DRAFT DECISION
Powerlink Queensland
Transmission Determination

2022 to 2027

(1 July 2022 to 30 June 2027)

Overview

September 2021

AUSTRALIAN ENERGY REGULATOR

Inquiries about this publication should be addressed to:

Australian Energy Regulator
GPO Box 520
Melbourne Vic 3001

Tel: 1300 585 165
Email: AERInquiry@aer.gov.au

AER reference: 65444

Invitation for submissions

We invite interested stakeholders to attend an AER online public forum on our draft decision on **13 October 2021**, 3pm to 5pm (AEDT). You can register by emailing your contact details to Powerlink2022@aer.gov.au.

In response to our draft decision, Powerlink Queensland (Powerlink) has the opportunity to submit a revised proposal for its upcoming 2022–27 regulatory control period by **3 December 2021**.

Interested stakeholders are also invited to make submissions on both our draft decision and Powerlink's revised proposal (once submitted) by **14 January 2022**.

We will consider and respond to all submissions received by that date in our final decision which will be published on **29 April 2022**.

Submissions should be sent to: Powerlink2022@aer.gov.au

Alternatively, submissions can be sent to:

Warwick Anderson
General Manager
Australian Energy Regulator
GPO Box 1313
Canberra ACT 2601

Submissions should be in Microsoft Word or another text readable document format.

The AER prefers that all submissions be publicly available to facilitate an informed and transparent consultative process. We will treat submissions as public documents unless otherwise requested.

Parties wishing to submit confidential information should:

(1) clearly identify the information that is the subject of the confidentiality claim

(2) provide a non-confidential version of the submission in a form suitable for publication.

All non-confidential submissions will be placed on the AER's website.[1]

[1] For further information regarding our use and disclosure of information provided to us, see the *ACCC/AER Information Policy* (June 2014), which is available on our website: https://www.aer.gov.au/publications/corporate-documents/accc-and-aer-information-policy-collection-and-disclosure-of-information.

Note

This Overview forms part of the AER's draft decision on Powerlink Queensland's transmission network revenue determination for the 2022–27 regulatory control period. It should be read with all other parts of the draft decision.

The draft decision includes the following documents:

Overview

Attachment 1 – Maximum allowed revenue

Attachment 2 – Regulatory asset base

Attachment 3 – Rate of return

Attachment 4 – Regulatory depreciation

Attachment 5 – Capital expenditure

Attachment 6 – Operating expenditure

Attachment 7 – Corporate income tax

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Executive summary

The Australian Energy Regulator (AER) regulates electricity transmission and distribution networks in all Australian jurisdictions except Western Australia. As part of this process, a regulated electricity network business must periodically apply to us to determine the maximum allowed revenue the business will recover from consumers for using its network. The National Electricity Law and Rules (NEL and NER) provide the regulatory framework governing electricity networks. Our work under this framework is guided by the National Electricity Objective (NEO).[2] We use our insights and expertise to determine how much revenue a network business can recover from consumers.

We are currently doing this for Powerlink Queensland[3] (Powerlink) for the 2022–27 regulatory control period, starting 1 July 2022 to 30 June 2027 (2022–27 period).[4]

Powerlink is a licensed, regulated operator of the monopoly high voltage electricity transmission network in Queensland, running from Cairns to the New South Wales border. It designs, constructs, operates and maintains a network servicing five million Queenslanders, which includes poles, wires and transformers that are used for transporting electricity from remote generators to population centres.

Powerlink put forward a well-informed revenue proposal for the 2022–27 period, underpinned by significant consumer engagement and its overarching goal of lodging an initial proposal that is acceptable to its consumers and the AER. Based on the positive views of stakeholders, Powerlink's substantial time and resource commitment to developing its proposal has been well invested. We can see Powerlink's efforts reflected in the views expressed in the submissions we received, in terms of Powerlink's consumer engagement approach and its proposed expenditures. As a result, we consider that Powerlink's proposal is capable of acceptance, and we have accepted all major aspects of it in our draft decision.

This draft decision allows Powerlink to recover $3,652.2 million (nominal, smoothed) in revenue over the 2022–27 period from consumers, who are likely to benefit from bill reductions in the first year of the period.

While our decision will determine the revenue that Powerlink can recover from its consumers, we do not set transmission charges for each consumer or the retail electricity prices that end-consumers pay. Our role is to review Powerlink's revenue proposal to ensure that it covers only what is needed and is reasonable. Retail electricity prices in Queensland are set by retailers and include the costs associated with generation (29 per cent), transmission (9 per cent), distribution (40 per cent), environmental schemes (12 per cent) and retail (10 per cent).[5]

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2 NEL, s. 7.

3 Powerlink Queensland is the registered business name of Queensland Electricity Transmission Corporation Ltd.

4 Powerlink, *2023–27 Revenue proposal*, January 2021.

5 Ibid, pp. 4-5. Retail includes costs associated with retail, metering, losses and supply chain rounding errors.

We estimate that if our draft decision is implemented, compared to the current total bill level,[6] the transmission component of the average annual nominal electricity bill for Powerlink's consumers would:

- decrease by $12 (0.8 per cent) for residential consumers,[7] $17 (0.8 per cent) for low-usage small business consumers,[8] and $44 (0.8 per cent) for high-usage small business consumers[9] in the first year (2022–23) of the 2022–27 period[10]
- increase on average by around $3 (0.2 per cent) for residential consumers, $4 (0.2 per cent) for low-usage small business consumers, and $10 (0.2 per cent) for high-usage small business consumers in each of the following four years of the 2022–27 period.[11]

By the end of the 2022–27 period, estimated nominal retail electricity bills for residential consumers, low-usage small business consumers, and high-usage small business consumers will have decreased by $1 (0.1 per cent), $1 (0.1 per cent) and $3 (0.1 per cent), respectively.[12]

In making this draft decision, we have had regard to a range of sources including Powerlink's proposal, stakeholder submissions received, and additional analysis undertaken and published by us. Our review has been targeted, focussing on the key areas of concern raised by stakeholders and our own assessments, and proportionate to the high-quality nature of the overall proposal.

The key themes of this draft decision are:

- ensuring consumers pay no more than necessary for safe, secure and reliable electricity services
- Powerlink's strong consumer engagement approach
- Powerlink's commitment to advancing its asset management practices.

Powerlink proposes total revenue of $3,565.1 million (nominal, smoothed) for the 2022–27 period, which is $330.2 million (8.5 per cent) lower than approved revenue for the 2017–22 period and $333.6 million (8.6 per cent) lower than actual/estimated revenue for the same period.[13]

As we have accepted all major aspects of Powerlink's proposal in this draft decision, there are few areas for resolution between now and our final decision, with these areas

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6 As at 30 June 2022.

7 Based on typical electricity consumption of 4,600 kWh per annum for a residential consumer in Queensland.

8 Small businesses consuming 6,443 kWh per annum; representative of small business consumers in regional Queensland supplied by Ergon Energy Retailer.

9 Small businesses consuming 20,000 kWh per annum; representative of small business consumers in South East Queensland supplied by retailers in the Energex distribution network region.

10 As at 30 June 2023.

11 As at 30 June of each of the last four years of the 2022–27 period.

12 Compares 30 June 2027 (for the 2022–27 period) to 30 June 2022 (for the 2017–22 period).

13 In real terms ($2021–22), proposed revenue is $563.4 million (14.5 per cent) lower than approved revenue, and $661.5 million (16.6 per cent) lower than actual/estimated revenue, for 2017–22.

generally limited to the application of incentive schemes and the usual data updates we undertake in our models for the 2022–27 period.

Our draft decision approves Powerlink's forecasts for key expenditure items, including capital expenditure (capex) and operating expenditure (opex). Powerlink's capex forecasting methodology is a significant improvement on the methodology used for the 2017–22 period and, overall, its capex proposal for the 2022–27 period appears reasonable. We have identified scope for further improvement in how Powerlink forecasts capital replacement expenditure (repex) and Powerlink has committed to reviewing this aspect of its forecast to deliver the best outcomes for consumers.

Overall, our draft decision represents a revenue increase of $87.1 million (2.4 per cent) compared to Powerlink's proposal. This is driven primarily by the higher rate of return we have used to calculate the return on capital after applying the binding instrument to our decision.

Powerlink now has the opportunity to respond to our draft decision in its revised proposal. Overall, subject to us being satisfied with Powerlink's revised proposal, we are confident that our draft decision on Powerlink's 2022–27 proposal is likely to be in the long term interests of consumers and, if implemented in our final decision, consumers will be better off, now and in the future.

Ensuring consumers pay no more than necessary for safe, secure and reliable electricity services

Ensuring consumers pay no more than necessary over this and subsequent regulatory control periods for safe, secure and reliable electricity services is a cornerstone of the regulatory determination process. This involves us assessing whether Powerlink's 2022–27 proposal represents a reasonable and realistic forecast of how much money it needs for the safe and reliable operation of its electricity transmission network. It also requires us to ensure our decision incentivises and promotes better consumer outcomes over this and subsequent regulatory control periods. To inform our decision, we also engaged directly with Powerlink representatives to discuss and seek further information on aspects of its proposal.

Powerlink informs us that three key consumer drivers have influenced its proposal:[14]

- affordability – the cost of electricity remains a key concern for consumers
- price signals – directly-connected consumers want price signals that better reflect the cost of the network at different times and locations
- customer choice – consumers want a greater say in how they access, use and pay for electricity as the energy system transitions, including tailored services.

Powerlink responded to these concerns by putting forward a proposal that includes estimated lower nominal bills for consumers in the first year of the 2022–27 period,

[14] Powerlink, *2023–27 Revenue proposal*, January 2021, p. iii.

with small increases over the following four years. It is also adjusting its pricing to provide clearer locational charges for consumers.

Importantly, Powerlink's key aggregates and proposed expenditures for the 2022–27 period are moving in a direction that will benefit consumers. For example, compared to the 2017–22 period (making no allowance for the impact of inflation), Powerlink's proposal incorporates a lower return on capital (down $748.7 million or 35.2 per cent), a lower opening regulatory asset base (down $649.1 million or 8.5 per cent), lower tax (down $83.9 million or 77.9 per cent), lower capex (down $27.4 million or 3.1 per cent), and lower opex (down $4.6 million or 0.4 per cent).[15] We also note that Powerlink's overall network performance is significantly better than most transmission businesses in terms of outage durations and generally in line with its peers in terms of outage rates, although its network is younger.

Submitting stakeholders considered Powerlink's proposal represented good value for consumers and is capable of support, as set out below.

Powerlink's Customer Panel noted:

> "The Customer Panel considers that Powerlink's Regulatory Proposal does not represent an 'ambit claim'. Contingent upon the AER's analysis confirming that the proposal overall is prudent and efficient, we believe that Powerlink's Regulatory Proposal is reasonable, and it has our support."[16]

Energy Users Association of Australia (EUAA) noted:

> "Importantly, unlike other network proposals we have seen in recent years, the Powerlink proposal is not an 'ambit claim'. They do not seem to be using it as a starting point in a negotiation to gain an otherwise higher final allowed revenue…What we can say now is that Powerlink is well advanced on the journey and the proposal is 'capable of support'."[17]

Our draft decision accepts Powerlink's total opex forecast of $1,046.4 million ($2021–22) for the 2022–27 period, which is $21.6 million (2.1 per cent) lower than our alternative opex estimate of $1,068.0 million. Powerlink proposes no real growth in opex relative to its actual/estimated expenditure of $1,048.7 million for the 2017–22 period, which is $15.2 million (1.4 per cent) lower than approved for the previous period. Powerlink's opex proposal was well developed and largely consistent with our standard approach to forecasting opex, so the extent of our review was less than would have otherwise been the case. Powerlink did not include any step changes in its opex forecast, however it noted it is forecasting up to $26.1 million[18] of cost increases (which it considers could be treated as step changes) that it may need to absorb over and above its proposed opex. Our comparatively higher alternative opex estimate results from our higher inflation forecast through to June 2022 and lower annual productivity growth (0.3 versus 0.5 per cent per annum), partially offset by opex base-year differences related to self-insurance costs.

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15 Ibid, p. viii.

16 Powerlink Customer Panel, *Submission on Powerlink's proposal and AER's issues paper*, May 2021, p. 3.

17 EUAA, *Submission, Powerlink QLD revenue proposal 22–27*, May 2021, pp. 2-3.

18 In $2021–22 terms.

In terms of capex, our draft decision accepts Powerlink's total net capex forecast of $863.9 million for the 2022–27 period, which is founded on a significantly improved forecasting methodology since our 2017–22 decision.[19] Utilising an iterative approach to gather and respond to stakeholder feedback, Powerlink's 2022–27 capex proposal has reduced substantially from the 12 per cent increase set out in its draft proposal.[20] Our draft decision for the 2022–27 period is $27.4 million (3.1 per cent) lower than Powerlink's actual/estimated total net capex of $891.3 million for the 2017–22 period, which itself is $1.8 million (0.2 per cent) lower than we approved for the same period.[21]

We have assessed Powerlink's proposal at the component level to satisfy ourselves of the robustness of proposed expenditures, as well as more holistically to confirm its alignment with Powerlink's business priorities over the near and longer term. Overall, we consider Powerlink's proposal achieves positive long term outcomes for consumers.

Powerlink's strong consumer engagement approach

Consumer engagement helps businesses determine how best to provide services that align with consumers' long term interests. Consumer engagement in this context is about Powerlink working openly and collaboratively with consumers and providing opportunities for their views and preferences to be heard and to influence Powerlink's decisions.

