is ~18% above the current period AER allowance. This is driven primarily by reinvestment in transmission lines and secondary systems. • Reinvestment expenditure remains the main capex category. • The process of refining the inputs to the Repex Model to reflect Powerlink's Asset Management Planning is largely complete. Further updates may be made to reflect outcomes from the Asset Management Planning process.
Contribution to MAR	• Forecast capex contributes <5% to MAR within the 2023-27 regulatory period. Actual capex will contribute to MAR in future regulatory periods for the life of the assets.

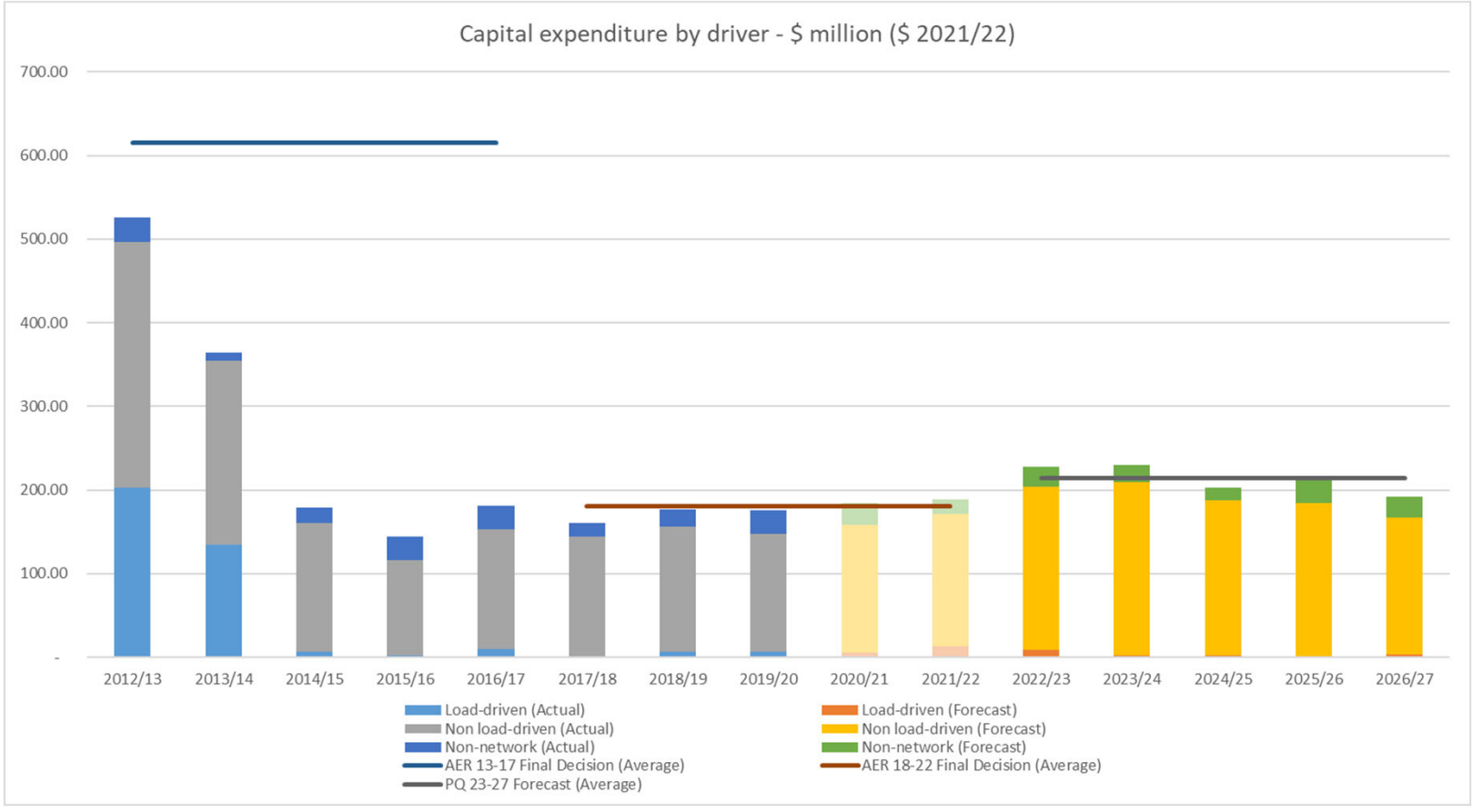
Key capex drivers in the 2023-27 regulatory period

- The main driver of our forecast increase in reinvestment capex is the increasing age of the fleet of steel lattice transmission towers.
- The significant growth in the length of the transmission network during the 1970s and early 1980s, as Queensland was interconnected from Townsville to Brisbane, means increasing numbers of structures are now starting to exhibit higher levels of corrosion.
- Progressive obsolescence and un-supportability of digital technologies in our telecommunications and secondary systems are also significant drivers of reinvestment expenditure.
- System services[1] is a newly identified category of capex driver. This is a rapidly evolving field of power system analysis and additional investment needs may still be identified.
- Our office refit project, originally proposed to be completed during the 2018-22 regulatory period, has been deferred to the 2023-27 regulatory period.

[1] Investments to meet overall power system performance standards and support the secure operation of the power system. This includes the provision of system strength services and inertia services.

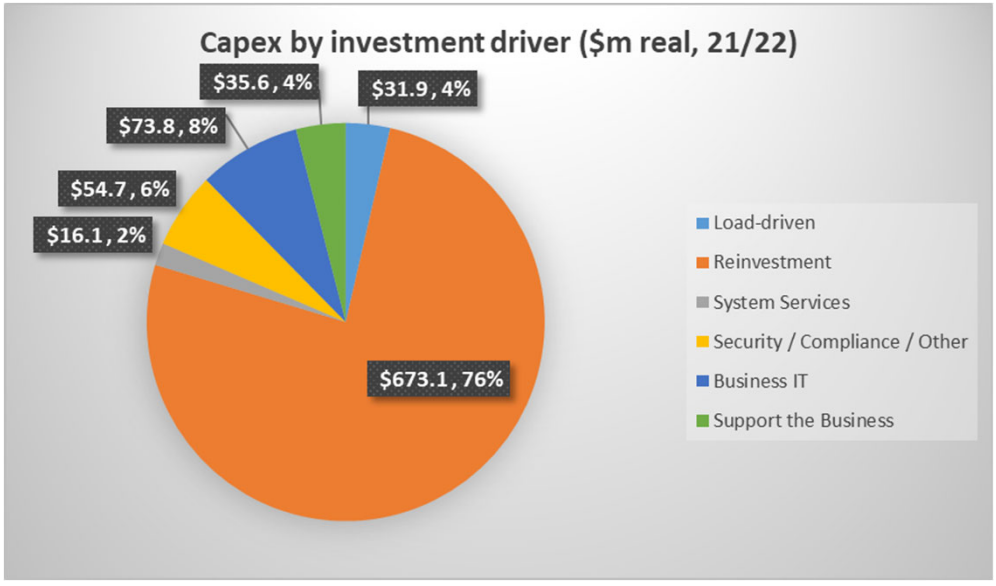
Total capex

- Prior to 2014/15 some significant reinvestments were made that also provided capacity to meet the then forecast increases in demand. Since 2014/15 this reinvestment has moderated to reflect the changed nature of reinvestment solutions in a low/no load growth environment, including retiring assets without any replacement.

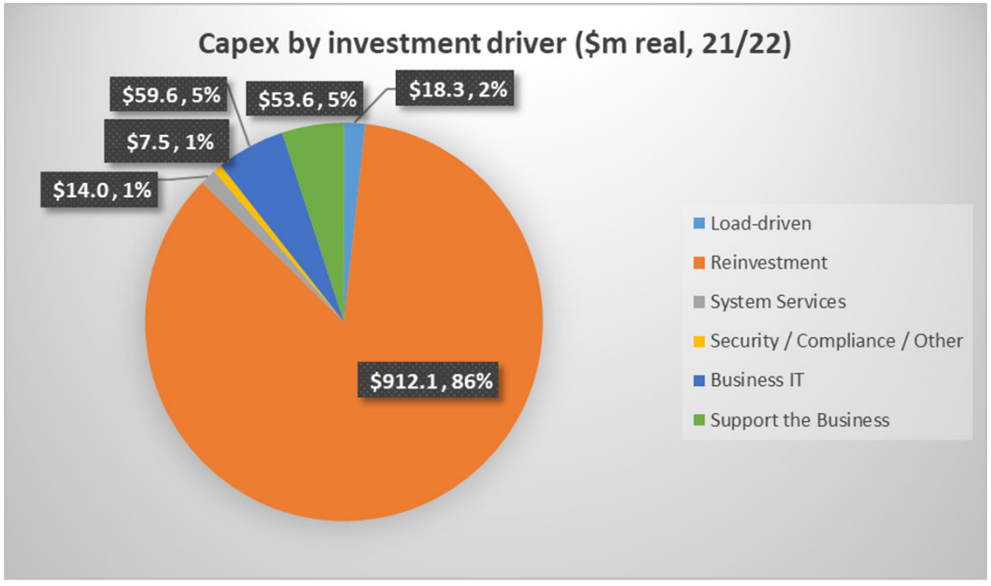


Forecast capex by category

Current period actuals and forecast – 2018-22



Next period forecast – 2023-27



- The increase in capex in the 2023-27 regulatory period is primarily in the network reinvestment category and reflects that Powerlink is on the leading edge of reinvestment in its fleet of transmission towers.

