DRAFT DECISION
Powerlink Queensland
Transmission Determination

2022 to 2027

Attachment 6
Operating expenditure

September 2021

AUSTRALIAN ENERGY REGULATOR

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Note

This attachment 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

Attachment 8 – Efficiency benefit sharing scheme

Attachment 9 – Capital expenditure sharing scheme

Attachment 10 – Service target performance incentive scheme

Attachment 11 – Pricing methodology

Attachment 12 – Pass through events

Attachment 13 – Demand management innovation allowance mechanism

Contents

6 Operating expenditure

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

This attachment outlines our assessment of Powerlink's proposed total opex forecast for the 2022–27 regulatory control period.

6.1 Draft decision

Our draft decision is to accept Powerlink's transmission opex forecast of $1046.4 million ($2021–22)[1], including debt raising costs, for the 2022–27 regulatory control period. This is because our alternative estimate of $1068.0 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.[2]

Powerlink's opex proposal was well developed and largely consistent with our standard approach to forecasting opex, meaning the extent of our review was less than would have otherwise been the case. A key driver of our higher alternative estimate is the more recent higher forecast of inflation we have used to determine the $2021–22 basis of our opex forecast. Powerlink may wish to update its revised proposal to account for updated inflation forecasts.

The opex forecast for the 2022–27 regulatory control period in our draft decision is:[3]

- $17.5 million ($2021–22) (1.6 per cent) lower than the opex forecast we approved in our final decision for the 2017–22 regulatory control period.
- $2.3 million ($2021–22) (0.2 per cent) lower than Powerlink's actual (and estimated) opex in the 2017–22 regulatory control period. We note that Powerlink's actual (and estimated) opex in the 2017–22 period is $15.2 million ($2021–22)[4] or 1.4 per cent lower than its approved forecast in that period.

Table 6.1 sets out Powerlink's proposal, our alternative estimate that is the basis for the draft decision and the difference between our draft decision and Powerlink's proposal.

1 Powerlink, *Revenue proposal 2023–27, Operating expenditure model*, January 2021.
2 NER, cll. 6A.6.6(c)–(d).
3 Adjusted to real dollar terms based on June quarter CPI.
4 Powerlink, *Revenue proposal 2023–27, EBSS model,* January 2021.

Table 6.1 Comparison of Powerlink's proposal and our draft decision on opex ($ million, 2021–22)

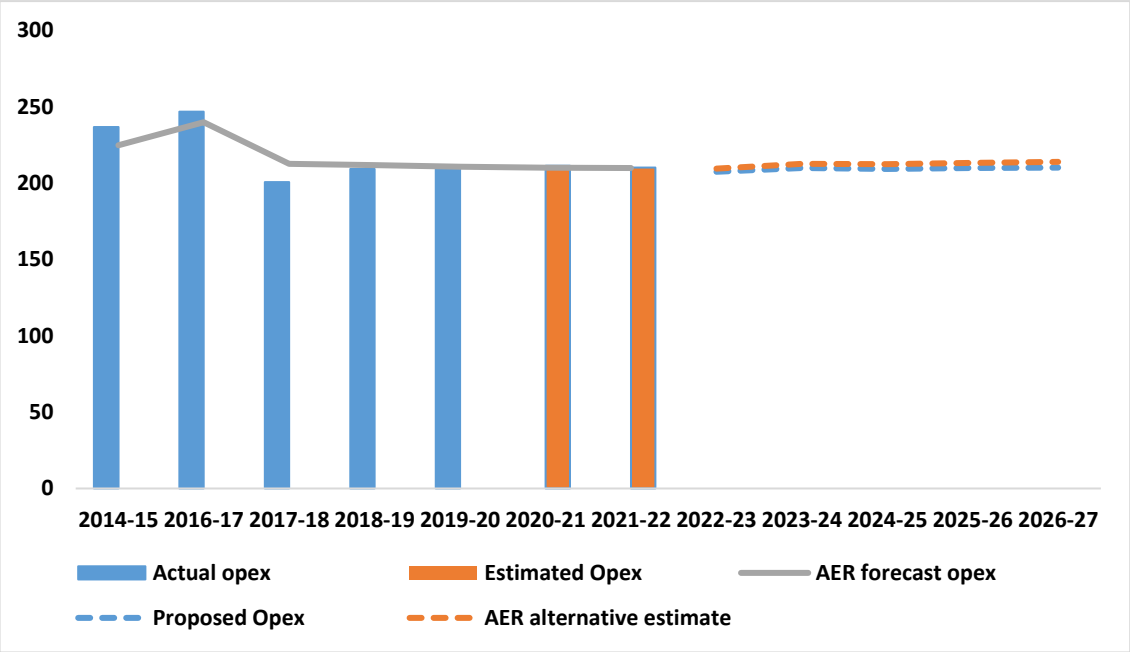
Opex category	Powerlink's proposal	AER alternative estimate	Difference ($)
Base (reported opex in 2018–19)	1030.1	1044.3	14.2
Base year adjustments	–31.7	–2.7	29.0
Final year increment	–8.7	–9.6	–0.9
Trend: Output growth	11.6	12.3	0.7
Trend: Real price growth	13.1	17.3	4.2
Trend: Productivity growth	–14.7	–9.6	5.1
Step changes	–	–	–
Category specific forecasts	29.7	–	–29.7
Total opex (excluding debt raising costs)	**1029.4**	**1052.1**	**22.7**
Debt raising costs	17.0	15.9	–1.1
Total opex (including debt raising costs)	**1046.4**	**1068.0**	**21.6**
Percentage difference to proposal			2.1%

Source: Powerlink, *2023-27 Revenue proposal, 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 6.1 compares Powerlink's opex forecast to its past actual opex, our previous regulatory decisions and our alternative estimate that is the basis for our draft decision.