Based on our assessment of Powerlink's 2022–27 proposal, stakeholder submissions received, attendance at regular Powerlink meetings with consumer representatives, and regular interaction with Powerlink staff, we are confident that Powerlink is committed to putting consumers at the centre of its business and in ensuring stakeholders' views are reflected in its proposals to us.

We commend Powerlink on its consumer engagement approach to date, and note that it is further engaging on issues raised by stakeholders, such as the operationalisation of opex and capex productivity opportunities in the 2022–27 period and the application of the demand management innovation allowance mechanism (DMIAM). This commitment to understanding consumers' key areas of interest and scheduling stakeholder meeting agendas based on those interest areas has been demonstrated consistently by Powerlink since the embryonic stages of its proposal's development.

For example, Powerlink's engagement plan for its 2022–27 proposal was developed through a co-design process – involving consumers, stakeholders and members of Powerlink's Board, Executive and Senior Leadership Team – to gain insights into the engagement approach, scope, techniques, sequencing, evaluation and communications.[22] Engagement activities were based on feedback obtained at a co-design workshop held in May 2019 and included:[23] meetings of Powerlink's

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19 Powerlink, *2023–27 Revenue proposal*, January 2021, p. viii.

20 Powerlink, *Draft revenue proposal overview – 2022/23 – 2026/27 regulatory period*, September 2020, p. 4.

21 Ibid, p. iii.

22 Powerlink, *2023–27 Revenue proposal – Appendix 3.01, Engagement plan*, January 2021, p. 3.

23 Powerlink, *2023–27 Revenue proposal*, January 2021, pp. 27-28.

Customer Panel and Revenue Proposal Reference Group; consultation on a draft revenue proposal and webinar; consultation on a preliminary positions and forecasts paper; promotion at Powerlink's Transmission Network Forum; an insurance deep dive; one-on-one briefings with directly-connected consumers; regional engagement; digital engagement; and formal research.

Stakeholders were strongly supportive of Powerlink's consumer engagement approach, as set out below.

Consumer Challenge Panel (CCP23) noted:

> "Our observations suggest that there are two significant aspects to the Powerlink consumer engagement in the lead-up to this regulatory proposal: the iterative methodology that has been applied to the engagement, which has included clear focus and depth in regard to major topics, over the better part of two years; [and] the upfront intent of Powerlink to lodge a proposal that was capable of acceptance…the engagement was much more at the 'involve and collaborate' level…"[24]

Powerlink's Customer Panel noted:

> "The Customer Panel are unanimous in our view that Powerlink's engagement with us has been genuine, consistent and deep…there were no surprises in the final version of the Revenue Proposal and that is consistent with our expectations."[25]

EUAA noted:

> "Given our wide experience across the NEM in network resets, we judge Powerlink's approach to be best practice in a constantly improving landscape…There were many instances of Powerlink listening to and responding very well to suggestions we made through this process. We can clearly see impact of our engagement on the Proposal."[26]

Aurizon Network noted:

> "…Aurizon Network commends Powerlink on the significant improvements in its stakeholder engagement and recommends that the AER have regard to the quality of the stakeholder engagement in assessing Powerlink's Revenue Proposal."[27]

Section 1.4 details further consideration of Powerlink's consumer engagement program through the lens of our framework for assessing consumer engagement (which is set out in full at Appendix D). Our framework sets out the range of considerations that we think can clearly demonstrate whether consumers have been genuinely engaged in the development of a revenue proposal.[28] As set out in section 1.4, Powerlink's consumer engagement approach performs strongly against the AER framework's criteria.

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[24] CCP23, *Advice to the AER on the Powerlink transmission regulatory proposal for the regulatory determination 1 July 2022 to 30 July 2027*, May 2021, p. 4-5.

[25] Powerlink Customer Panel, *Submission on Powerlink's proposal and AER's issues paper*, May 2021, p. 2.

[26] EUAA, *Submission, Powerlink QLD revenue proposal 22–27*, May 2021, p. 2.

[27] Aurizon Network, *Powerlink determination – 2022–27*, May 2021, p. 4.

[28] See Table 7, AER, *Draft decision, Jemena distribution determination 2021–26*, September 2020, p. 43.

Powerlink's commitment to advancing its asset management practices

Powerlink has been progressively improving its capex governance and forecasting, and its current practices reflect well in our top-down and benchmarking analysis. To capitalise on the significant gains it has made to its underlying asset management practices since our 2017–22 decision, Powerlink has committed to working with its consumers on a review of its approach to network asset reinvestment in 2022–23 and would seek to adopt improvements that would deliver further value to consumers over the remainder of the 2022–27 period.

In formulating this draft decision, we undertook a targeted review of Powerlink's capex forecast for the 2022–27 period. We engaged in workshops with Powerlink subject matter experts and undertook detailed assessments of responses to our information requests. Repex comprises the largest single category of capex, accounting for $674.8 million (78.1 per cent) of total forecast capex. This was the focus of our targeted review, particularly transmission lines and tower refurbishment, which represent a significant part of the replacement work over the next five years.

Powerlink has moved towards using risk cost based analysis to support its economic modelling and provided a bottom-up repex forecast for over 70 per cent of its proposed capex. The balance of the proposed repex is based on the use of the repex model and trend forecasts.

Powerlink's risk cost based analysis and supporting economic modelling are a significant step forward. We consider Powerlink's models are well developed and generally provide a reasonable assessment of the expected benefits of the proposed investment. While overall, the capex proposal appears reasonable, we have identified scope for further improvement in the repex asset management approach. We consider that Powerlink's asset management, particularly in relation to transmissions lines repex, should encompass a more targeted economic risk based practice.

Powerlink acknowledged our concerns by committing to a review of its approach to network asset reinvestment in 2022–23 to ensure it continues to support the provision of safe, secure, reliable and cost-effective electricity transmission services. Powerlink expects the scope of the review to address both prudency and efficiency aspects of network asset reinvestments. Powerlink will publish the outcomes of the review in 2022–23 and seek to adopt improvements that would deliver further value to consumers over the remainder of the 2022–27 period. We consider Powerlink's review provides a further opportunity to inform the efficiency of network asset reinvestment, noting the potential for trade-offs between capex and opex and consumer prices.

Next steps

We invite interested stakeholders to attend an AER online public forum on our draft decision on **13 October 2021**.

Powerlink now has the opportunity to consider our draft decision and submit a revised proposal to us by **3 December 2021**.

Interested stakeholders are also invited to make submissions on both our draft decision and Powerlink's revised proposal (once submitted) by **14 January 2022**.

We will make our final decision on **29 April 2022**.

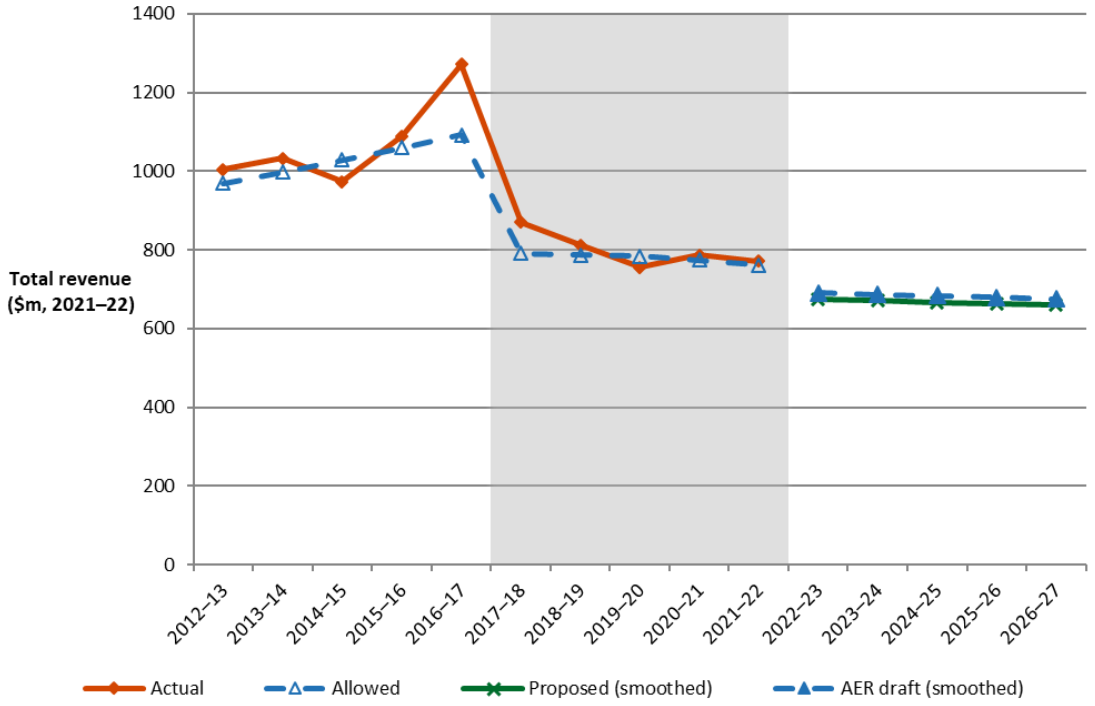
1 Our draft decision

This section outlines what is driving Powerlink's revenue, the key differences between our draft decision revenue of $3,652.2 million (nominal, smoothed) compared to Powerlink's proposed $3,565.1 million, and the estimated consumer bill impacts.

1.1 What is driving revenue?

Over time, inflation impacts the spending power of money. To compare revenue from one period to the next on a like-for-like basis, we use 'real' values based on a common year (2021–22) that have been adjusted for the impact of inflation.[29] In real terms, 2022–27 draft decision total revenue is $482.0 million (12.4 per cent) lower than approved for the 2017–22 period.[30] Figure 1 shows real revenues decreasing from 2021–22 levels by 10.5 per cent in 2022–23, followed by decreases of 0.6 per cent per annum over the remaining years.

Figure 1 Change in transmission revenue over time ($2021–22, million)



Source: AER analysis; Powerlink regulatory accounts 2012–13 to 2019–20 and RIN workbook 1 January 2021; AER Final decision PTRM for the 2012–17 and 2017–22 periods; Powerlink Regulatory Proposal PTRM for the 2022–27 period; AER draft decision PTRM for the 2022–27 period.

Note: Actual revenue shown in this figure includes revenue from Inter- and Intra-Regional Settlements Residue collections and may not fully reflect revenue recovered from end-user transmission charges.

[29] That is, 30 June 2022 dollar terms based on Powerlink's estimated actual revenue for 2021–22.

[30] The comparison of total revenue between the 2022–27 and 2017–22 periods is based on smoothed revenue. In nominal dollar terms, 2022–27 draft decision total revenue is $243.1 million (6.2 per cent) lower than approved for the 2017–22 period.

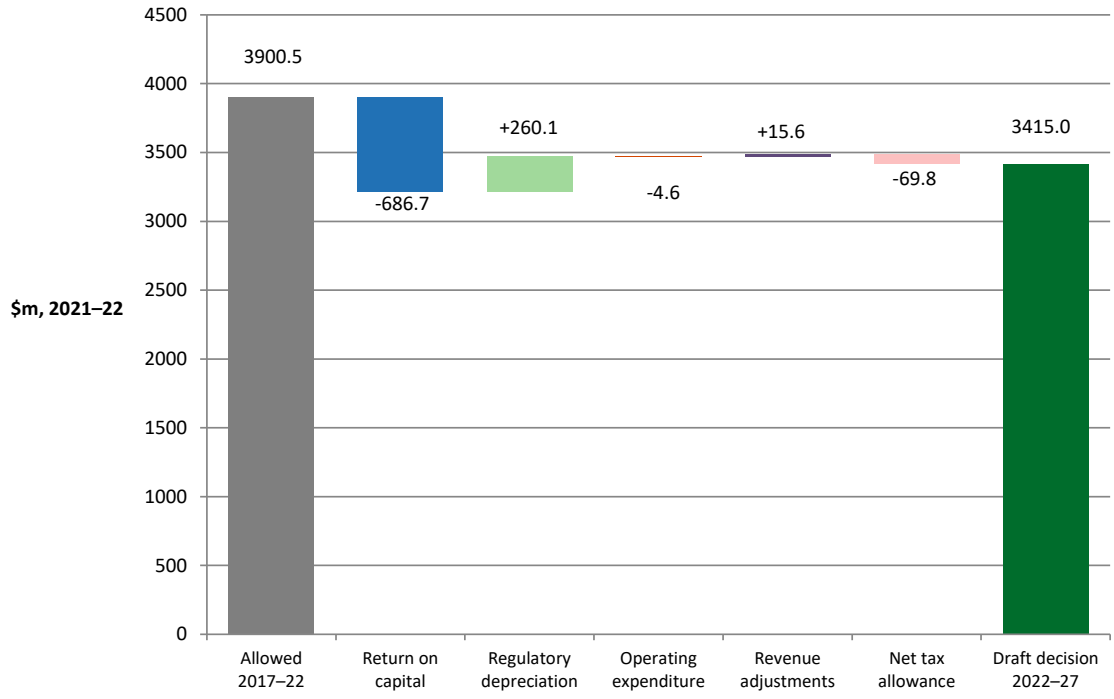
Figure 2 highlights the key drivers of the decrease in Powerlink's allowed revenue from the 2017–22 period compared to what we expect in the 2022–27 period. It shows our 2022–27 draft decision provides for reductions in the building blocks for:

- return on capital, which includes capex and its financing cost, which is $686.7 million (32.3 per cent) lower than the 2017–22 period, driven largely by a lower rate of return being applied in the 2022–27 period
- opex, which is $4.6 million (0.4 per cent) lower than the 2017–22 period
- net tax allowance, which is $69.8 million (64.9 per cent) lower than the 2017–22 period, mainly due to our regulatory tax approach following the 2018 tax review, as well as a lower return on equity and higher imputation credits value (gamma).