Potential contingent projects

Project name	Stream	Driver	Description of potential project works	Indicative timing	Indicative cost ($m)
Galilee Basin coal mining area	1	New coal mining load of up to 400MW.	Install a third 275kV circuit between Broadsound-Lilyvale and capacitor banks at Lilyvale.	No specific timing – load driven	127
CQ-NQ grid section	1	Combination of above loads of up to 580MW.	String second side of the Stanwell-Broadsound 275kV transmission line.	No specific timing – load driven	~55 (based on 18-22 Revenue Proposal)
QNI Medium (ISP)	2	Increased renewable generation in NSW and Darling Downs REZs	Single 500KV circuit between Western Downs-Wollar with 330kV connections to Armidale and Dumaresq.	2026 – 2028	~580 (Qld component only)
Far North Queensland REZ (ISP)	2	Increased wind generation in Far North Queensland.	Rebuild Ross-Chalumin 275kV double circuit transmission line to higher capacity, plus add single circuit Ross-Chalumbin line. Uprate the Strathmore-Ross circuit.	2026 – 2036	405-695
Gladstone Reinforcement (ISP)	2	Retirement of Gladstone Power Station. Renewable growth in North Queensland.	Install a 275kV double circuit transmission line between Calvale-Larcom Creek, plus a third transformer at Calliope River. Rebuild the Bouldercombe-Calliope River 275kV single circuit to a higher capacity.	2025 – 2035	175-325
CQ-SQ Reinforcement (ISP)	2	Increase in renewable generation in Central and/or North Queensland.	Install a 275kV double circuit transmission line between Calvale to Wandoan South.	2024 – 2036	226-420
Calliope River to South Pine Reinvestment	3*	Asset condition.	Progressive refit (life extension) of the existing 275kV single circuit lines between Gladstone and Brisbane or rebuild existing single circuits as double circuit.	2024 - 2029	180 - 220
Bouldercombe to Calliope River Reinvestment	3*	Asset condition.	Refit (life extension) of the existing Bouldercombe to Calliope River 275kV single circuit lines.	2026	~35
Ross to Chalumbin Reinvestment	3*	Asset condition.	Refit (life extension) of the existing Ross to Chalumbin 275kV double circuit line.	2026	85 - 165
Bouldercombe to Nebo Reinvestment	3*	Asset condition.	Refit (life extension) of the existing Bouldercombe to Nebo 275kV single circuit line.	2028	80

Stream 1 = load/generation driven, Stream 2 = ISP, Stream 3 = contingent reinvestments.

- *We are continuing to engage with the AER with respect to Stream 3 projects.*
- *Estimated contingent project threshold is currently ~$35m (5% of first year MAR).*

Notes:

- Current timing of and indicative cost for ISP-related projects is based on AEMO's Draft ISP. This will be updated post release of the Final ISP.

Proposed contingent reinvestment projects

- Contingent projects are one of a limited number of “re-openers” of a Revenue Determination. The bounds of specific contingent projects are determined by the AER in advance, as part of the Revenue Determination process.

- Historically, contingent projects have fallen into one of two main categories:
  - New or augmented interconnectors or other significant developments based on the market benefits to be delivered under certain market development scenarios; and / or
  - Specific spot events, often new load commitments, that trigger reliability corrective actions.

- Overall, contingent projects typically manage risk and uncertainty related to network augmentation – the need for **more** network.

- Powerlink is looking to use the contingent project framework to assist in managing risk and uncertainty related to network reinvestment – the need for **different** network.

- We have previously engaged with customers through our RPRG who are supportive of this initiative.

- We are continuing to engage with the AER to explore this.

Operating expenditure

Matthew Myers

Key observations – opex

Topic	Key points
Current regulatory period	• Powerlink's goal is to operate within the AER's total allowance over the regulatory period. • The AEMC Levy is increasing at a higher rate than inflation and insurance costs are increasing due to a hardening market. Both of these increases are occurring within this period and forecast to continue into the next period.

2023-27 regulatory period	• Opex is forecast to be $68.5m or 6.5% higher than the AER's 2018-22 regulatory period allowance. This is primarily driven by:
	  • Insurance (up $19.1m / 45%).
	  • AEMC Levy (up $8.5m / 38%).
	  • Potential cyber security step change of ~$11.8m.
	  • We may also include a step change for costs associated with the AER's Transmission Ring Fencing review. The quantum of these costs will depend on the extent of the changes proposed and we may consider alternative methods to treat these costs.
	• We will use 2018/19 as our opex base year – refer to the background slides.
	• We have decided not to progress with a number of step changes from the April 2020 forecast – refer to the background slides for details.

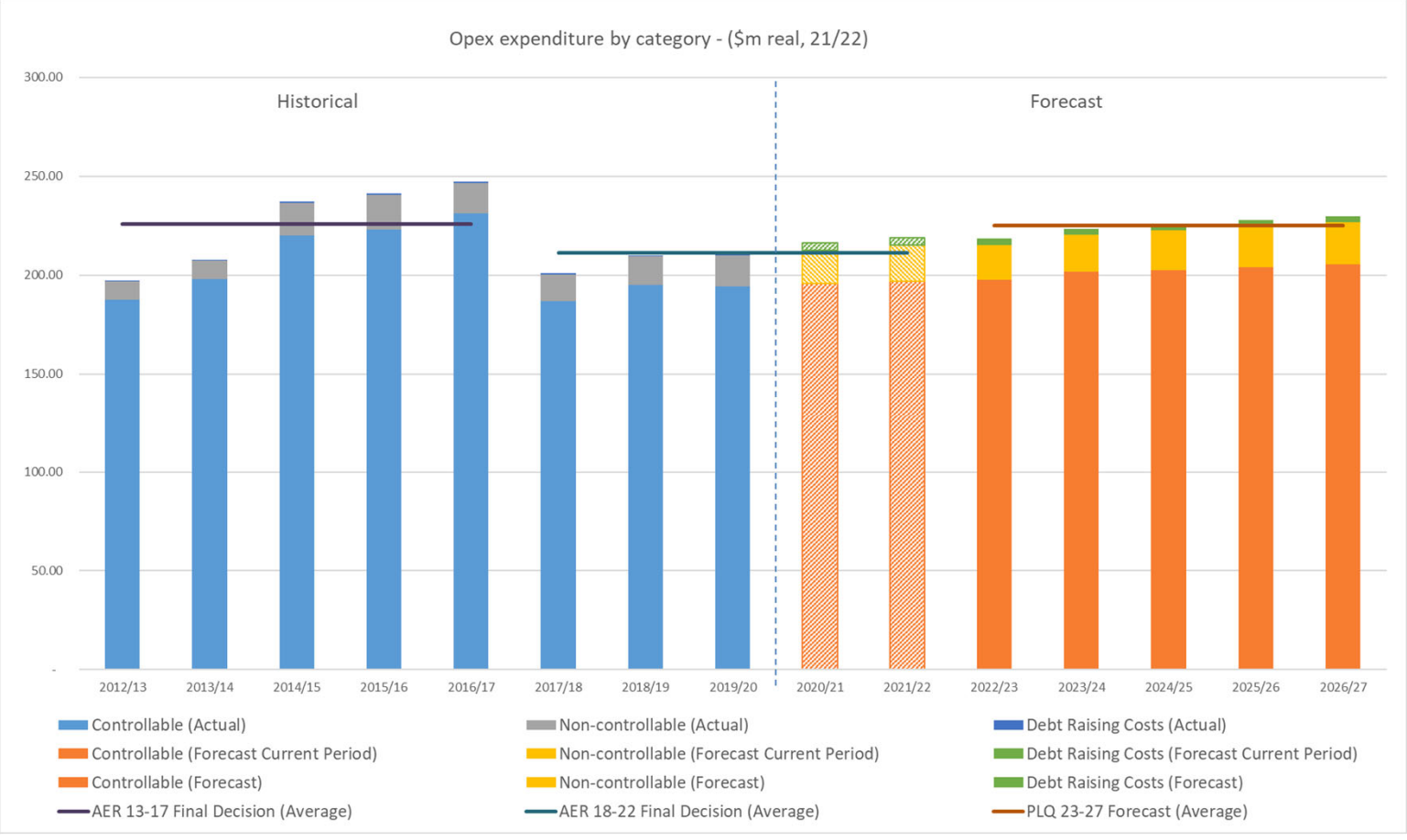
Forecast trend	• The trend applied to opex is based on the AER's current rate of change calculation (Output growth + Price growth – Productivity). • The rate of change forecast for Cut 3 is 1.06%. This is higher than the April 2020 forecast rate of change, primarily due to updated Wage Price Index (WPI) figures which now reflect an average of BIS Oxford Economics and Deloitte Access Economics WPI forecasts. • Details of the rate of change forecast elements are included in the background slides.
Contribution to MAR	• Opex contributes ~30% to MAR within the next regulatory period.