Figure 2 also shows that our 2022–27 draft decision provides for an increase in the building blocks for:

- regulatory depreciation, which is $260.1 million (41.7 per cent) higher than the 2017–22 period, driven by the move to apply year-by-year tracking of depreciation and a lower indexation of the regulatory asset base (RAB)[31]
- revenue adjustments, which are $15.6 million higher than the 2017–22 period, due to positive amounts for the efficiency benefit sharing scheme (EBSS) and demand management innovation allowance mechanism (DMIAM) more than offsetting the negative amount for the capital expenditure sharing scheme (CESS) adjustment.

Figure 2 Change in transmission revenue from 2017–22 to 2022–27 ($2021–22, million, unsmoothed)

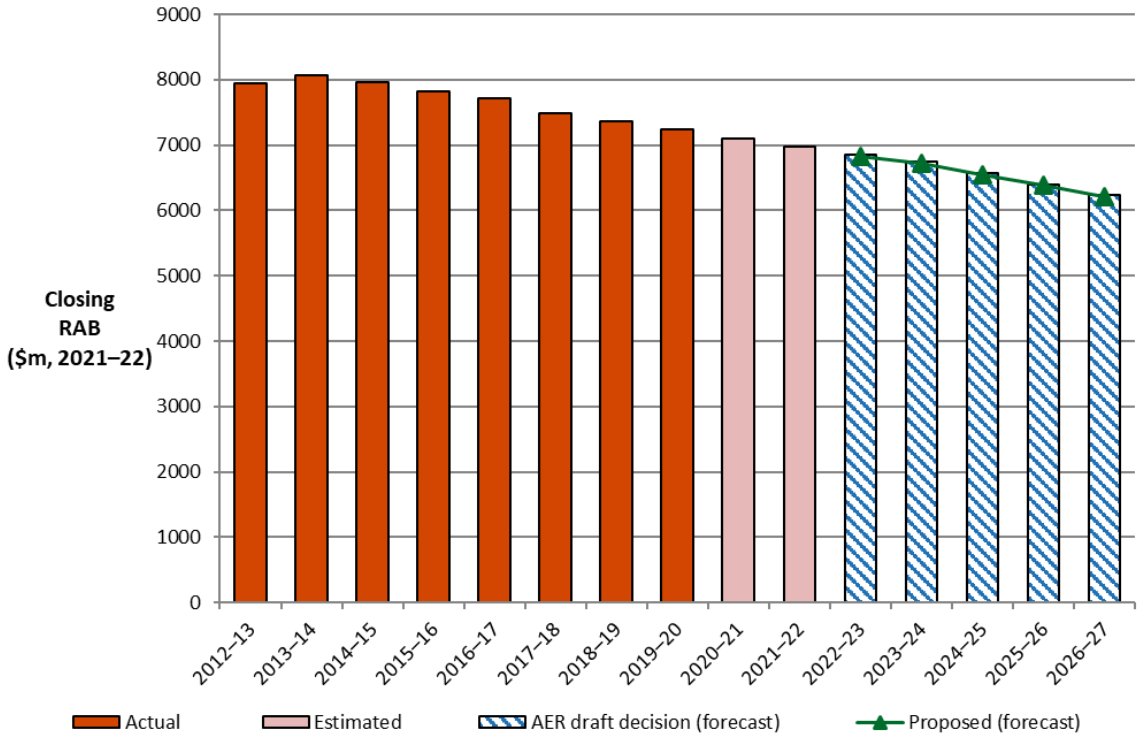


Source: AER Final decision PTRM for the 2017–22 period; AER draft decision PTRM for the 2022–27 period.

[31] This is due to a lower expected inflation combined with a lower average RAB in 2022–27 versus 2017–22.

Figure 3 shows the value of Powerlink's RAB overtime. RAB growth is a key issue for many stakeholders because the value of the RAB substantially impacts Powerlink's revenue requirement, and the price consumers ultimately pay, potentially over several regulatory control periods. Other things being equal, a higher RAB would increase both the return on capital and depreciation (return of capital) components of the revenue determination. As shown below, our draft decision results in a declining RAB over the 2022–27 period. It is the lowest closing RAB value compared to the previous two periods.

Figure 3 Value of Powerlink's RAB over time – Actual RAB, proposed forecast RAB and AER draft decision ($2021–22, million)



Source: AER analysis; AER Final decision RFM for the 2017–22 period; AER draft decision RFM and PTRM for the 2022–27 period; Powerlink Regulatory Proposal PTRM for the 2022–27 period.

1.2 Key differences between our draft decision and Powerlink's proposal

Powerlink proposes total forecast revenue of $3,334.2 million for the 2022–27 period ($2021–22).[32] Our draft decision of $3,415.6 million allows $81.3 million (2.4 per cent) more revenue than proposed by Powerlink for the 2022–27 period.[33] The increase is mainly driven by the higher return on capital and corporate income tax building blocks.

[32] Powerlink, *Revenue Proposal 2022-27, Post Tax Revenue Model*, January 2021.

[33] In nominal terms (smoothed), Powerlink proposes total forecast revenue of $3,565.1 million for the 2022–27 period. Our draft decision of $3,652.2 million allows $87.1 million (2.4 per cent) more revenue than proposed by Powerlink for the 2022–27 period.

- Our draft decision approves a return on capital of $1,439.7 million, which is $62.0 million (4.5 per cent) higher than proposed by Powerlink. This is driven by the higher rate of return we have used for our draft decision, reflecting updated market data as required by the binding 2018 Rate of Return Instrument (Instrument).[34] The updated data resulted in a higher rate of return on equity, which more than offset the decrease to the return on debt.
- Our draft decision approves corporate income tax of $37.8 million, which is $14.1 million (59.3 per cent) higher than proposed by Powerlink. This is mainly driven by the higher return on equity, which increases taxable income and, therefore, results in higher income tax.

Outcomes of our draft decision on other building blocks remain largely in line with Powerlink's proposal. Compared to Powerlink's proposal, our draft decision on other components include:

- no change to Powerlink's proposed opex forecast in real terms
- an increase in regulatory depreciation of $2.6 million (0.3 per cent)
- an increase to revenue adjustments of $2.5 million (51.8 per cent) due primarily to the application of the DMIAM.

1.3 Estimated impact of our draft decision on electricity bills

Figure 4 shows the electricity supply chain components that contribute to the annual electricity bill for Queensland consumers, including generation, transmission, distribution, metering and retail costs. Each of these costs contributes to the retail prices charged to consumers by their chosen electricity retailer.

Powerlink's transmission charges, on average, represent approximately 9 per cent of the annual electricity bill for Queensland residential and small business consumers.[35] This relatively small percentage explains the modest impact on bills arising from our draft decision.

We estimate the impact on bills by varying Powerlink's transmission charges in accordance with our draft decision, while holding constant all other component costs that make up the electricity bill. This approach isolates the effect of our decision on electricity prices, but does not imply that other components will remain unchanged across the regulatory control period.[36]

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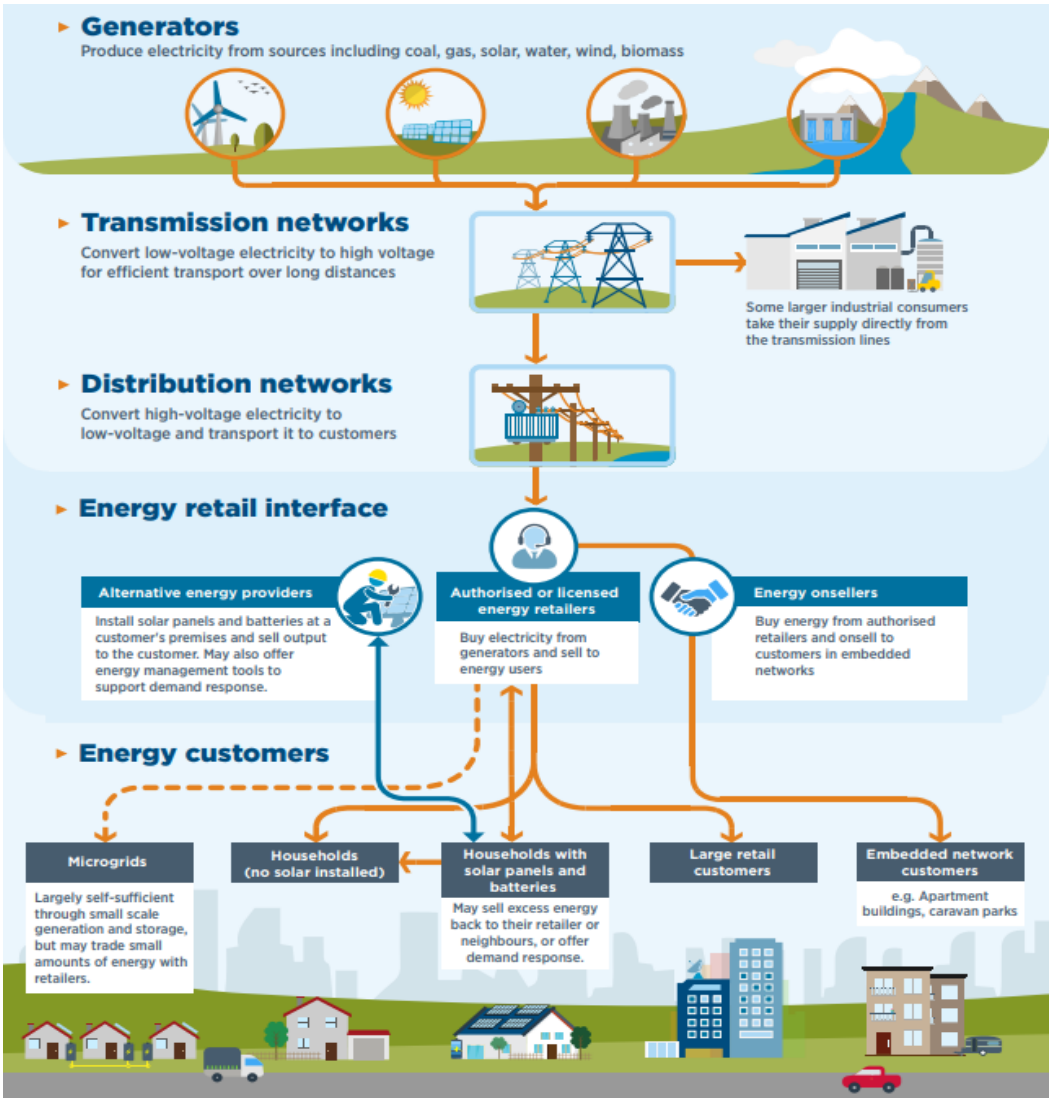
34 AER, *Rate of Return Instrument*, December 2018.

35 Powerlink, *TRP 2023-27 - RIN Workbook 7 – Indicative bill impacts,* January 2021. Transmission component of the annual electricity bill calculated from figure 2.4 in AEMC, *Final report residential electricity price trends 2020,* December 2020, p. 7.

36 It also assumes that actual energy consumption will equal the forecast adopted in our draft decision. Since Powerlink operates under a revenue cap, changes in energy consumption will also affect annual electricity bills across the 2022–27 period.

Figure 4 The electricity supply chain



Share of the retail bill:

29%

9%

40%

10%*

Note: Environmental schemes account for the remaining 12% share of the retail bill.

Source: AER, *State of the Energy Market*, July 2020, p. 25; AEMC, *Final report residential electricity price trends 2020*, December 2020, p. 7.

Notes: * Includes costs associated with retail, metering, losses and errors in the estimated value of all other supply chain cost components. Powerlink, *2023–27 Revenue proposal*, January 2021, pp. 4-5.

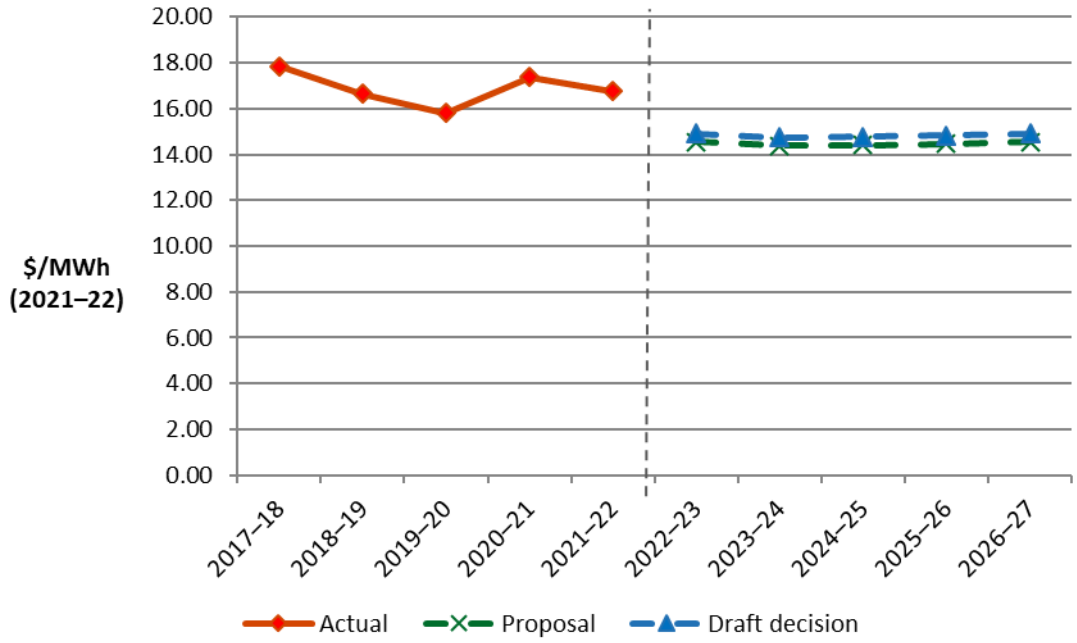
1.3.1 Transmission charges

Figure 5 shows indicative average transmission charges over the 2017–18 to 2026–27 time interval ($2021–22). These amounts are an approximation of transmission charges (measured in MWh).[37] Based on this approach, we estimate our draft decision will result in a decrease in annual average transmission charges for Powerlink over the

[37] We estimate the forecast average transmission charge by taking Powerlink's expected smoothed revenue and dividing it by the forecast annual energy delivered in Queensland as published by AEMO, after adjusting for certain energy components such as energy losses and energy delivered by embedded generators directly to distribution networks.

2022–27 period, from around $16.9/MWh for the 2017–22 period[38] to $14.8/MWh for the 2022–27 period.

Figure 5 Indicative transmission price path for Powerlink ($2021–22, $/MWh)



Source: AER analysis.
Notes: The price path for the transmission network is based on actual and forecast energy throughput amounts for Powerlink's transmission network across Queensland.
Revenue used to calculate the 'Actual' indicative price path includes revenue from Inter- and Intra-Regional Settlements Residue collections and may not fully reflect price path experienced by end-users.

1.3.2 Potential bill impact

As set out in Table 1, compared to the current total bill level,[39] we estimate that if our draft decision is implemented, the transmission component of the average annual nominal electricity bill for Powerlink's consumers would:

- decrease by $12 (0.8 per cent) for residential consumers,[40] $17 (0.8 per cent) for low-usage small business consumers,[41] and $44 (0.8 per cent) for high-usage small business consumers[42] in the first year (2022–23) of the 2022–27 period[43]

[38] Transmission charges for 2017–18 to 2019–20 are based on actual revenue, while 2020–21 and 2021–22 transmission charges are based on estimated revenue.

[39] As at 30 June 2022.

[40] Based on typical electricity consumption of 4,600 kWh per annum for a residential consumer in Queensland.

[41] Small businesses consuming 6,443 kWh per annum; representative of small business consumers in regional Queensland supplied by Ergon Energy Retailer. See QCA, *Technical appendices final determination - Regulated electricity prices for 2021–22*, June 2021, p. 49.

[42] Small businesses consuming 20,000 kWh per annum; representative of small business consumers in South East Queensland supplied by retailers in the Energex distribution network region. See AER, *Final determination - Default market offer prices 2021–22*, 27 April 2021, p. 21.

[43] As at 30 June 2023.

- increase on average by around $3 (0.2 per cent) for residential consumers, $4 (0.2 per cent) for low-usage small business consumers, and $10 (0.2 per cent) for high-usage small business consumers in each of the following four years of the 2022–27 period.[44]

By the end of the 2022–27 period, estimated nominal retail electricity bills for residential consumers, low-usage small business consumers, and high-usage small business consumers will have decreased by $1 (0.1 per cent), $1 (0.1 per cent) and $3 (0.1 per cent), respectively.[45]

Further details on the calculation of Powerlink's revenue and the impact on network charges are set out in Attachment 1.

Table 1 Estimated impact of Powerlink's proposal and the AER's draft decision on average annual bills over 2022–27 ($ nominal)

	2021–22	2022–23	2023–24	2024–25	2025–26	2026–27
AER draft decision						
Residential annual electricity bill	1,455[a]	1,443	1,445	1,448	1,451	1,454
Annual change[c]		–12 (–0.8%)	1 (0.1%)	3 (0.2%)	3 (0.2%)	3 (0.2%)
Small business with 6,443 kWh consumption annual bill	2,085[b]	2,068	2,070	2,074	2,079	2,084
Annual change[c]		–17 (–0.8%)	2 (0.1%)	4 (0.2%)	5 (0.2%)	5 (0.2%)
Small business with 20,000 kWh consumption annual bill	5,517[a]	5,473	5,478	5,489	5,501	5,514
Annual change[c]		–44 (–0.8%)	5 (0.1%)	11 (0.2%)	12 (0.2%)	13 (0.2%)
Powerlink proposal						
Residential annual electricity bill	1,455[a]	1,441	1,442	1,445	1,448	1,451
Annual change[c]		–14 (–1%)	1 (0.1%)	3 (0.2%)	3 (0.2%)	3 (0.2%)
Small business with 6,443 kWh consumption annual bill	2,085[b]	2,064	2,066	2,070	2,075	2,080
Annual change[c]		–21 (–1%)	2 (0.1%)	4 (0.2%)	5 (0.2%)	5 (0.2%)
Small business with 20,000 kWh consumption annual bill	5,517[a]	5,462	5,467	5,478	5,490	5,503
Annual change[c]		–55 (–1%)	5 (0.1%)	11 (0.2%)	12 (0.2%)	13 (0.2%)

Source: AER analysis; Powerlink, *Revenue proposal 2022-27,* PTRM*,* January 2021.
(a) AER, *Final determination - Default market offer prices 2021-22*, 27 April 2021, p. 21.
(b) QCA, *Final determination - Regulated retail electricity prices for 2021-22*, June 2021, p. 6.
(c) Annual change amounts and percentages are indicative. They are derived by varying the transmission component of 2021–22 bill amounts in proportion to yearly expected revenue divided by Powerlink's forecast energy. Actual bill impacts will vary depending on electricity consumption and tariff class.

[44] As at 30 June of each of the last four years of the 2022–27 period.

[45] Compares 30 June 2027 (for the 2022–27 period) to 30 June 2022 (for the 2017–22 period).

1.4 Powerlink's consumer engagement

The National Electricity Objective (NEO) focuses our work on the long term interest of consumers[46] and we think including consumers in the development of proposals is the best way to deliver this. Genuine, high quality engagement with consumers helps network service providers to better understand consumers' preferences and experiences and drive the development of proposals that align with consumers' long term interests. This facilitates a more efficient regulatory process.[47]

The NER also requires us to consider the extent to which elements of a network service provider's proposal addresses relevant concerns identified during its engagement with consumers.[48] Stronger consumer engagement can help us test a proposal and can raise alternative views on matters, such as service priorities, capital and operating expenditures, and tariff structures. It can also inform the depth of technical assessment that is required, but does not displace it.

In the regulatory process, we determine if the revenue that Powerlink proposes to recover over the 2022–27 period is in the long term interests of consumers. To do this, we use a range of considerations to demonstrate whether consumers had been genuinely engaged in the development of Powerlink's proposal. The framework we use for assessing a network service provider's consumer engagement approach is replicated at Appendix D.[49] This framework includes the consideration of the nature, breadth and depth of the engagement, and clearly evidencing the impact that engagement had on the proposal and assessment of proposed expenditure outcomes.

We note that as part of its 2022–27 proposal, Powerlink included a self-assessment of its consumer engagement approach by utilising the AER's framework.[50] We consider that this reflects positively on Powerlink because it invites open and transparent evaluations of its engagement approach by consumers through our public consultation on its proposal.

Based on our assessment of Powerlink's 2022–27 proposal, stakeholder submissions received, attendance at regular Powerlink meetings with consumer representatives, and regular interaction with Powerlink staff, we are confident that Powerlink is committed to putting consumers at the centre of its business and in ensuring stakeholders' views are reflected in its proposals to us.

We commend Powerlink on its consumer engagement approach to date, and note that it is further engaging on issues raised by stakeholders, such as the operationalisation of opex and capex productivity opportunities in the 2022–27 period and application of the DMIAM to Powerlink.

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46 NEL, s. 16(1)(a).

47 AER, *Draft better resets handbook – Towards consumer centric network proposals*, September 2021, p. 3.

48 NER, cl 6A.6.6(e)(5A) and 6A.7(e)(5A).

49 The AER's consumer engagement framework arose from our Victorian 2021–26 electricity distribution decisions. See table 7; AER, *Draft decision, Jemena distribution determination 2021–26, Overview*, September 2020, p. 43.

50 Powerlink, *2023–27 Revenue proposal*, January 2021, pp. 18-19.

In developing its 2022–27 proposal, Powerlink noted:

> "Our overarching goal has been to deliver a Revenue Proposal that is capable of acceptance by our customers, the AER and Powerlink. This goal targeted acceptance of our Revenue Proposal as an overall package by relevant stakeholders at the time we lodged our Revenue Proposal with the AER in January 2021."[51]

Stakeholders considered that although Powerlink's proposal is of high-quality, their views on the capability of acceptance of a proposal will be conditional on the AER's assessment of the proposal given its access to information and assessment tools. Stakeholders, such as the Energy Users Association of Australia (EUAA), felt more comfortable to endorse Powerlink's proposal as being 'capable of support' at this stage of the determination process.[52]

Consumer Challenge Panel (CCP23) noted:

> "We advise the AER that with regard to the question of the capability of acceptance of the Powerlink revenue proposal, our view is that the AER's decision on whether the proposal is capable of acceptance should be conditional on: AER models testing; further review of capex noting ongoing changes in energy market and policy; ongoing review of opportunities for opex productivity; resolution of the contingent project trigger; revised forecasts and rate of return updates; and continued engagement (as already committed). With these conditions being met, we anticipate that the AER would be able to find the proposal capable of acceptance."[53]

EUAA noted:

> "Powerlink sought to achieve a 'capable of acceptance' from the [Customer] Panel for their proposal. As we said in our Statement on Engagement, we were unable to give that assurance. The EUAA looks to the AER's analysis of the building block expenditures in the draft decision to support the EUAA's consideration of whether to make such a definitive statement."[54]

Aurizon Network noted:

> "Aurizon Network notes that ultimately whether a Revenue Proposal is capable of acceptance must be determined by the AER as they are the only party for which all relevant information has been provided and with the ability to scrutinise that information against the requirements of the NER."[55]

Powerlink's Customer Panel noted:

> "If Powerlink is asking the [Customer] Panel to judge 'capable of acceptance', then Powerlink should have first clarified what that means with the AER first, so that then the Panel members had a clearer target to judge against."[56]

The nature of engagement undertaken by Powerlink on its 2022–27 proposal was driven by the co-design process it applied to developing its engagement plan. This

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51 Ibid, p. iii.

52 EUAA, *Submission, Powerlink QLD revenue proposal 22–27*, May 2021, pp. 2-3.

53 CCP23, *Advice to the AER on the Powerlink transmission regulatory proposal for the regulatory determination 1 July 2022 to 30 July 2027*, May 2021, p. 17.

54 EUAA, *Submission, Powerlink QLD revenue proposal 22–27*, May 2021, p. 2.

55 Aurizon Network, *Powerlink determination – 2022–27*, May 2021, p. 4.

56 Powerlink, *2023–27 Revenue proposal – Appendix 3.03, Customer Panel statement on engagement*, January 2021, pp. 2-4.

process – involving consumers, stakeholders and members of Powerlink's Board, Executive and Senior Leadership Team – enabled Powerlink to gain insights into the engagement approach, scope, techniques, sequencing, evaluation and supporting communications for its 2022–27 proposal.[57] Engagement activities were based on feedback obtained at a co-design workshop held in May 2019 (some 20 months before its proposal was due to the AER), which included the following insights for Powerlink:[58]

- Powerlink's Customer Panel should play a primary engagement role
- publish early forecasts approximately six months in advance of the revenue proposal to provide greater visibility and opportunity for comment
- hold one-on-one briefings with directly-connected consumers and target stakeholders
- raise stakeholder understanding of the transmission industry and regulatory approach
- deep dives should focus on large, complex or contentious topics with the greatest potential impact on revenue, and for which Powerlink has not yet made a decision
- test interest in hosting engagement forums in regional locations
- use webinars/website to make information easily accessible, despite location
- establish a microsite/dedicated section on the website to educate and facilitate interactive feedback and discussion
- investigate site tours to allow stakeholders to learn about Powerlink's operations.

Acting on the above feedback, Powerlink deployed the following key engagement activities to develop its 2022–27 proposal:[59]

- Powerlink Customer Panel[60] meetings – comprised of representatives from several industry and consumer organisations, the Panel played a key role in engagement on a range of aspects in the development of Powerlink's proposal
- Revenue Proposal Reference Group[61] (RPRG) meetings – a sub-group of Powerlink's Customer Panel, the RPRG enables Powerlink to engage in more detail, and more regularly, than with its Customer Panel, meeting every four to six weeks between October 2019 to December 2020 for discussions on engagement scope items; post-lodgement, the RPRG continues to engage on matters of ongoing stakeholder interest, such as the DMIAM

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57 Powerlink, *2023–27 Revenue proposal – Appendix 3.01, Engagement plan*, January 2021, p. 3.

58 Powerlink, *2023–27 Revenue proposal*, January 2021, pp. 26–27.

59 Ibid, pp. 27-28.

60 Powerlink's Customer Panel includes: Aurizon Network, BHP, Council on the Ageing, CS Energy, Commonwealth Scientific and Industrial Research Organisation, Edify Energy, Energy Consumers Australia (up to August 2020), Energy Queensland, Energy Users Association of Australia, Queensland Farmers' Federation, Queensland Resources Council, Shell and St Vincent de Paul. Invitees include AER staff and CCP23.

61 Powerlink's RPRG members include: CS Energy, Energy Users Association of Australia, Queensland Farmers' Federation, Shell, Energy Consumers Australia (up to June 2020) and Council on the Ageing (from July 2020). Invitees include AER staff and CCP23.