Key opex drivers in the 2023-27 regulatory period

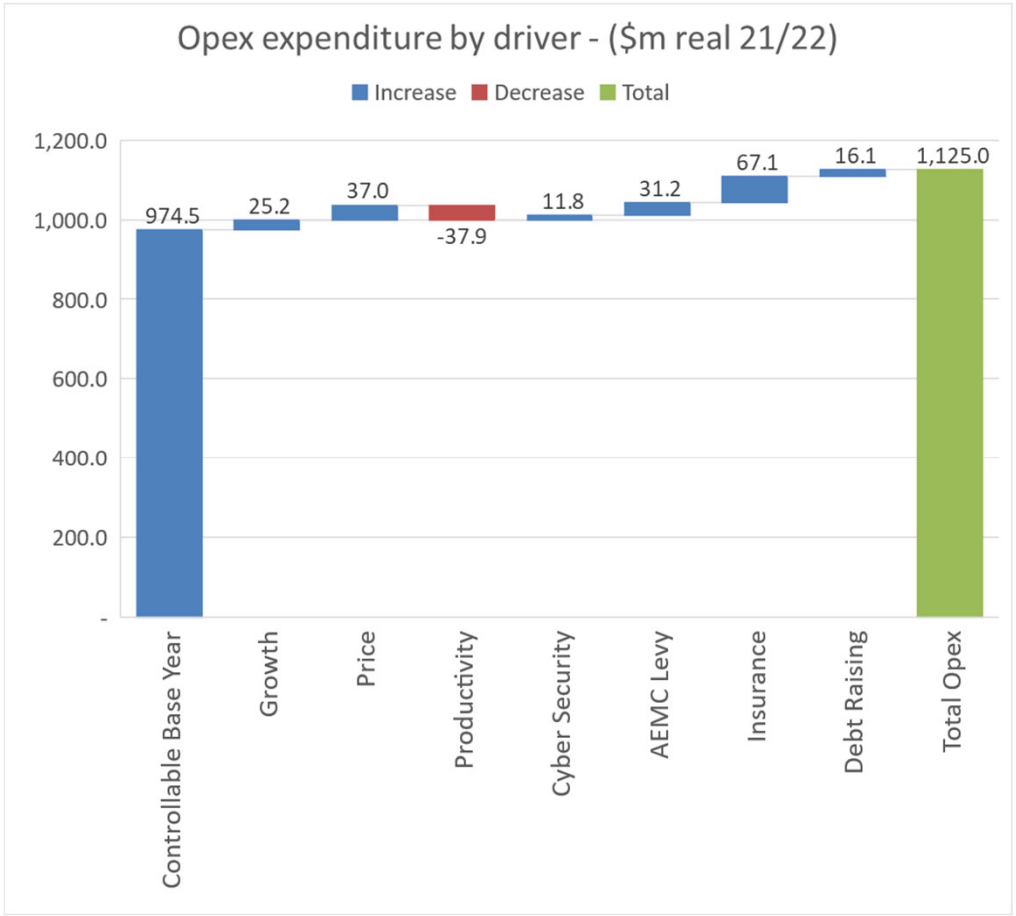
- ~60-65% of our opex relates to operations, maintenance and refurbishment of the network. These core activities will continue to be the most significant area of our operating expenditure in 2023-27.
- The rapid increase of connection of inverter based resources means operation and maintenance of the network is becoming more complex, and this may drive increased opex costs.
- We also anticipate an increase in decommissioning activity in the 2023-27 regulatory period, given our ageing network. We review our assets, as well as our network configuration with changing load and demand patterns, and decommission assets where it is prudent and efficient to do so.
- Insurance costs are forecast to increase significantly for the remainder of the current period and are forecast to increase by 45% for the 2023-27 regulatory period compared to the allowance for 2018-22.
- The AEMC Levy has increased over the 2018-22 regulatory period, resulting in costs exceeding the allowance by 27%, and is forecast to continue to increase in 2023-27. We are still investigating alternative treatment for this cost.
- Cyber security is driving an increase of ~$2.4m p.a, which we have identified as a potential step change. This recognises a significant increase required in opex to maintain appropriate levels of cyber security readiness. There may be a formal obligation in the future tied to this.

Total opex

- Total opex within the 2018-22 regulatory period is expected to be in line with the AER allowance.
- The forecast opex increase in 2023-27 is due to step change and rate of change impacts for controllable expenditure and increases in insurance and the AEMC Levy costs for non-controllable expenditure.



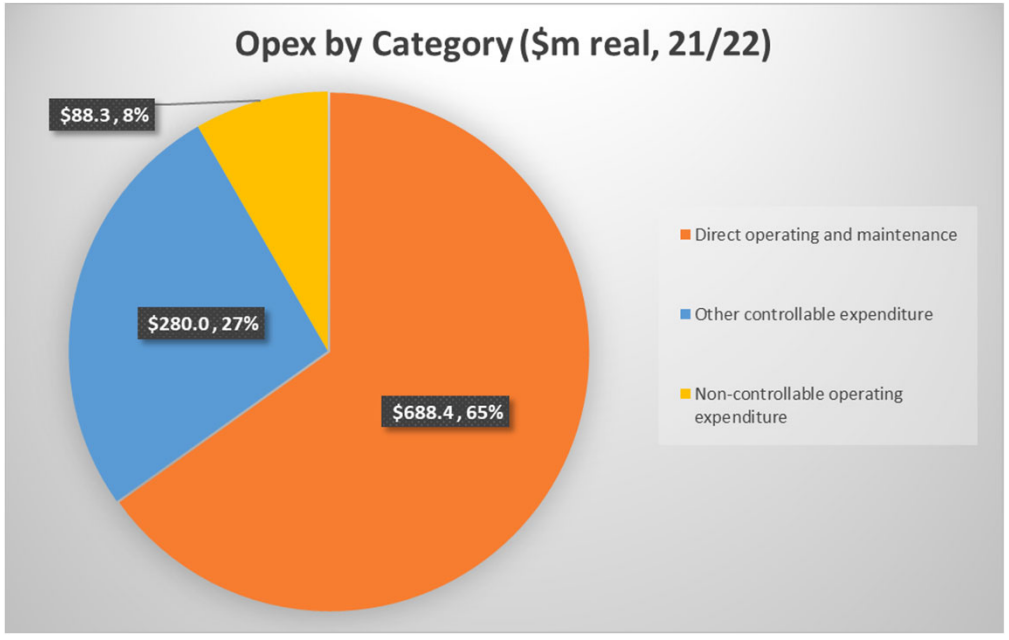
Opex – waterfall graph



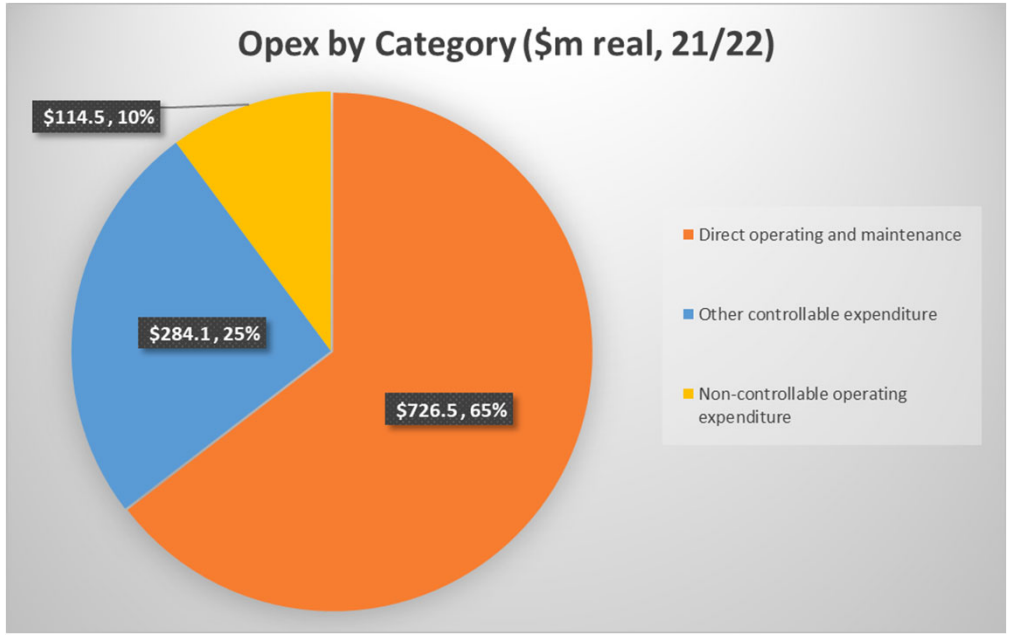
- **Controllable base year** – reflects controllable opex for the 2018/19 year.
- **Trend** – 1.06% rate of change reflecting output, price (labour and materials) and productivity growth. Contributes ~$4.86m p.a. increase.
- **Cyber security step changes** – increase in opex not captured in base opex or the rate of change. Currently contributes ~$2.4m p.a. increase.
- **Non-controllable opex** – items not included by Powerlink in the controllable base year. We have taken a zero-based approach to forecasting these items and they are added to the base-step-trend. Significant increase in insurance (~48%) compared to the current period.

July 2020 opex forecast – by category

Current period actuals and forecast – 2018-22



Next period forecast – 2023-27



- The increase in direct operating and maintenance expenditure is driven by the proposed cyber security step change, and the 1.06% rate of change applied to opex.
- The increase in non-controllable opex is driven by an increase in insurance and AEMC Levy costs.