- draft revenue proposal and webinar – in response to stakeholder feedback, Powerlink published and invited submissions on a draft 2022–27 proposal in September 2020, supplemented by a stakeholder webinar in October 2020
- Preliminary positions and forecasts paper – Powerlink published this paper in August 2020 to provide stakeholders with a more detailed update on its 2022–27 proposal at that stage of development, including the key drivers of capex and opex
- Transmission Network Forum – an annual key stakeholder engagement event for Powerlink, where in 2019 and 2020, Powerlink promoted and updated stakeholders on the proposal's development
- Insurance deep dive – held in November 2020, Powerlink presented its approach to managing risk and insurance cost trade-offs, with a focus on the challenges of managing potential insurance premium increases in the 2022–27 period[62]
- One-on-one briefings – Powerlink's directly-connected consumers were offered one-on-one briefings, with 20 briefings held on pricing and its proposal
- Regional engagement – Powerlink's master stakeholder list of more than 450 contacts included regional representatives who were sent information and invited to participate in engagement, including contact being made with key regional representatives and briefings provided to 20 local governments
- Digital engagement – Powerlink established a dedicated section on its website as a central point of information on its proposal and to facilitate interactive feedback
- Formal research – Powerlink sought consumer and stakeholder feedback insights through its annual Stakeholder Perception Survey, and utilised the Queensland Household Energy Survey on consumption patterns, uptake of solar/new technology and sentiment towards energy companies to inform network planning
- Informal discussions and feedback – throughout its proposal's development, Powerlink sought regular informal feedback and responded to questions/emails from consumers, stakeholders, and the AER's CCP23 and staff.

Through this engagement, Powerlink identified three consumer drivers that, in turn, influenced the development of its 2022–27 proposal:[63]

- affordability – the cost of electricity remains a key concern for consumers
- price signals – directly-connected consumers want price signals that better reflect the cost of the network at different times and locations
- customer choice – consumers want a greater say in how they access, use and pay for electricity as the energy system transitions; a 'one size fits all' model is not appropriate.

At Powerlink's request, Powerlink's Customer Panel met separately in December 2020 (one month before lodging its proposal with us) to discuss its experiences of

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62 A summary of the insurance deep dive is published on Powerlink's website.

63 Powerlink, *2023–27 Revenue proposal*, January 2021, pp. 4-6.

engagement with Powerlink and to make a formal statement about that engagement, which Powerlink included in its 2022–27 proposal:

> "The Panel easily identified a number of cases where we feel we have influenced the Revenue Proposal…The Panel view this level of influence as high relative to other engagement processes in the industry."[64]

In terms of breadth and depth of engagement, Powerlink developed its proposal with regard to the International Association for Public Participation (IAP2) Spectrum to help it select the appropriate level of participation in its engagement program. Under this approach, Powerlink also demonstrated a willingness to deviate from its original September 2019 engagement plan and engage further in response to stakeholder interest areas, such as the approaches to depreciation and insurance in the proposal.[65]

CCP23 observed:

> "Our observations suggest that there are two significant aspects to the Powerlink consumer engagement in the lead-up to this regulatory proposal: the iterative methodology that has been applied to the engagement, which has included clear focus and depth in regard to major topics, over the better part of two years; [and] the upfront intent of Powerlink to lodge a proposal that was capable of acceptance…the engagement was much more at the 'involve and collaborate' level…"[66]

Powerlink's Customer Panel observed some further opportunities for Powerlink:

> "There was a suggestion/call for more diversity on the Panel, and perhaps some succession planning for Panel members, as well as some more targeting of voices that are currently absent.
>
> Noting the excellent depth of Powerlink's engagement with the Panel, we also feel that there could be better breadth of engagement with customers and stakeholders outside of the Panel. We acknowledge the difficulty in conducting such engagement, but would like to see more evidence of engagement with local councils, smaller businesses, etc., as well as evidence that engagement with them has also influenced Powerlink's decisions."[67]

The view expressed above proved to be insightful in regard to the DMIAM. Although Powerlink's consumer engagement approach was overwhelmingly supported by the submissions we received on its proposal, Powerlink's post-lodgement request[68] to the AER to not apply the DMIAM to Powerlink in the 2022–27 period did not resonate well with at least one interested stakeholder who is not a member of Powerlink's Customer Panel or RPRG.[69] This prompted a rapid response by Powerlink to engage further with

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64 Powerlink, *2023–27 Revenue proposal – Appendix 3.03, Customer Panel statement on engagement*, January 2021, pp. 2-4.

65 Powerlink, *2023–27 Revenue proposal*, January 2021, p. 23.

66 CCP23, *Advice to the AER on the Powerlink transmission regulatory proposal for the regulatory determination 1 July 2022 to 30 July 2027*, May 2021, p. 4-5.

67 Powerlink, *2023–27 Revenue proposal – Appendix 3.03, Customer Panel statement on engagement*, January 2021, pp. 2-4.

68 Powerlink, *Application of the demand management innovation allowance mechanism to Powerlink's 2023–27 regulatory period*, 9 July 2021.

69 Queensland Electricity Users Network, *RE: Inclusion of the demand management innovation allowance mechanism in Powerlink's 2022–27 Revenue*, May 2021.

consumers on the DMIAM prior to the draft decision and/or as part of the development of its revised proposal.

In terms of clearly evidenced impact, there needs to be a clear link between consumer research and engagement, a network business' representation of the outcomes desired by consumers, and how the proposal gives effect to those outcomes.[70] Powerlink's 2022–27 proposal was refined through an iterative process with consumers, who were engaged on the progressive development of five sets of expenditure and revenue forecasts prior to lodgement of the proposal, which included consultation on a draft proposal.

Powerlink's Customer Panel submitted:

> "The Customer Panel are unanimous in our view that Powerlink's engagement with us has been genuine, consistent and deep…there were no surprises in the final version of the Revenue Proposal and that is consistent with our expectations."[71]

EUAA submitted:

> "Given our wide experience across the NEM in network resets, we judge Powerlink's approach to be best practice in a constantly improving landscape…There were many instances of Powerlink listening to and responding very well to suggestions we made through this process. We can clearly see impact of our engagement on the Proposal."[72]

Aurizon Network submitted:

> "…Aurizon Network commends Powerlink on the significant improvements in its stakeholder engagement and recommends that the AER have regard to the quality of the stakeholder engagement in assessing Powerlink's Revenue Proposal."[73]

In terms of expenditure proof points, our draft decision accepts Powerlink's proposed capex and opex for the 2022–27 period, and notes that Powerlink's proposal includes:

- lower capex compared to actual/estimated capex for the 2017–22 period
- no real growth in opex compared to actual/estimated opex for the 2017–22 period; and Powerlink's opex forecast is lower than our alternative estimate.

EUAA noted:

> "Importantly, unlike other network proposals we have seen in recent years, the Powerlink proposal is not an 'ambit claim'. They do not seem to be using it as a starting point in a negotiation to gain an otherwise higher final allowed revenue."[74]

Powerlink's Customer Panel noted:

> "The Customer Panel considers that Powerlink's Regulatory Proposal does not represent an 'ambit claim'. Contingent upon the AER's analysis confirming that

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70 AER, *Draft better resets handbook – Towards consumer centric network proposals*, September 2021, p. 15.

71 Powerlink Customer Panel, *Submission on Powerlink's proposal and AER's issues paper*, May 2021, p. 2.

72 EUAA, *Submission, Powerlink QLD revenue proposal 22–27*, May 2021, p. 2.

73 Aurizon Network, *Powerlink determination – 2022–27*, May 2021, p. 4.

74 EUAA, *Submission, Powerlink QLD revenue proposal 22–27*, May 2021, p. 2.

> the proposal overall is prudent and efficient, we believe that Powerlink's Regulatory Proposal is reasonable, and it has our support."[75]

We conclude that, subject to us being satisfied with Powerlink's revised proposal, we are confident that our draft decision on Powerlink's 2022–27 proposal is likely to be in the long term interests of consumers and, if implemented in our final decision, consumers will be better off, now and in the future.

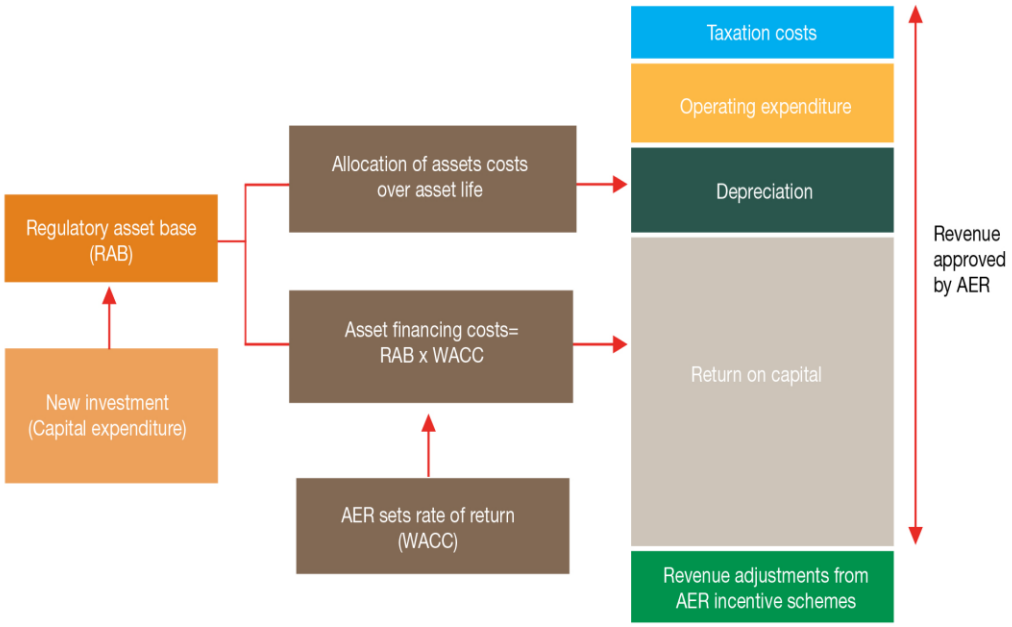
[75] Powerlink Customer Panel, *Submission on Powerlink's proposal and AER's issues paper*, May 2021, p. 3.

2 Key components of our draft decision on revenue

The total revenue Powerlink has proposed reflects its forecast of the efficient cost of providing its transmission network services over the 2022–27 period. Powerlink's proposal, and our assessment of it under the National Electricity Law (NEL) and National Electricity Rules (NER), are based on a 'building block' approach to determine a total revenue allowance (Figure 6) which looks at six cost components:

- a return on the RAB – or return on capital, to compensate investors for the opportunity cost of funds invested in this business (section 2.2)
- depreciation of the RAB – or return of capital, to return the initial investment to investors over time (section 2.3)
- capex – the capital costs and expenditure incurred in the provision of network services, which mostly relates to assets with long lives, the costs of which are recovered over several regulatory control periods. The capex approved in our decisions directly affects the size of the RAB and, therefore, the revenue generated from the return on capital and depreciation building blocks (section 2.4)
- forecast opex – the operating, maintenance and other non-capital expenses, incurred in the provision of network services (section 2.5)
- revenue increments/decrements – as carried over from the previous regulatory control period, including the application of incentive schemes, such as the EBSS and CESS (section 2.6)
- the estimated cost of corporate income tax (section 2.7).

Figure 6 The building block approach for determining total revenue



We use an incentive approach where, once regulated revenues are set for a five-year period, networks who keep actual costs below the regulatory forecast of costs retain part of the benefit. This benchmark incentive framework is a foundation of the regulatory framework which aims to promote the NEO. Service providers have an incentive to become more efficient over time because they retain part of the financial benefit from improved efficiency. Consumers also benefit when efficient costs are revealed and a lower cost benchmark is set in subsequent regulatory periods.

Our draft decision on Powerlink's transmission revenues for the 2022–27 period is set out in Table 2.

Table 2 AER's draft decision on Powerlink's transmission annual building block revenue requirement, annual expected MAR, estimated total revenue cap and X factor ($ nominal, million)

	2022–23	2023–24	2024–25	2025–26	2026–27	Total
Return on capital	324.9	316.6	308.8	298.3	287.5	1,536.2
Regulatory depreciation[a]	169.8	180.9	190.1	198.3	207.4	946.5
Operating expenditure[b]	212.1	219.3	223.6	229.4	234.9	1,119.3
Revenue adjustments[c]	5.3	–6.0	0.1	2.4	6.1	7.9
Net tax allowance	5.1	3.4	6.3	13.0	13.2	41.0
Annual building block revenue requirement (unsmoothed)	717.1	714.2	729.0	741.4	749.2	3,650.9
Annual expected MAR (smoothed)	**706.5**	**718.3**	**730.2**	**742.4**	**754.8**	**3,652.2[d]**
X factor (%)[e]	n/a[f]	0.57%	0.57%	0.57%	0.57%	n/a

Source: AER analysis.
(a) Regulatory depreciation is straight-line depreciation net of the inflation indexation on the opening RAB.
(b) Includes debt raising costs.
(c) Includes revenue adjustments from the efficiency benefit sharing scheme (EBSS), capital expenditure sharing scheme (CESS) and demand management innovation allowance mechanism (DMIAM).
(d) The estimated total revenue cap is equal to the total annual expected MAR.
(e) The X factors will be revised to reflect the annual return on debt update. Under the CPI–X framework, the X factor measures the real rate of change in annual expected smoothed revenue from one year to the next. A negative X factor represents a real increase in revenue. Conversely, a positive X factor represents a real decrease in revenue.
(f) Powerlink is not required to apply an X factor for 2022–23 because we set the 2022–23 MAR in this decision. The MAR for 2022–23 is around 10.5 per cent lower than the approved MAR for 2021–22 in real terms, or 8.4 per cent lower in nominal terms.

In the sections that follow, we discuss each component of our draft decision on Powerlink's revenue for the 2022–27 period in turn. Incentive schemes and allowances are discussed in section 3.

2.1 Regulatory asset base

The RAB is the value of the assets used by Powerlink to provide regulated transmission services. The size of the RAB, and therefore the revenue generated from the return on capital and return of capital building blocks, is directly affected by our assessment of capex.

Powerlink's proposal calculated its opening RAB (as at 1 July 2022) and its closing RAB (as at 30 June 2027) in accordance with our roll forward model (RFM) and post-tax revenue model (PTRM).

Our draft decision is to determine an opening RAB value of $6,983.4 million (nominal), as at 1 July 2022. This is $25.0 million (0.4 per cent) higher than Powerlink's proposed opening RAB of $6,958.4 million and reflects the following minor revisions:[76]

- we updated the actual CPI input for 2020–21 in the RFM, which became available after Powerlink submitted its proposal
- we updated the proposed final-year asset adjustment and asset disposal values to reflect updates and corrections made to the indexation of Powerlink's proposed RAB additions and removals
- we updated the nominal weighted average cost of capital (WACC) for 2021–22, following the most recent return on debt update in the 2017–22 PTRM
- we corrected a number of rounding errors in the nominal WACC and forecast inflation rate inputs, consistent with the approved 2017–22 PTRM.

Table 3 sets out our draft decision on the forecast RAB values for Powerlink's network over the 2022–27 period. Further detail on the roll forward of Powerlink's RAB is set out in Attachment 2.

Table 3 AER's draft decision on Powerlink's RAB for the 2022–27 period ($ nominal, million)

	2022–23	2023–24	2024–25	2025–26	2026–27
Opening RAB	6,983.4	7,010.0	7,049.5	7,028.1	6,996.9
Capital expenditure[a]	196.4	220.3	168.7	167.0	172.5
Inflation indexation on opening RAB	157.1	157.7	158.6	158.1	157.4
Less: straight-line depreciation[b]	326.9	338.6	348.7	356.4	364.9
Closing RAB	**7,010.0**	**7,049.5**	**7,028.1**	**6,996.9**	**6,961.9**

Source: AER analysis.
(a) As-incurred, and net of forecast disposals. In accordance with the timing assumptions of the PTRM, the capex includes a half-year WACC allowance to compensate for the six-month period before capex is added to the RAB for revenue modelling.
(b) Based on as-commissioned capex.

[76] Powerlink, *Revenue proposal,* January 2021, p. 113. This RAB value is based on as-incurred capex.

2.2 Rate of return and value of imputation credits

The return each business is to receive on its RAB (return on capital) is a key driver of proposed revenues. We calculate the regulated return on capital by applying a rate of return to the value of the RAB.

We estimate the rate of return by combining the returns of the two sources of funds for investment: debt and equity. The allowed rate of return provides the business with a return on capital to service the interest on its loans and give a return on equity to investors.

The estimate of the rate of return is important for promoting efficient prices in the long term interests of consumers. If the rate of return is set too low, the network business may not be able to attract sufficient funds to be able to make the required investments in the network and reliability may decline. Conversely, if the rate of return is set too high, the network business may seek to spend too much and consumers will pay inefficiently high tariffs.

The NEL requires us to apply the 2018 Instrument[77] to estimate the rate of return for Powerlink and estimate a placeholder allowed rate of return of 4.65 per cent (nominal vanilla) for this decision, which will be updated for our final decision on the averaging periods.[78] Powerlink's proposal adopted the 2018 Instrument.[79] Our estimated placeholder rate of return is higher than Powerlink's proposed 4.44 per cent (nominal vanilla) rate of return, principally due to an increase in interest rates.

Table 4 sets our calculated rate of return that will apply to the first year of the 2022–27 period. A different rate of return will apply for the remaining regulatory years of the period. This is because we will update the return on debt component of the rate of return each year in accordance with the 2018 Instrument to use a 10-year trailing average portfolio return on debt that is rolled forward each year. Hence, 10 per cent of the return on debt is calculated from the most recent averaging period, with 90 per cent from prior periods. We will update the estimate of the rate of return and expected inflation in our final decision.

Our draft decision accepts Powerlink's proposed risk free rate[80] and debt averaging periods because they satisfied the 2018 Instrument.[81]

Attachment 3 provides further detail on our draft decision on the allowed rate of return, debt and equity costs, and expected inflation.

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77 AER, *Rate of return instrument*, December 2018. See https://www.aer.gov.au/networks-pipelines/guidelines-schemes-models-reviews/rate-of-return-guideline-2018/final-decision

78 The legislative amendments to replace the (previous) non-binding Rate of Return Guidelines with a binding legislative instrument were passed by the South Australian Parliament in December 2018. See, Statutes Amendment (National Energy Laws) (Binding Rate of Return Instrument) Act 2018 (SA). NGL, Chapter 2, Part 1, division 1A; NEL, Part 3, division 1B.

79 Powerlink, *Revenue Proposal 2023-27*, January 2021, p. 116.

80 This is also known as the return on equity averaging period.

81 AER, *Rate of return instrument*, December 2018, clauses 7–8, 23–25, 36.

Table 4 AER's draft decision on Powerlink's rate of return (nominal per cent)

	Previous regulatory control period (2017–22)	Powerlink's initial proposal (2022–27)	AER's draft decision (2022–27)	Allowed return over regulatory control period
Nominal risk free rate	2.85%	0.82%	1.53%[a]	
Market risk premium	6.5%	6.1%	6.1%	
Equity beta	0.7	0.6	0.6	
Return on equity (nominal post–tax)	7.4%	4.48%	5.19%	Constant (%)
Return on debt (nominal pre–tax)	5.1%[b]	4.42%	4.29%[a]	Updated annually
Gearing	60%	60%	60%	Constant (60%)
Nominal vanilla WACC	6.0%[b]	4.44%	4.65%	Updated annually for return on debt
Expected inflation	2.45%	2.25%	2.25%	Constant (%)

Source: AER analysis; Powerlink, *Revenue Proposal 2023-27*, January 2021, p. 119
(a) Calculated using a placeholder averaging period of 20 business days ending 30 June 2021.
(b) Applied to the first year of the 2017–22 period.

2.2.1 Debt and equity raising costs

In addition to providing for the required rate of return on debt and equity, we provide an allowance for the transaction costs associated with raising debt and equity. We include debt raising costs in the opex forecast because these are regular and ongoing costs, and equity raising costs in the capex forecast because these costs are incurred once and would be associated with funding the particular capital investments.

Powerlink proposes to adopt our approach for estimating equity raising costs, and used a distribution rate of 0.9 (set in the 2018 Instrument).[82] We have updated our estimate for this regulatory control period based on the benchmark approach using updated inputs. This results in zero equity raising costs.

Our draft decision accepts Powerlink's proposal for estimating debt raising costs, which uses an annual rate of 8.50 basis points per annum.[83] Powerlink's proposed value is from an accompanying report by Incenta which supported and applied our current approach for estimate debt raising costs.[84]

Attachment 3 contains our draft decision reasoning on the benchmark calculation of debt raising costs.

82 Powerlink, *Post-Tax Revenue Model*, January 2021.
83 Powerlink, *Revenue Proposal 2023-27*, January 2021, p. 103.
84 Incenta, *Benchmark debt and equity raising costs*, November 2020.

2.2.2 Imputation credits

Our draft decision applies an imputation credits value (gamma) of 0.585 as per the binding 2018 Instrument.[85] Powerlink's proposal adopted the 2018 Instrument for gamma.[86]

2.2.3 Expected inflation

Our estimate of expected inflation is 2.25 per cent, which will be updated for the final decision. It is an estimate of the average annual rate of inflation expected over a five-year period based on the outcome of our 2020 Inflation Review.[87]

2.3 Regulatory depreciation

In our draft decision, we include an amount for the depreciation of Powerlink's asset base (return of capital). Regulated service providers invest in large sunk assets to provide electricity services to consumers. While some of the cost of such assets may be recovered from consumers upfront, a greater proportion is recovered over time. The regulatory depreciation building block is used for this purpose.

In deciding whether to approve the regulatory depreciation allowance proposed by Powerlink, we make determinations on the indexation of the RAB and depreciation building blocks for Powerlink's 2022–27 period.[88]

Our draft decision approves a regulatory depreciation allowance of $946.5 million (nominal) for the 2022–27 period. This is $2.8 million (0.3 per cent) higher than Powerlink's proposed depreciation of $943.7 million, primarily reflecting our decision on the opening RAB (as at 1 July 2022).[89]

For our draft decision on Powerlink's regulatory depreciation, we accept its proposed:

- straight-line depreciation method used to calculate the depreciation amount
- application of the year-by-year tracking approach to implement straight-line depreciation of its existing assets, and its forecast capex
- asset classes and standard asset lives, including the proposed extension of the asset life for the existing asset value in its 'Substations secondary systems' asset class.

Table 5 shows our draft decision on Powerlink's depreciation for the 2022–27 period. Further detail on our draft decision on depreciation is set out in Attachment 4.

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85 AER, *Rate of return instrument*, December 2018, clause 27.

86 Powerlink, *Revenue Proposal 2023-27*, January 2021, p. 118.

87 AER, *Final position, Regulatory treatment of inflation*, December 2020.

88 NER, cll. 6A.5.4 and 6A.14.1.

89 Our draft decision also reflects our draft decision updates to expected inflation and the rate of return and its effect on the projected RAB over the 2022–27 period.

Table 5 AER's draft decision on Powerlink's regulatory depreciation for the 2022–27 period ($ nominal, million)

	2020–21	2021–22	2022–23	2023–24	2024–25	Total
Straight-line depreciation	326.9	338.6	348.7	356.4	364.9	1,735.5
Less: inflation indexation on opening RAB	157.1	157.7	158.6	158.1	157.4	789.0
Regulatory depreciation	**169.8**	**180.9**	**190.1**	**198.3**	**207.4**	**946.5**

Source: AER analysis.

2.4 Capital expenditure

Capital expenditure (capex) refers to the investment in assets to provide services. This investment mostly relates to assets with long lives and these costs are recovered over several regulatory periods. However, on an annual basis, the financing cost and depreciation associated with these assets are recovered (return on, and of, capital) as part of the building blocks that form part of Powerlink's total revenue requirement.

Our draft decision is to accept Powerlink's forecast capex of $863.9 million ($2021–22) for the 2022–27 period. Our draft decision is $27.4 million (3.1 per cent) lower than Powerlink's actual/estimated total net capex of $891.3 million for the 2017–22 period, which itself is $1.8 million (0.2 per cent) lower than we approved for the same period.[90] Table 6 sets out Powerlink's forecast capex for the period.

Table 6 Powerlink's forecast capex for the 2022–27 period ($2021–22, million)

	2022-23	2023-24	2024-25	2025-26	2026-27	Total
Powerlink's proposal	190.9	209.4	157.2	152.4	154.0	863.9

Source: Powerlink, *Revenue proposal 2023–27*, January 2021, p. viii.
Note: Numbers may not add up due to rounding.

Figure 7 shows our capex draft decision compared to Powerlink's proposal, past forecast expenditure and past actual expenditure.

We undertook a targeted review of Powerlink's capex forecast. Replacement capex comprises the largest single category of capex, accounting for $674.8 million (78.1 per cent) of total forecast capex. This was the focus of our review, particularly transmission lines and tower refurbishment, which are a significant part of the replacement work over the next five years.

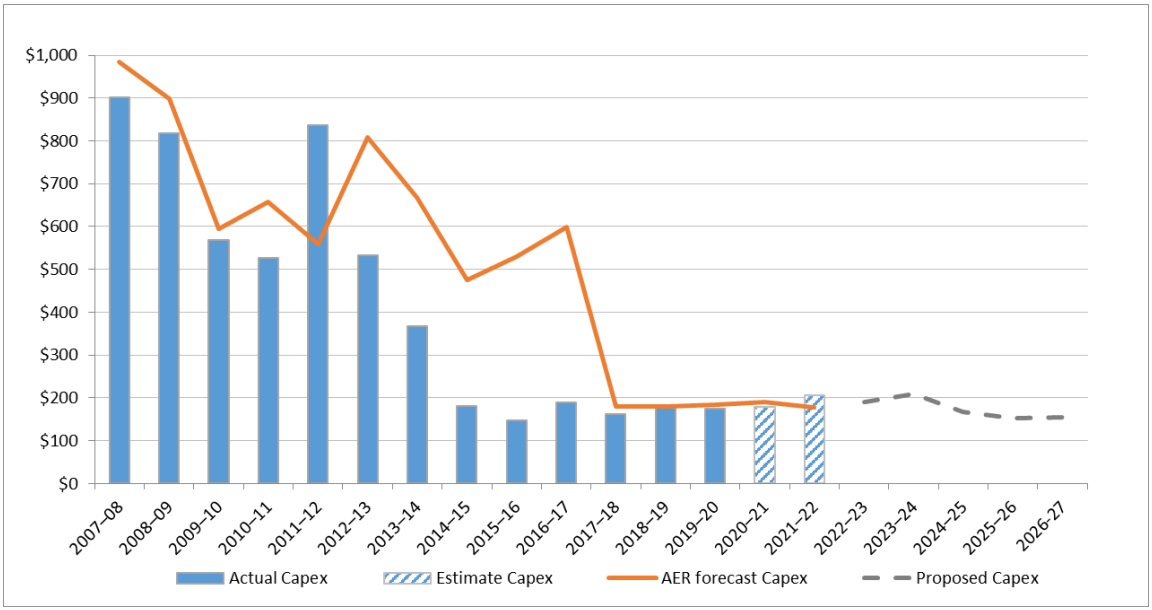
We found that Powerlink's capex forecasting methodology is a significant improvement on the methodology used for the 2017–22 period. Powerlink has moved towards using risk cost based analysis to support its economic modelling and provided a bottom-up replacement capex forecast for over 70 per cent of its proposed capex. The balance of

[90] Powerlink, *Draft revenue proposal overview – 2022/23 – 2026/27 regulatory period*, September 2020, p. iii.

the proposed replacement capex is based on the use of the replacement expenditure (repex) model and trend forecasts.