Incentive schemes

Dana Boxall and Greg Hesse

Incentive schemes – EBSS, CESS

Efficiency Benefit Sharing Scheme (EBSS)

- We have calculated the estimated carryover amounts for the 2018-22 regulatory period as a revenue increment of $6.1m.
- Our April 2020 forecast included an EBSS revenue adjustment of -$23m.
- The change between April 2020 and now is primarily due to a non-recurrent efficiency adjustment for the 500kV write-off costs in 2014-15 that was removed from the 2014-15 base opex amount, as well as a change in the opex base year.
- We are engaging with the AER on the impact of inflation on the EBSS (refer to previous slide on inflation).

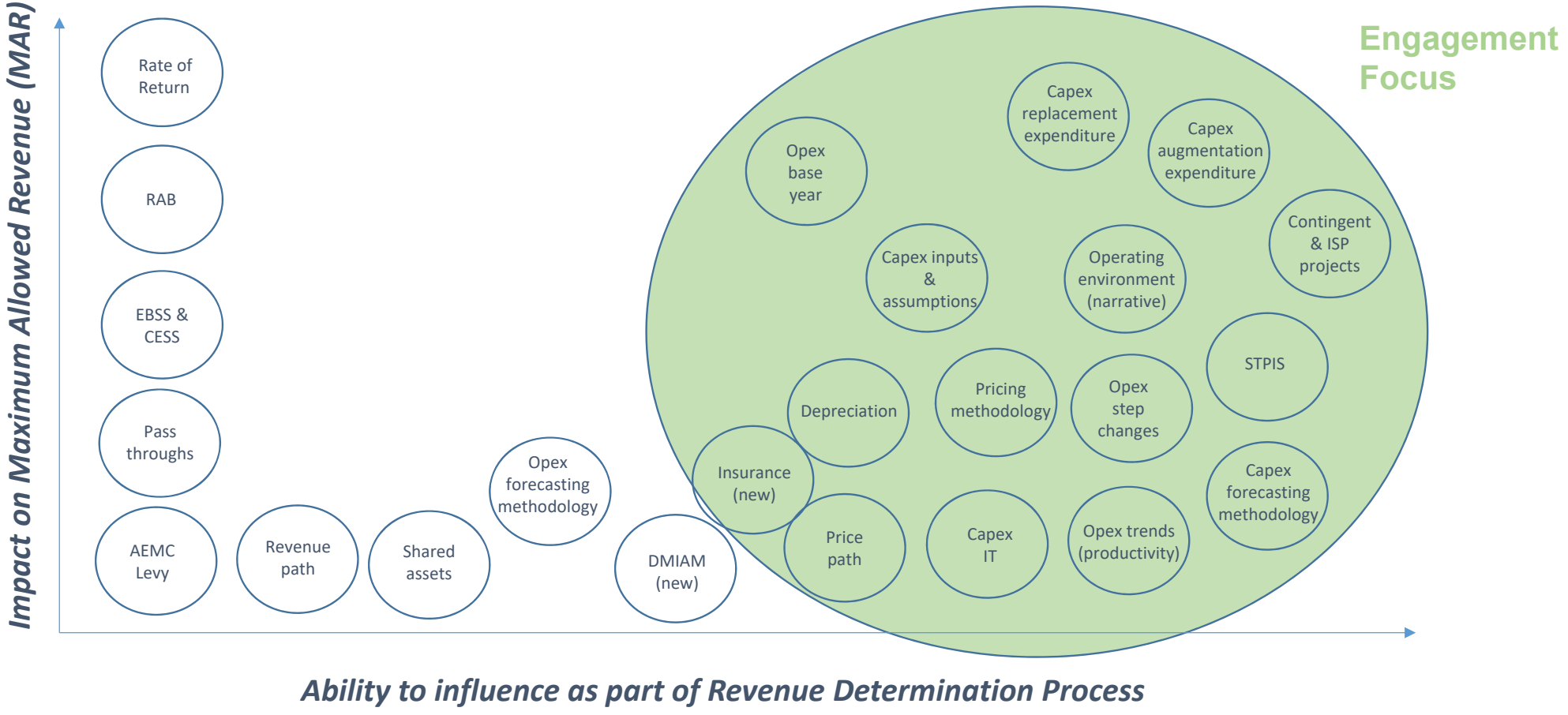
Capital Expenditure Sharing Scheme (CESS)

- We have calculated the estimated carryover amounts for the 2018-22 regulatory period as a revenue adjustment of $4.9m.
- Our April 2020 forecast included a CESS revenue adjustment of -$2m.
- The change between April 2020 and now is due to an anticipated lower capex forecast for the current regulatory period.

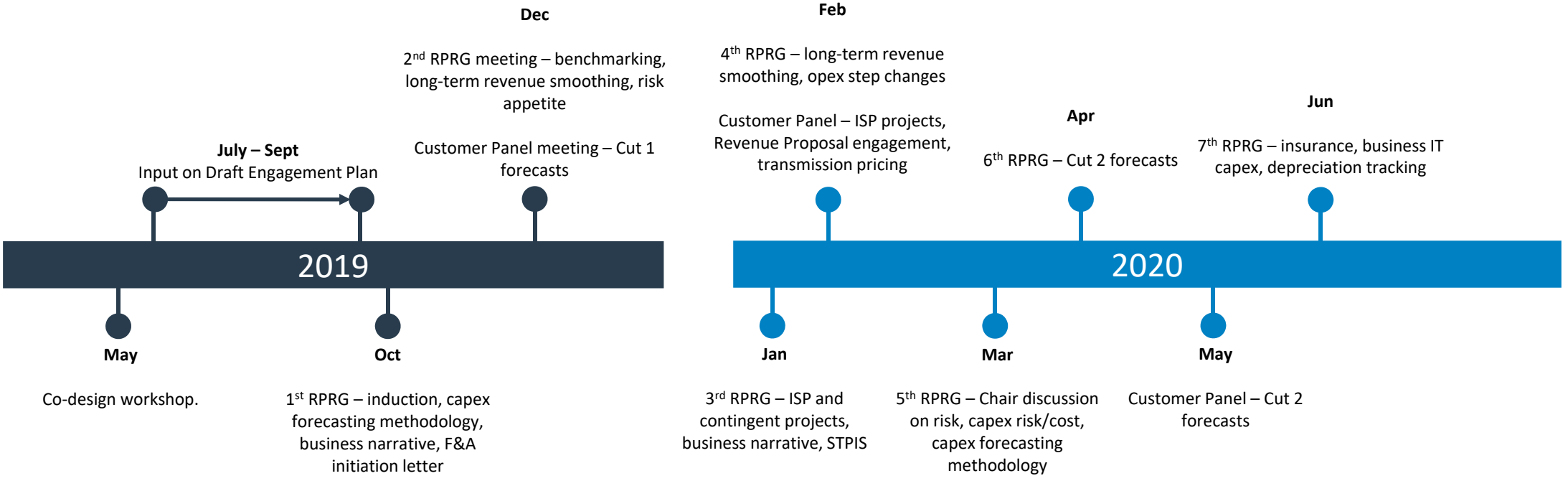
Customer engagement

Gerard Reilly

Refresher: engagement scope



Engagement to date



- Customer Panel (CP) and RPRG meeting presentations, minutes and actions are available here.
- The background section of this presentation provides an overview of feedback received to date and action taken by Powerlink.

Key engagement techniques August-December

- **Ongoing CP and RPRG meetings** – 1 x CP meeting and 4 x RPRG meetings August-December.
- **Transmission Network Forum** – our annual Transmission Network Forum in September.
- **Deep dives** – we will host deep dive workshops focused on detailed exploration of a single topic related to the Revenue Proposal, for at least a 2 hour session, that will be open to customers/stakeholders beyond the CP/RPRG.
- **Webinar/s** – at least one webinar will be held providing a overview of the key elements of the Draft Revenue Proposal. More will be offered if there is significant interest from customers.
- **One-on-one briefings** – we will proactively offer these to direct connect customers, and to other relevant customers/stakeholders who have made a previous submission to recent Queensland revenue determination processes.
- **Leverage existing opportunities** – we will contact our Government Owned Corporation (GOC) counterparts to leverage existing engagement opportunities with their customer groups, where timely and appropriate. We also request CP members identify opportunities for us to talk directly with their members, if interested.

Key engagement topics August-December

- We have identified four specific topics for deeper engagement August-December (beyond broader engagement opportunities we will provide for customers and stakeholders about our PPFP / draft Revenue Proposal forecasts).

    1. **Contingent reinvestment projects** – RPRG discussion
    2. **Productivity** – RPRG discussion
    3. **Cyber security** – deep dive workshop
    4. **Insurance** – deep dive workshop

- We welcome feedback / suggestions on these and any other topics.