Powerlink's risk cost based analysis and supporting economic modelling are a significant step forward. We consider Powerlink's models are well developed and generally provide a reasonable assessment of the expected benefits of the proposed investment.

Figure 7 Historical and forecast capex over time ($2021–22, million)



Source: AER, *Final decision PTRM for 2017–22*; Powerlink, *2022–27 PTRM*, January 2021.

While overall, the capex proposal appears reasonable, we have identified scope for further improvement in the repex asset management approach. We consider that Powerlink's asset management, particularly in relation to transmission lines repex, should encompass a more targeted economic risk based practice.

We have discussed our concerns with Powerlink. In response, Powerlink acknowledged our concerns and has agreed to undertake a review of its asset reinvestment practices, report on the results of the review to the public and implement the results of the review over the remainder of the 2022–27 period. The scope of the review will address both the prudency and efficiency aspects of network asset reinvestments. Powerlink has also agreed to pass on to consumers any gains that are identified as part of the review.[91]

We are supportive of Powerlink's commitment because of its past improvement in asset management practices that have led to considerable reductions in capex over time, strong and constructive consumer engagement that led it to reduce its proposed capex in the 2022–27 period, and consumer support for Powerlink's overall revenue proposal. The review and its implementation should align Powerlink's approach with industry practice, and is likely to reduce transmission line refurbishment spending

[91] Powerlink, *Review of Powerlink's approach to network asset reinvestments*, 8 September 2021.

during this and future regulatory control periods, with consumers benefiting from the resulting RAB reduction.

With due consideration of Powerlink's overall performance across the high-level capex metrics and pending the completion of its review of asset reinvestment practices, we consider that Powerlink's capex forecast provides a reasonable basis for determining the prudent and efficient capex for maintaining the safety, reliability and security of its transmission network.

Powerlink has proposed one contingent project, the Central to North Queensland Reinforcement project, at an estimated capex of $52.3 million ($2021–22). Powerlink considers this is an area where significant increases in demand and energy are plausible during the 2022–27 period. Powerlink agreed to our amendment to the wording of the load-related trigger for the proposed contingent project. Therefore, we consider that Powerlink's proposed contingent project should be classified as a contingent project for the 2022–27 period.

Further detail on our draft decision on capex is set out in Attachment 5.

2.5 Operating expenditure

Operating expenditure (opex) refers to the operating, maintenance and other non-capital expenses incurred in the provision of network and related services. Forecast opex for prescribed transmission services is one of the building blocks we use to determine a service provider's annual total revenue requirement.

Our draft decision is to accept Powerlink's transmission opex forecast of $1,046.4 million ($2021–22)[92], including debt raising costs, for the 2022–27 period. This is because our alternative estimate of $1,068.0 million is not materially different ($21.6 million, or 2.1 per cent, higher) than Powerlink's total opex forecast proposal. Therefore, we consider that Powerlink's total opex forecast satisfies the opex criteria. Our alternative opex estimate compared to Powerlink's proposal is set out in Table 7.

Figure 8 shows Powerlink's updated opex forecast, its past actual opex, our previous regulatory decision and our alternative estimate. The key driver of our higher alternative total opex forecast is Powerlink using a lower forecast of inflation through to June 2022, compared to the more recent higher forecasts of inflation we applied. Further, Powerlink applied a higher productivity growth forecast (0.5 per cent per annum), compared to the industry average growth rate (0.3 per cent per annum) we applied in our alternative estimate. These differences were partially offset by Powerlink including a notional self-insurance premium in its base year opex which was higher than the actual self-insured losses we included in our alternative estimate. Further detail on our draft decision on opex is set out in Attachment 6.

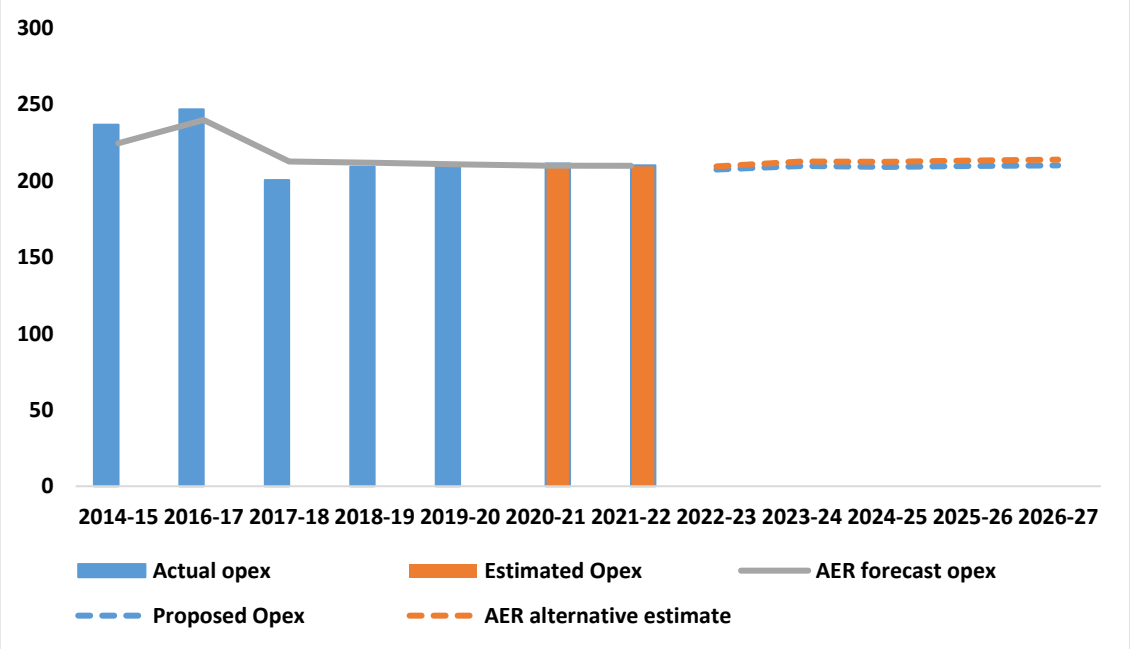
[92] Powerlink, *Revenue proposal 2023–27, Operating Expenditure Model*, January 2021.

Table 7 AER's alternative opex estimate compared to Powerlink's proposal for the 2022–27 period ($2021–22, million)

Opex category	Powerlink's proposal	AER's alternative estimate	Difference (AER *less* Powerlink) ($)
Base (reported opex in 2018–19)	1,030.1	1,044.3	14.2
Base year adjustments	–31.7	–2.7	29.0
Final year increment	–8.7	–9.6	–0.9
Trend: Output growth	11.6	12.3	0.7
Trend: Real price growth	13.1	17.3	4.2
Trend: Productivity growth	–14.7	–9.6	5.1
Step changes	–	–	–
Category specific forecasts	29.7	–	–29.7
Total opex (excluding debt raising costs)	**1,029.4**	**1,052.1**	**22.7**
Debt raising costs	17.0	15.9	–1.1
Total opex (including debt raising costs)	**1,046.4**	**1,068.0**	**21.6**
Percentage difference to proposal			2.1%

Source: Powerlink, *Revenue Proposal 2023–27, Operating Expenditure Model*, January 2021; AER analysis.
Note: Numbers may not add up to total due to rounding. Differences of '0.0' and '–0.0' represent small variances and '–' represents no variance.

Figure 8 Historical and forecast opex over time ($2021–22, million)



Source: Powerlink, *Revenue Proposal 2023–27, Operating Expenditure Model*, January 2021; AER, *Draft decision, Powerlink transmission determination 2022-27, Opex model,* September 2021. AER, *Draft decision, Powerlink transmission determination 2022-27, EBSS model,* September 2021. AER analysis.
Note: Includes debt raising costs.

2.6 Revenue adjustments

Our draft decision on Powerlink's total revenue includes a number of adjustments which are set out below. A majority of the revenue adjustments are due to the application of incentive schemes and allowances which are outlined in section 3.

- Efficiency benefit sharing scheme (EBSS) – Our draft decision is to include EBSS carryover amounts totalling $6.9 million ($2021–22) from the application of the EBSS in the 2017–22 period.[93] This is $1.5 million less than Powerlink's proposal of $8.4 million.[94] The EBSS is intended to provide a continuous incentive for Powerlink to pursue efficiency improvements in opex, and provide for a fair sharing of these between Powerlink and its network users. Consumers benefit from improved efficiencies through lower regulated revenues. Attachment 8 sets out our draft decision on the EBSS.
- Capital expenditure sharing scheme (CESS) – Our draft decision is to apply a CESS revenue decrement of $3.3 million ($2021–22) from the application of the CESS in the 2017–22 period.[95] The CESS incentivises Powerlink to undertake efficient capex throughout the period by rewarding efficiency gains and penalising efficiency losses, each measured by reference to the difference between forecast and actual capex. In the 2017–22 period, although Powerlink under-spent against our capex forecast, the CESS model adjusted for Powerlink's deferral of its proposed office building refit project as well as Powerlink's share of the financing benefits from its under-spend that it accrued through the regulatory control period. Attachment 9 sets out our draft decision on the CESS.
- Demand management innovation allowance mechanism (DMIAM) – Our draft decision is to apply an amount of $3.6 million ($2021–22) for DMIAM to Powerlink in the 2022–27 period. The DMIAM is intended to fund Powerlink for research and development in demand management projects that have the potential to reduce long-term network costs. Projects to be funded under the DMIAM must meet approval criteria, as set out in the DMIAM instrument. Any unspent funding will be returned to consumers in the subsequent regulatory control period. Attachment 13 sets out our draft decision on the DMIAM.

2.7 Corporate income tax

Our draft decision includes the estimated cost of corporate income tax for Powerlink for the 2022–27 period.[96] This enables Powerlink to recover costs associated with tax that is payable during the period. We determined an estimated cost of corporate income tax of $41.0 million (nominal) for Powerlink for the 2022–27 period. This is $15.0 million (58.0 per cent) higher than Powerlink's proposal of $25.9 million, mainly reflecting our

93 NER, cl. 6.5.4(a)(5).
94 Powerlink, *Revenue proposal 2023–27*, January 2021, p. 139.
95 NER, cl. 6A.14.1(5A).
96 NER, cl. 6A.6.4.

draft decision to increase the rate of return on equity for updated market data as required by the 2018 Instrument.[97]

We accept Powerlink's proposed standard tax asset lives for all of its asset classes for the 2022–27 period. These are broadly consistent with the tax asset lives prescribed by the Commissioner of Taxation in Taxation Ruling 2021/3 and/or are the same as the approved standard tax asset lives for the 2017–22 period.[98]

We also accept Powerlink's proposal to use the year-by-year depreciation tracking approach to calculate the forecast tax depreciation of its existing assets. Under this approach, the capex for each year of a regulatory control period is depreciated individually for tax purposes.

Our adjustments to the return on capital and regulatory depreciation building blocks affect revenues which, in turn, impact the tax calculation. The changes affecting revenues are set out in Attachment 1.

Table 8 shows our draft decision on Powerlink's cost of corporate income tax for the 2022–27 period. Attachment 7 sets out our draft decision on corporate income tax.

Table 8 AER's draft decision on Powerlink's cost of corporate income tax for the 2022–27 period ($ nominal, million)

	2020–21	2021–22	2022–23	2023–24	2024–25	Total
Tax payable	12.3	8.2	15.2	31.2	31.8	98.8
Less: value of imputation credits	7.2	4.8	8.9	18.3	18.6	57.8
Net cost of corporate income tax	**5.1**	**3.4**	**6.3**	**13.0**	**13.2**	**41.0**

Source: AER analysis.

97 All else being equal, a higher rate of return on equity will increase the cost of corporate income tax because it increases the return on equity, a component of the taxable income.

98 ATO, *Taxation Ruling TR2021/3 – Income tax: effective life of depreciating assets (applicable from 1 July 2021)*.

3 Incentive schemes and allowances

Incentive schemes are a component of incentive based regulation and complement our approach to assessing efficient costs. They provide important balancing incentives under network determinations, encouraging businesses to pursue expenditure efficiencies while maintaining the reliability and overall performance of its network.

Incentive schemes and allowances that might apply in our network determinations are:

- the efficiency benefit sharing scheme (EBSS)
- the capital expenditure sharing scheme (CESS)
- the service target performance incentive scheme (STPIS)
- the demand management innovation allowance mechanism (DMIAM).

Our draft decision is to apply the EBSS (Attachment 8), CESS (Attachment 9), STPIS (Attachment 10) and DMIAM (Attachment 11) to Powerlink for the 2022–27 period.

Once we make our decision on Powerlink's revenue cap, it has an incentive to provide services at the lowest possible cost, because its returns are determined by its actual costs of providing services. Our incentive schemes encourage Powerlink to make efficient decisions, giving it an incentive to pursue efficiency improvements in opex and capex and to share them with consumers. If Powerlink reduces its costs to below our forecast of efficient costs, the savings are shared with its consumers in future regulatory control periods through the EBSS and CESS.

The STPIS is intended to balance Powerlink's incentive to reduce expenditure with the need to maintain or improve service quality. It achieves this by providing financial incentives to Powerlink to maintain and improve service performance where consumers are willing to pay for these improvements. Powerlink can only retain its rewards for sustained and continuous improvements to the reliability of supply and the service level to the National Electricity Market. Once improvements are made, the benchmark performance targets will be tightened in future years. The STPIS for Powerlink consists of a service component, network capability component and market impact component. We did not accept Powerlink's proposal to change the selection of reference years for setting the market impact component performance targets because this would be inconsistent with the scheme instrument's specification, nor its proposal to adjust the loss of supply event from the historical average as this would result in an outcome that is inconsistent with the NEO and the scheme's objectives.