Draft engagement activities July-December

Proposed timing	Activity	Techniques used / description
31 July	Release Preliminary Positions and Forecasts Paper (PPFP)	• Distribute via our stakeholder database (~150+ customers/stakeholders). • Raise awareness through social media channels and CP member networks. • Offer one-on-one briefings. • Focus of the July CP meeting.
End Aug	RPRG meeting	• RPRG meeting – topics TBC. Meeting date is not yet set.
4 Sept	Transmission Network Forum	• Virtual forum - invitations will be sent to our stakeholder database. • Will include a dedicated breakout session on the Revenue Proposal. • Focus of discussion will be on how our network operating environment is driving elements of our capex and opex forecasts.
11 Sept	Deep Dive Workshop – proposed topic = cyber security	• 2 hour customer and stakeholder workshop focused on cyber security. • We will invite customers and stakeholders from our stakeholder database to participate.
24 Sept	RPRG meeting	• 3 hour RPRG meeting – focus will be on the Draft Revenue Proposal forecasts.
30 Sept – 30 Oct	Feedback period on Draft Revenue Proposal	• Distribute via our stakeholder database and invite feedback by 30 October. • Raise awareness through social media channels and Customer Panel member networks. • Offer one-on-one briefings. • Host at least 1 webinar for interested stakeholders (more if there is significant interest). • Encourage regional stakeholder involvement and feedback.
Mid Oct	Deep Dive Workshop – proposed topic = insurance	• 2 hour customer and stakeholder workshop focused on insurance. • We will invite customers and stakeholders from our stakeholder database to participate.
30 Oct	RPRG meeting	• RPRG meeting – topics TBC. Meeting date not yet set.
26 Nov	Customer Panel meeting	• Final CP meeting before Revenue Proposal lodgement. We will provide an overview of feedback received on the Draft Revenue Proposal and our response to the feedback.
10 Dec	RPRG meeting	• 2 hour RPRG meeting – final discussion on any material changes prior to Revenue Proposal lodgement.

Background slides

Background information

Revenue Determination process

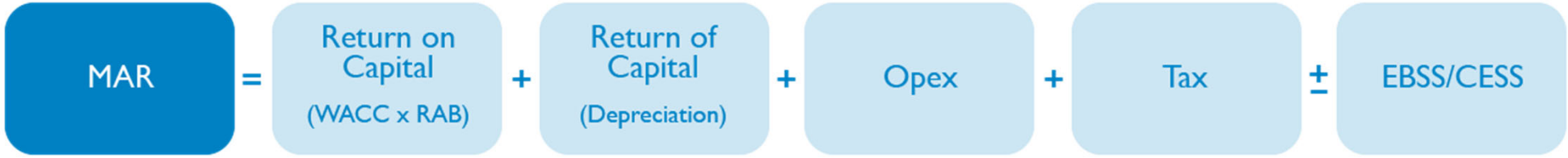
Revenue Determination significance

- The annual revenue amount which Powerlink collects for its prescribed (regulated) services is determined by the AER through a Revenue Determination process every five years.

- ~80% of Powerlink's revenue comes from prescribed (regulated) services. Majority of the remaining amount of revenue comes from non-regulated services.

- Our current regulatory period runs from 1 July 2017 to 30 June 2022. Next regulatory period is 1 July 2022 to 30 June 2027.

Revenue building blocks

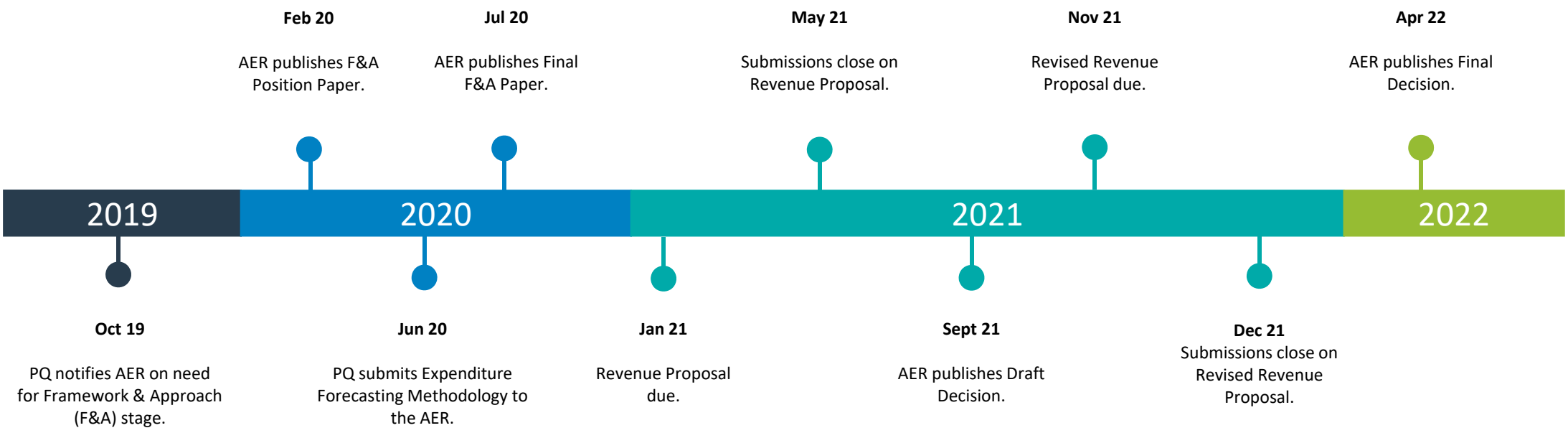


Return on Capital = a measure of return on investments (capex)
Return of Capital = annual regulatory depreciation allowance
Opex = annual operating and maintenance cost allowance
Tax = calculated effective company tax payable
EBSS = carryover amounts for the Efficiency Benefit Sharing Scheme from the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

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

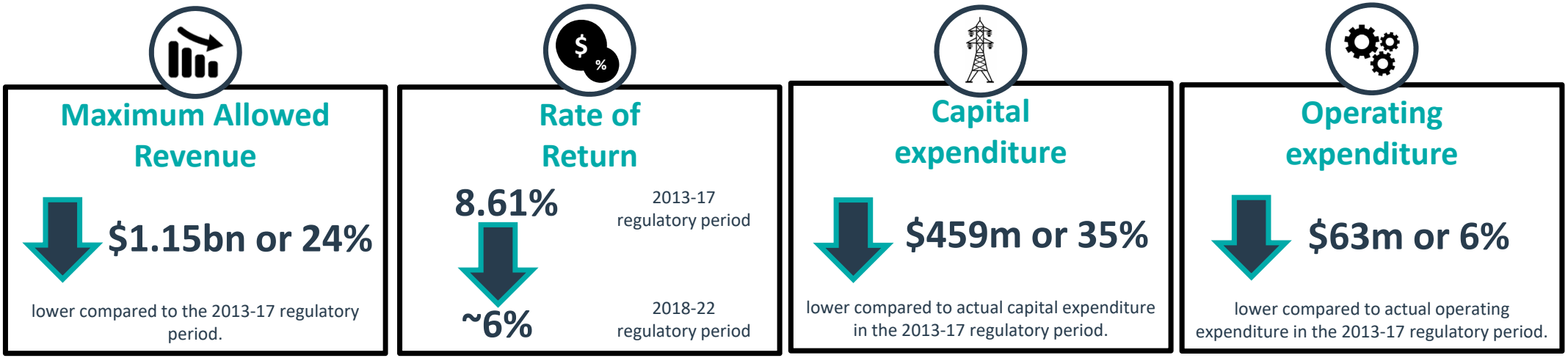
RAB - adjusts each year for new assets (capex), disposals, depreciation and CPI

Revenue Determination process regulatory milestones



Previous determination (2018-22 Final Decision)

- Powerlink's contribution to electricity bills reduced by a third from 1 July 2017.
- This was due to a range of factors, shown in the diagram below.
- Please note all figures are over the five year period 2017/18 – 2021/22 and are in $16/17.



Note:
- From 2018-22, the Rate of Return varies year-on-year.

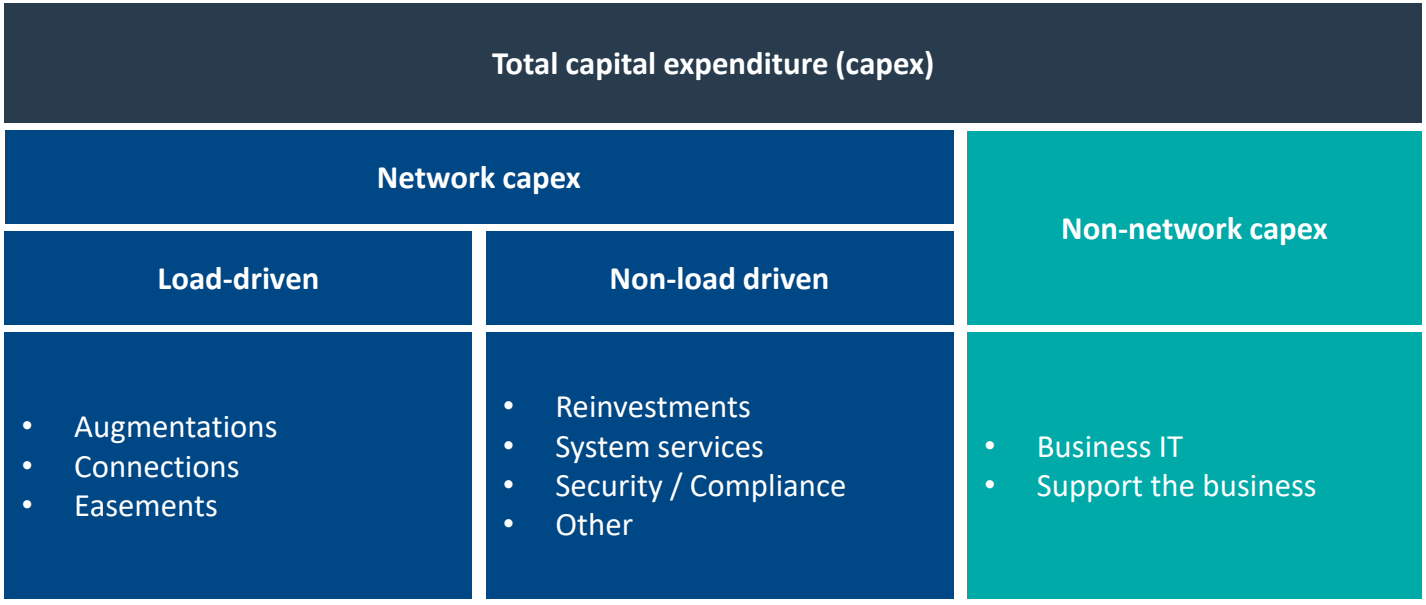
Background information

Capital expenditure (capex)

What is capex?