The DMIAM provides transmission businesses with funding for research and development in demand management projects that have the potential to reduce long-term network costs. Businesses are required to share learnings and insights gained from implementing such projects across industry and consumers. We did not accept Powerlink's post-lodgement request[99] to not apply the DMIAM. While Powerlink's request to undertake research and development under a business as usual

[99] Powerlink, *Application of the demand management innovation allowance mechanism to Powerlink's 2023–27 regulatory period*, 9 July 2021.

manner may have merit, we consider it important that Powerlink's request is publicly consulted on and discussed before we make a decision. We consider that Powerlink's revised proposal should outline its consultation process with stakeholders on how innovation on demand management initiatives will be assimilated into its business as usual operations. As stakeholders' views on the matter were mixed, Powerlink has since committed to engage further with stakeholders and will update its position in its revised proposal.

A National Electricity Law, Rules and Objective

The National Electricity Law (NEL) and National Electricity Rules (NER) provide the regulatory framework governing electricity networks. Our work under this framework is guided by the National Electricity Objective (NEO):[100]

> "…to promote efficient investment in, and efficient operation and use of, electricity services for the long term interests of consumers of electricity with respect to—
>
> (a) price, quality, safety, reliability and security of supply of electricity; and
>
> (b) the reliability, safety and security of the national electricity system."

The NEL requires us to make our decision in a manner that contributes, or is likely to contribute, to achieving the NEO.[101] The focus of the NEO is on promoting efficient investment in, and operation and use of, electricity services (rather than assets) in the long term interests of consumers.[102] This is not delivered by any one of the NEO's factors in isolation, but rather by balancing them in reaching a regulatory decision.[103]

Electricity determinations are complex decisions. In most cases, the provisions of the NER do not point to a single answer, either for our decision as a whole or in respect of particular components. They require us to exercise our regulatory judgement. Where there are choices to be made among several plausible alternatives, we have selected what we are satisfied would result in an overall decision that contributes to the achievement of the NEO to the greatest degree.[104]

Our determinations are predicated on a number of constituent decisions that we are required to make (see Appendix B).[105] In coming to a decision that contributes to the achievement of the NEO, we have considered interrelationships of the constituent components of our draft decision in the relevant Attachments. Examples include:

- Underlying drivers and context which are likely to affect many constituent components of our decision – For example, forecast demand affects the efficient levels of capital expenditure and operating expenditure in the regulatory control period (see Attachments 5 and 6).
- Direct mathematical links between different components of a decision – For example, the value of imputation credits (gamma) has an impact on the appropriate tax allowance, and the benchmark efficient entity's debt to equity ratio has a direct effect on the cost of equity, cost of debt, and overall vanilla rate of return (see Attachments 3 and 7).

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100 NEL, s. 7.

101 NEL, section 16(1)(a).

102 This is also the view of the AEMC. See, for example, AEMC, *Applying the Energy Objectives: A guide for stakeholders*, 1 December 2016, p. 5.

103 Hansard, *SA House of Assembly,* 26 September 2013, p. 7173. See also AEMC, *Applying the Energy Objectives: A guide for stakeholders*, 1 December 2016, pp. 7-8.

104 NEL, s. 16(1)(d).

105 NER, cl. 6A.14.1.

- Trade-offs between different components of revenue – For example, undertaking a particular capital expenditure project may affect the need for operating expenditure, or vice versa (see Attachments 5 and 6).

In general, we consider that the long term interests of consumers are best served where consumers receive a reasonable level of safe and reliable service that they value at least cost in the long run.[106] A decision that places too much emphasis on short term considerations may not lead to the best overall outcomes for consumers once the longer term implications of that decision are taken into account.[107]

There may be a range of economically efficient decisions we could make in a revenue determination, each with different implications for the long term interests of consumers.[108] A particular economically efficient outcome may nevertheless not be in the long term interests of consumers, depending on how prices are structured and risks allocated within the market.[109] There are also a range of outcomes that are unlikely to advance the NEO, or advance the NEO to the degree than others would. For example, we consider that:

- The long term interests of consumers would not be advanced if we encourage over-investment that results in prices so high that consumers are unwilling or unable to efficiently use the network.[110]
- Equally, the long term interests of consumers would not be advanced if allowed revenues result in prices so low that investors do not invest to sufficiently maintain the appropriate quality and level of service, and where consumers are making more use of the network than is sustainable leading to safety, security and reliability concerns.[111]

106 Hansard, *SA House of Assembly,* 9 February 2005, p. 1452.

107 See, for example, the AEMC, *'Applying the Energy Objectives: A guide for stakeholders'*, 1 December 2016, pp. 6-7.

108 Re Michael: Ex parte Epic Energy [2002] WASCA 231 at [143].

109 See, for example, the AEMC, *'Applying the Energy Objectives: A guide for stakeholders'*, 1 December 2016, p. 5.

110 NEL, s. 7A(7).

111 NEL, s. 7A(6).

B Constituent decisions

Our draft decision on Powerlink's transmission revenue determination for the 2022–27 regulatory control period includes the following constituent components:[112]

Constituent component
In accordance with clause 6A.14.1(1)(i) of the NER, the AER's draft decision is not to approve the total revenue cap set out in Powerlink's building block proposal. Our decision on Powerlink's total revenue cap is $3,652.2 million ($ nominal, smoothed) for the 2022–27 regulatory control period. This decision is discussed in Attachment 1 of this draft decision.
In accordance with clause 6A.14.1(1)(ii) of the NER, the AER's draft decision is not to approve the maximum allowed revenue (MAR) for each regulatory year of the regulatory control period set out in Powerlink's building block proposal. Our decision on Powerlink's MAR for each year of the 2022–27 regulatory control period is set out in Attachment 1 of this draft decision.
In accordance with clause 6A.14.1(1)(iii) of the NER, the AER's draft decision is to apply the service component, network capability component and market impact component of Version 5 of the service target performance incentive scheme (STPIS) to Powerlink for the 2022–27 regulatory control period. The values and parameters of the STPIS that are approved by the AER are set out in Attachment 10 of this draft decision.
In accordance with clause 6A.14.1(1)(iv) of the NER, the AER's draft decision on the values that are to be attributed to the parameters for the efficiency benefit sharing scheme (EBSS) that will apply to Powerlink in respect of the 2022–27 regulatory control period are set out in Attachment 8 of this draft decision.
In accordance with clause 6A.14.1(1)(v) of the NER, the AER's draft decision is to approve the commencement and length of the regulatory control period as Powerlink proposed in its revenue proposal. The regulatory control period will commence on 1 July 2022 and the length of this period is five years, expiring on 30 June 2027.
In accordance with clause 6A.14.1(2)(i) of the NER and acting in accordance with clause 6A.6.7(c), the AER's draft decision is to accept Powerlink's proposed total forecast capital expenditure of $863.9 million ($2021–22). The reasons for our draft decision are set out in Attachment 5 of this draft decision.
In accordance with clause 6A.14.1(3)(i) of the NER and acting in accordance with clause 6A.6.6(c), the AER's draft decision is to accept Powerlink's proposed total forecast operating expenditure inclusive of debt raising costs of $1,046.4 million ($2021–22). The reasons for our draft decision are set out in Attachment 6 of this draft decision.
In accordance with clause 6A.14.1(4)(i) of the NER, the AER's draft decision is that the following project is a contingent project for the purpose of this revenue determination for Powerlink: • Central to North Queensland Reinforcement contingent project This is set out in Attachment 5 of this draft decision.

[112] NEL, s. 16(1)(c).

In accordance with clause 6A.14.1(4)(ii) of the NER, the AER's draft decision is that it is satisfied that the capital expenditure of $52.3 million ($2021–22) for the one contingent project as described in Powerlink's revenue proposal reasonably reflects the capital expenditure criteria, taking into account the capital expenditure factors. This is set out in Attachment 5 of this draft decision.

In accordance with clause 6A.14.1(4)(iii) of the NER, the AER's draft decision on the trigger events for the contingent project is set out in Attachment 5 of this draft decision, and includes an amendment to one of the triggers proposed by Powerlink.

In accordance with clause 6A.14.1(5A) of the NER, the AER's draft decision is that version 1 of the capital expenditure sharing scheme (CESS) as set out in the Capital Expenditure Incentives Guideline will apply to Powerlink in the 2022–27 regulatory control period. This is set out in Attachment 9 of this draft decision.

In accordance with clause 6A.14.1(5A) of the NER, the AER's draft decision is that the demand management innovation allowance mechanism (DMIAM) for electricity transmission networks will apply to Powerlink in the 2022–27 regulatory control period. This is set out in Attachment 13 of this draft decision.

In accordance with clause 6A.14.1(5B) and 6A.6.2 of the NER, the AER's draft decision is that the allowed rate of return for the 2022–23 regulatory year is 4.65 per cent (nominal vanilla), as set out in Attachment 3 of this draft decision. The rate of return for the remaining regulatory years 2023–27 will be updated annually because our decision is to apply a trailing average portfolio approach to estimating debt which incorporates annual updating of the allowed return on debt.

In accordance with clause 6A.14.1(5C) of the NER, the AER's draft decision is that the value of imputation credits as referred to in clause 6A.6.4 is 0.585. This is set out in Attachment 3 of this draft decision.

In accordance with clause 6A.14.1(5D) of the NER, the AER's draft decision, in accordance with clause 6A.6.1 and schedule 6A.2, is that the opening regulatory asset base (RAB) as at the commencement of the 2022–27 regulatory control period, being 1 July 2022, is $6,983.4 million ($ nominal). This is set out in Attachment 2 of this draft decision.

In accordance with clause 6A.14.1(5E) of the NER, the AER's draft decision is that the depreciation approach based on forecast capex (forecast depreciation) is to be used to establish the RAB at the commencement of Powerlink's regulatory control period as at 1 July 2027. This is set out in Attachment 2 of this draft decision.

In accordance with clause 6A.14.1(8) of the NER, the AER's draft decision is to approve Powerlink's proposed pricing methodology. This is set out in Attachment 11 of this draft decision.

In accordance with clause 6A.14.1(9) of the NER, the AER's draft decision is to apply the following nominated pass through events to apply to Powerlink for the 2022–27 regulatory control period in accordance with clause 6A.7.3(a1)(5):

- Insurance coverage event
- Insurer credit risk event
- Natural disaster event.

These events have the definitions set out in Attachment 12 of this draft decision.

C List of submissions

We received four submissions in response to the AER's issues paper and Powerlink's 2022–27 transmission revenue proposal, and one submission in response to Powerlink's 9 July 2021 letter to the AER on the demand management innovation allowance mechanism (DMIAM). These are listed below.

Stakeholder	Date
Aurizon Network	25 May 2021
Consumer Challenge Panel, sub-panel 23	24 May 2021
Energy Users Association of Australia	26 May 2021
Powerlink Customer Panel	26 May 2021
Queensland Electricity Users Network (submission on DMIAM)	23 August 2021

D AER's consumer engagement framework

The following table presents the AER's framework for considering consumer engagement in network revenue determinations.[113]

Element	Examples of how this could be assessed
Nature of engagement	• Consumers partner in forming the proposal rather than asked for feedback on service provider's proposal • Relevant skills and experience of the consumers, representatives, and advocates • Consumers provided with impartial support to engage with energy sector issues • Sincerity of engagement with consumers • Independence of consumers and their funding • Multiple channels used to engage with a range of consumers across a service provider's consumer base
Breadth and depth	• Clear identification of topics for engagement and how these will feed into the regulatory proposal • Consumers consulted on broad range of topics • Consumers able to influence topics for engagement • Consumers encouraged to test the assumptions and strategies underpinning the proposal • Consumers were able to access and resource independent research and engagement
Clearly evidenced impact	• Proposal clearly tied to expressed views of consumers • High level of business engagement, e.g. consumers given access to the service provider's CEO and/or Board • Service providers responding to consumer views rather than just recording them • Impact of engagement can be clearly identified • Submissions on proposal show consumers feel the impact is consistent with their expectations

Proof point	• Reasonable opex and capex allowances proposed
	  ○ In line with, or lower than, historical expenditure
	  ○ In line with, or lower than, our top down analysis of appropriate expenditure
	  ○ If not in line with top down, can be explained through bottom up category analysis

[113] AER, *Final decision, Jemena distribution determination 2021–26, Overview, Appendix C,* April 2021, p. 48.

E Shortened forms

Shortened form	Extended form
AEMC	Australian Energy Market Commission
AEMO	Australian Energy Market Operator
AER	Australian Energy Regulator
Capex	Capital expenditure
CESS	Capital expenditure sharing scheme
CPI	Consumer price index
CCP23	Consumer Challenge Panel, sub-panel 23
DMIAM	Demand management innovation allowance mechanism
EBSS	Efficiency benefit sharing scheme
Gamma	Value of imputation credits
Instrument	2018 Rate of Return Instrument
KWh	Kilowatt hours
MAR	Maximum allowed revenue
MWh	Megawatt hours
NEL	National Electricity Law
NEM	National Electricity Market
NEO	National Electricity Objective
NER	National Electricity Rules
Opex	Operating expenditure
PTRM	Post-tax revenue model
RAB	Regulatory asset base
RBA	Reserve Bank of Australia
Repex	Replacement expenditure (capex)
RIN	Regulatory information notice
RFM	Roll forward model
STPIS	Service target performance incentive scheme
WACC	Weighted average cost of capital