- Our capex consists of expenditure for new assets that increase capacity on, or capability of, the network, reinvestment in existing assets that are reaching the end of their service life, and other supporting assets such as business IT and vehicles.

- Our capex categories are shown in the diagram below.



How do we forecast capex?

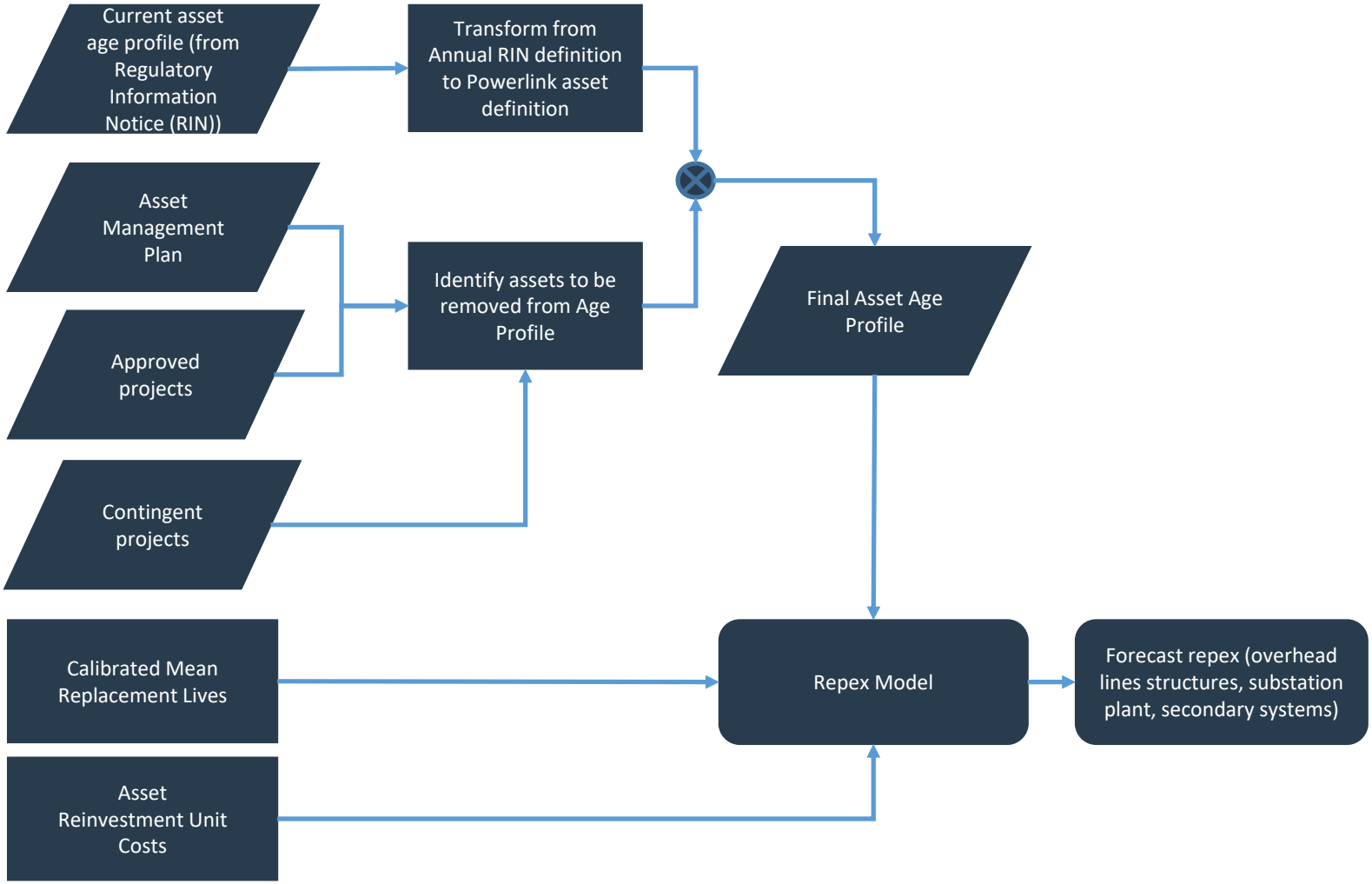
- We use a mix of top-down, bottom-up and trend analysis to forecast capex. This is briefly explained in the table below. Further details are available in our Expenditure Forecasting Methodology.

Approach	Application of approach	Method
Bottom-up	• Approved projects • Load-driven capital expenditure • Power transformer and Static VAr Compensator (SVC) reinvestment • Any major one-off expenditure needs • System services such as system strength and inertia • Significant network projects (indicative threshold of > $10 million project cost) • Contingent projects (note: not part of the ex-ante capital expenditure forecast. This may include ISP projects per Section 3.3.4)	• Analysis of need, preparation of project scope, estimate, planning statement and risk/cost assessment
Top-down	• Network assets including transmission lines, substations (excluding transformers which are bottom-up) and secondary systems and telecommunications	• Use of the AER's Replacement Expenditure (Repex) Model. Section 3.3.2 and Appendix C provides further detail
Trend analysis	• Security / compliance • Other network capital expenditure	• Use of a forecasting methodology similar to the base-step-trend approach proposed by the AER for forecasting operating expenditure

Use of the AER's Repex Model

- We use the Replacement Expenditure (Repex) Model to provide a top-down forecast of some elements of our capex portfolio.
- In developing the Repex Model for its last Revenue Proposal, Powerlink devoted considerable time and effort to ensure the input parameters properly reflected Powerlink's condition drivers and asset management practices.
- Specific areas of focus included:
    - **Asset population and age profile** – removing assets from the model which are unlikely to be required to be replaced when they reach their technical end-of-life.
    - **Historical asset replacement quantities** – removing replacement quantities that are not primarily condition based.
    - **Corrosion zone modelling** – segmenting the tower population into different zones, to allow for different replacement lives based on the rate of degradation observed in those zones.
- Powerlink also engaged Nuttall Consulting to independently review the top-down forecasting approach for the last Revenue Proposal. Nuttall found Powerlink's overall approach to calibrating the model to be suitable for forecasting, and in some instances superior to the normal application of the Repex Model.

Forecasting repex using the repex model



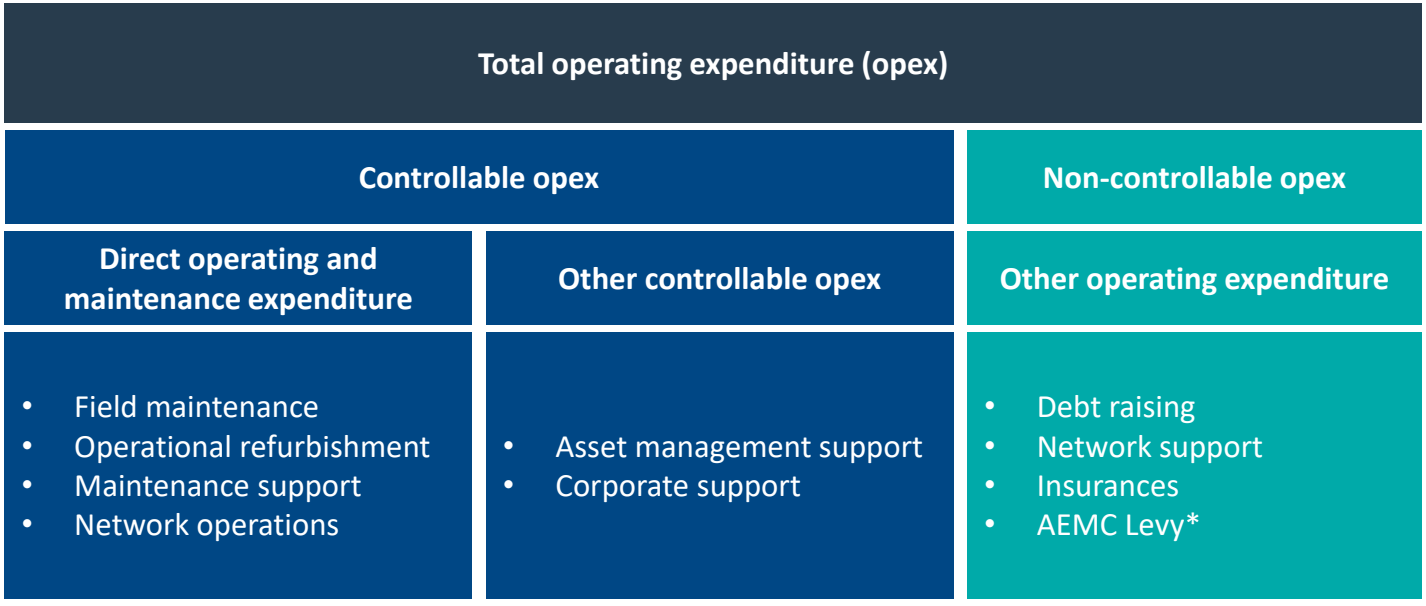
Background information

Operating expenditure (opex)

What is operating expenditure?

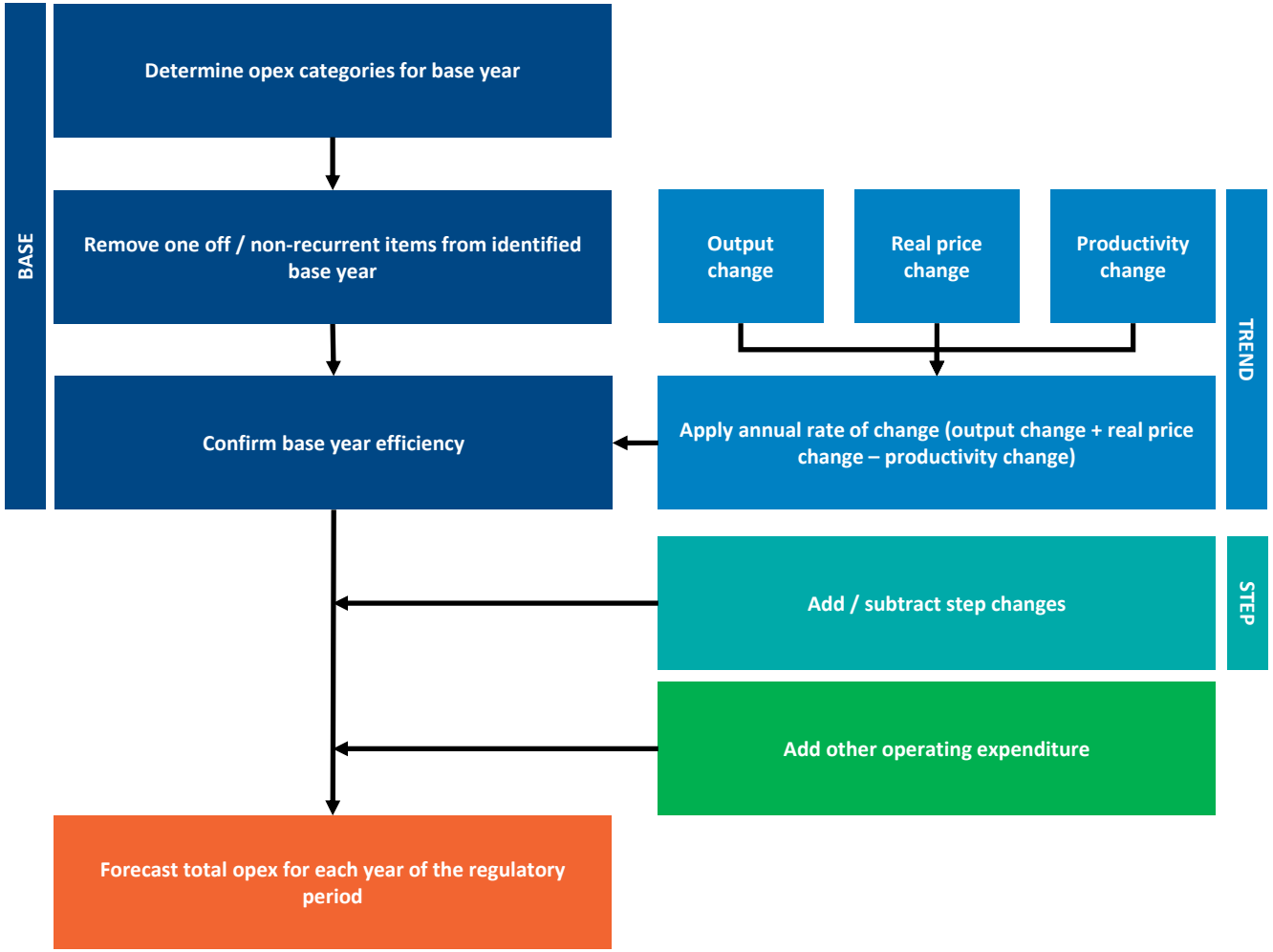
- Our opex enables the operation and maintenance of our network and other assets, as well as the business activities required to support those areas of work.

- Our opex categories are shown in the diagram below.



* We are considering alternative ways to treat the AEMC Levy.

How do we forecast opex?



- We forecast opex using the AER's base-step-trend approach.
- This is shown in the diagram opposite and explained in detail in our Expenditure Forecasting Methodology.

Opex base year

- We considered four different options for our opex base year – 2018/19, 2019/20, 2020/21 and the AER's allowance for 2019/20.
- We have decided to use 2018/19 (year 2) as our opex base year for the 2023-27 Revenue Proposal, for several reasons:
  - It is the lowest actual year of total opex, and closest actual result to the AER allowance.
  - It is reflective of a typical year of operations (i.e. no potential COVID-19 or other impacts).
  - It meets the AER's expectations of using a 'revealed cost' approach (i.e. based on actual expenditure in a base year).
  - We have audited accounts for this year.

Opex step changes

- 27 potential step changes were identified by the business.
- We reviewed these against a range of different criteria, including whether they had:
    - already been realised in the base year;
    - a low likelihood of material costs being incurred; or
    - no associated new legislative/regulatory obligation.
- This left 7 step changes, which we considered further. Of those, we are intending to proceed with 2 – cyber security and Transmission Ring Fencing.
- AEMO's National Transmission Planner (NTP) fee (as part of the Integrated System Plan (ISP) Rules) was also considered as a potential step change. Treatment of this cost has been confirmed to be outside the Revenue Determination process[1] and therefore it was not considered further.

[1] National Electricity Rules, Clause 6A.23.3(e)(6).

Opex step changes

- Items in grey in the list below are not being pursued further. The cost of the five step changes we will not pursue below is ~$585k p.a., if realised.

Name	Est. cost p.a. ($21/22, real)	Description
Transmission Ring Fencing	Unknown	The AER review of the TNSP ring-fencing guideline may result in additional opex costs. The quantum of these costs will depend on the extent of the changes proposed.
Cyber security	$2.4m - $4m (depending on cyber security maturity level)	This step change recognises a significant increase required in operating expenditure to maintain different levels of cyber security readiness under the Australian Energy Sector Cyber Security Framework (AESCSF). There may be a formal obligation in the future tied to this.
Nature Conservation Act (NCA) fees	$1m (2023/24) $70k thereafter	Potential new fees for co-location of assets within national parks. This obligation is unlikely to arise prior to lodgement of the Revenue Proposal, therefore we will not pursue this in the Revenue Proposal.
Generator Technical Performance Standards (GTPS)	$63k.	Increased costs, above those already incurred in the 2018-22 regulatory period, related to provision of operational advice on system-related matters due to the *National Electricity Amendment (Managing Power System Fault Levels) Rule 2017 No. 10.* This was originally forecast to be a larger impact (~$250k p.a.), however further analysis revealed the majority of this cost has been realised in our base year.
IT licences movement to cloud (potential capex/opex trade-off)	Minimal – not estimated.	This capex/opex trade off relates to the changing environment of IT services with a greater number of applications being hosted off site increasing licencing and support costs, however reducing the requirement to procure hardware and support. We have determined the majority of this transition cost has been realised, it was not as significant as previously anticipated and future costs can be absorbed.
Corporations Law Whistle Blower Protections	$150k.	Additional administrative and compliance costs related to new whistleblower legislation. Determined not to pursue as it is not material.
Modern Slavery Act	$130k.	New administrative compliance costs related to the Modern Slavery Act 2018. Determined not to pursue as it is not material.

Opex rate of change (trend)

Trend factor	Key points	Current forecast trend
Output growth	• Factors are – energy served, ratcheted maximum demand, number of customers and circuit length. • The source of these factors is typically from Economic Benchmarking Regulatory Information Notice (RIN) data, AEMO's Electricity Statement of Opportunities (ESOO) and Integrated System Plan (ISP) along with Powerlink's internal information.	**0.69%**
Price growth	• Two factors – materials price change and labour price change. • Materials price change – currently based on a trimmed mean inflation estimate of 2.25%. • Labour price change – reflects an average of Wage Price Index (WPI) forecasts from BIS Oxford Economics and Deloitte Access Economics (DAE).	**0.50%**
Productivity	• Powerlink has calculated productivity consistent with the AER's approach for determining productivity. It is a preliminary view based on November 2019 opex benchmarking data and calculates an average trend for TNSPs as an industry from 2007-2018.	**0.14%**

Average rate of change over 2023-27 regulatory period
(0.69% + 0.50% – 0.14%) = 1.06%

Background information

Customer engagement

Our engagement goal

To undertake engagement to deliver a Revenue Proposal that is capable of acceptance by our customers, the Australian Energy Regulator and Powerlink.

Co-Designed Approach

- Powerlink's engagement approach was developed through a co-design process with our customers and stakeholders.
- Customers, advocates and stakeholders collaborated with members of Powerlink's Board, Executive and Senior Leadership Team at a co-design workshop in May 2019 to shape our:
    - Overarching engagement approach
    - Engagement scope
    - Engagement techniques
    - Engagement sequencing
    - Communications to support engagement
    - Engagement evaluation.

To view the complete Engagement Plan click here.

Engagement scope against IAP2 Spectrum

Level of IAP2 Spectrum	Aspect of Revenue Determination Process
Empower *To place the final decision-making in the hands of customers and stakeholders*	
Collaboration *To partner with customers to formulate alternatives and incorporate their advice into final decisions to the maximum extent possible*	Engagement approach and evaluation (Co-design) Contingent & ISP projects Operating environment (Business Narrative)
Involve *To work directly with customers and stakeholders to ensure their concerns and aspirations are directly reflected in the alternatives developed*	Capex – Augmentation expenditure, replacement expenditure, forecasting methodology Opex – Efficient base year, step changes – cyber security and insurance Service Target Performance Incentive Scheme (STPIS) Depreciation
Consult *To obtain feedback on alternatives and draft proposals*	Capex – Key inputs and assumptions, Information Technology (IT) Opex – Forecasting methodology, trends (productivity) Price path Revenue path Pricing methodology AEMC Levy
Inform *To provide balanced information to keep customers and stakeholders informed*	Rate of return Efficiency Benefit Sharing Scheme (EBSS) and Capital Expenditure Sharing Scheme (CESS) Regulated asset base Shared assets Pass throughs

Customer Panel & RPRG

- Powerlink's Customer Panel plays a primary role in providing input on a wide range of business activities to improve decision making. They also play a crucial in influencing the development of our Revenue Proposal.
- Following feedback from customers, Powerlink formed the Revenue Proposal Reference Group (RPRG), which comprises five members of Powerlink's wider Customer Panel.
- The purpose of the RPRG is to enable more intensive engagement on key aspects of the Revenue Proposal. They provide regular updates to the Customer Panel.

	Customer Panel	Revenue Proposal Reference Group (RPRG)
Membership	12 external representatives 5 Powerlink representatives	5 members of Customer Panel General Manager Network Regulation General Manager Communications Manager Revenue Reset
Invited stakeholders/observers	AER Consumer Challenge Panel*, AER staff*	AER Consumer Challenge Panel, AER staff, other Customer Panel members
Meeting frequency & duration	Three hour meeting three to four times a year	Monthly meetings of two to three hours duration

**These invited stakeholders attend Customer Panel meetings only for discussions associated with the Revenue Determination*

Customer feedback received and action taken to date

Topic	Feedback received	What we've done
General		
Business narrative	• First draft did not reference impacts of climate change. • Need to clarify who is the target audience for the narrative. • Explain how factors will impact Revenue Proposal and customers • Customer section needs to focus on more than just affordability, also how customers will be empowered in their energy use.	• Multiple versions were circulated to RPRG and Customer Panel with the majority of feedback incorporated into current Business Narrative (April 2020).
Risk appetite	• Customers asked for insight into risk appetite and approach of Powerlink's Board.	• Powerlink's Chair Kathy Hirschfeld presented at the March RPRG meeting outlining risk profile, risk management policies and controls.
COVID-19 impacts	• Customers asked about impacts of COVID-19 on Revenue Determination timeframes and ability to accurately forecast expenditure. • Customer support to stick with existing timeline for Revenue Determination. • How is Powerlink planning on continued engagement with ability to bring people together impacted by COVID-19.	• We have decided to stick with existing Revenue Determination timeline. • At this stage we believe COVID-19 impacts on capital or operating expenditure forecasts can be managed through the normal Revenue Determination process. We have committed to update customers if this position changes prior to Revenue Proposal being lodged in January 2021. • Engagement approach will continue as planned with face-to-face meetings and forums moving to 'virtual' meetings.

Feedback received and action taken to date

Topic	Feedback received	What we've done
Financials		
Proposed revenue smoothing	• Customers raised concerns that after the 2023-27 regulatory period, prices could materially increase if Powerlink's WACC increases • Customers provided initial support for Powerlink to undertake further analysis to gain a better understanding on prices.	• We decided not to progress this due to challenges in relation to Rule changes required, regulatory risks and overall minimal customer benefits that would result. • RPRG members supported our position. The RPRG acknowledged our efforts to explore a 'new way of doing things' but agreed the associated complexities of further pursuing this work were not likely to result in material outcomes for customers.
Depreciation tracking approach	• Customers acknowledged why we proposed a change to our depreciation tracking approach and that it is a more accurate approach over time. • We were asked to investigate whether transitionary impacts of changing our approach (i.e. higher revenue) could be mitigated / smoothed.	• We investigated options to smooth the transitionary impact of changing our approach by implementing a minor change to asset lives for secondary systems assets. This smooths the revenue impact on customers between the 2023-27 and 2028-32 regulatory periods. • We will pursue the change to our depreciation tracking approach and the option to smooth the impact for customers in our Revenue Proposal.
Inflation forecast	• Customers wanted clarification on how different treatments of inflation can impact on revenue.	• We have committed to prepare a paper to explain how inflation is captured and how it can impact revenue under the regulatory framework. • We will also play an active role in the AER's inflation review.

Feedback received and action taken to date

Topic	Feedback received	What we've done
Operating expenditure		
Step changes	• Customers were interested in how potential step changes were identified and which ones would not be pursued • What were the legislative/regulatory drivers and how can we engage with regulators and government to reduce cost impacts • Customers asked how they can assist with engagement with government on relevant proposed step changes	• 27 potential step changes were identified by the business. Powerlink progressed six for consideration by RPRG. • This list has been reduced to two for further consideration – cyber security and transmission ring fencing. • We are providing background information to the RPRG on the types of minor, potential step changes identified which are not being pursued.
Insurance	• Customers recognise and are concerned by increases in insurance across the energy sector. • Keen to understand drivers on increase in insurance and what steps can be taken to manage risk and costs. • Want further information on how Powerlink will balance between self-insurance and cost pass throughs.	• We organised for our insurance brokers, Marsh, to give an overview of the broader insurance markets and drivers. • We are exploring options to potentially reduce insurance costs and will discuss insurance in more detail at a customer/stakeholder workshop.
Cyber security	• Customers want to understand the full costs of our cyber security program (capex and opex) and intended approach.	• We plan to have a dedicated workshop on cyber security with customers/stakeholders.
AEMC Levy	• Customers raised concerns about their ability to influence the AEMC Levy.	• We are engaging with regulatory and government stakeholders to consider alternate ways to treat this cost.
Benchmarking	• Customers acknowledged that changes to certain inputs can have material impact on benchmarking results without improving outcomes for customers • Want to see Powerlink make genuine improvements in capex and opex rather than just target improvement in benchmarking to look good on 'the beauty parade'.	• Focus on pursuing changes that provide genuine benefits to customers and not changes that may improve benchmarking but with no direct customer benefit. • Followed up with AER staff on the benchmarking model, in particular issue associated with impact of zero unserved energy input.
Productivity	• Customers want to understand whether Powerlink can drive a higher operating expenditure productivity target than industry trend.	• We are considering productivity further, and this will be discussed with the RPRG.

Feedback received and action taken to date

Topic	Feedback received	What we've done
Capital expenditure		
Hybrid+ capital expenditure forecast methodology	• Customers recognised the challenges of pursuing a full bottom-up forecast and reasons why Powerlink is taking a Hybrid+ approach. • There was broad support for Hybrid+ approach as striking a reasonable balance between bottom-up and top-down forecasts	• We have adopted the Hybrid+ model for capital expenditure forecasting.
Replacement expenditure (repex) model	• Customers and AER staff wanted to ensure the Repex Model did not double count expenditure included within bottom-up forecasts.	• We reviewed inputs into the Repex Model and our approach to integrating the top-down and bottom-up elements. Our approach will not result in expenditure being double counted.
Contingent reinvestment projects	• Strong support from customers for concept of contingent reinvestment projects for those investments that may have significant uncertainty around need, timing and cost for next regulatory period.	• We are in discussions with AER staff to determine suitability of this concept. • We intend to discuss contingent reinvestment projects further with customers after discussions with AER staff.
Integrated System Plan (ISP) projects	• Customers are interested in how the QNI Medium project will be treated in the Revenue Proposal. • Particular interest in how cost estimates for ISP projects were developed for the 2020 ISP.	• We had discussions with interested customers on costs associated with QNI Medium to answer queries. • The QNI Medium project is currently a contingent project in the Revenue Proposal. This will be reviewed after publication of the Final 2020 ISP by AEMO.
Business IT	• Customers had direct input on development of our new IT Benefits Realisation Framework. Feedback focused on criteria and metrics to support IT investment. • Based on the forecast capex information provided, the RPRG did not feel business IT required deeper engagement.	• We presented the Customer Panel our final IT Benefits Realisation Framework, which incorporated their feedback. • We will share some draft business IT investment cases with customers prior to Revenue Proposal lodgement. • If possible, we will share a business IT post-implementation review prior to Revenue Proposal lodgement, noting the Benefits Realisation Framework is newly developed.

Feedback received and action taken to date

Topic	Feedback received	What we've done
Service Target Performance Incentive Scheme (STPIS)		
STPIS review	• Customers supported Powerlink's proposal for the AER to review STPIS. • Customers were keen to ensure that STPIS appropriately incentivises improvements in network performance and ensures reliability drivers to benefit market participants and customers.	• We lodged a request with the AER to discuss a potential STPIS review, providing supporting information for the request. • Awaiting a decision from the AER on a STPIS review.