Figure 6.1 Historical and forecast opex ($ million, 2021–22)



Source: Powerlink, *2023–27 Revenue proposal, 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.

As noted above, a 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 that we included in our alternative estimate.

6.2 Powerlink's proposal

Powerlink used a 'base-step-trend' approach to forecast opex for the 2022–27 regulatory control period in its initial proposal, consistent with our standard approach.

In applying our base-step-trend approach to forecast opex for the 2022–27 period, Powerlink:[5]

- used opex in 2018–19 as the base to forecast ($1030.1 million ($2021–22))
- removed the final year increment from the base year ($8.7 million ($2021–22))
- applied a rate of change comprising of:

[5] Powerlink, *2023–27 Revenue proposal, Operating expenditure model*, January 2021.

- output growth ($11.6 million ($2021–22))
- real price escalation ($13.1 million ($2021–22))
- and productivity growth (–$14.7 million ($2021–22))

- did not add any step changes
- added category specific forecasts for the 2022–27 period ($29.7 million ($2021–22) for Australian Energy Market Commission (AEMC) levy costs
- added forecast debt raising costs ($17.0 million ($2021–22)).

Powerlink's total opex proposal is set out in Table 6.2.

Table 6.2 Powerlink's proposed opex ($ million, 2021–22)

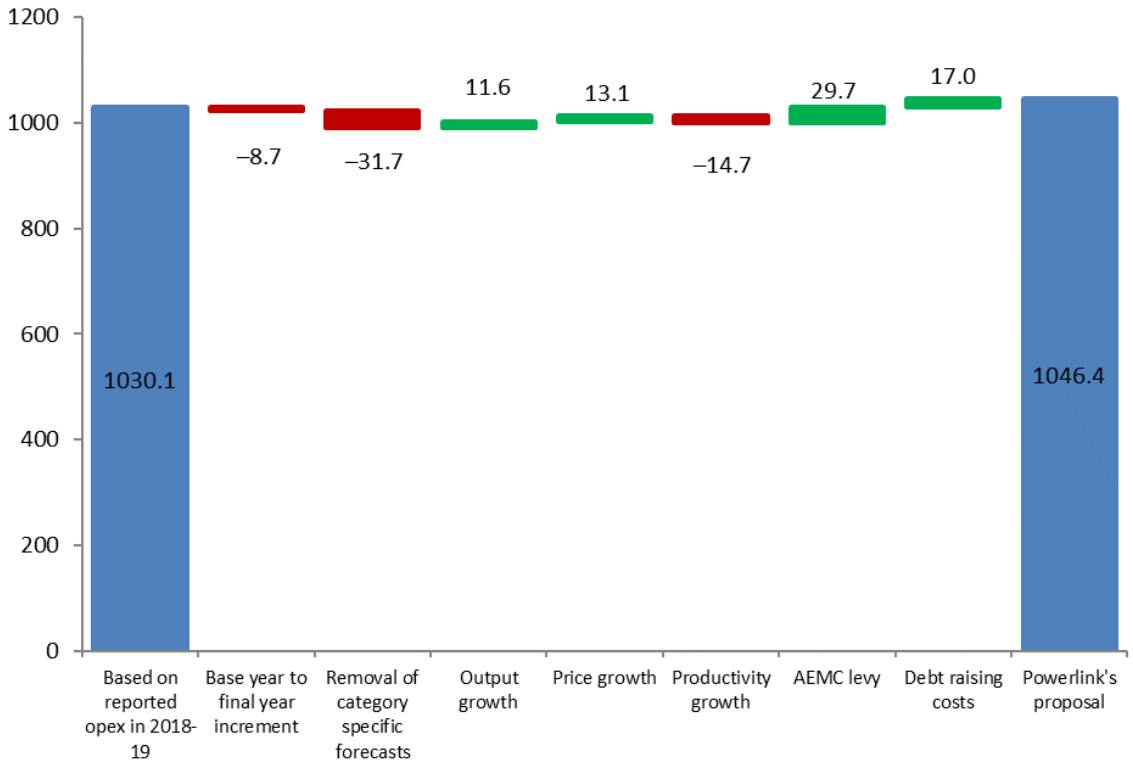
	2022–23	2023–24	2024–25	2025–26	2026–27	Total
Total opex excluding debt raising costs	203.9	206.3	205.8	206.5	206.9	1029.4
Debt raising costs	3.5	3.5	3.4	3.3	3.2	17.0
Total opex	207.4	209.8	209.2	209.9	210.1	1046.4

Source: Powerlink, *2023–27 Revenue proposal, Operating expenditure model*, January 2021.

Note: Numbers may not add up to totals due to rounding.

Figure 6.2 shows the different components of Powerlink's opex proposal ($ million, 2021–22).

Figure 6.2 Powerlink's opex forecast ($ million, 2021–22)



Source: AER analysis

6.2.1 Submissions on Powerlink's proposal

We received four submissions on Powerlink's 2022–27 regulatory proposal. The AER's Consumer Challenge Panel (sub panel 23 (CCP23)), Energy Users' Association of Australia (EUAA), Aurizon Network and Powerlink's Customer Panel provided commentary on various components of Powerlink's proposal. CCP23 and EUAA's submissions included its views on Powerlink's opex proposal.

In its submission, CCP23:[6]

- applied the AER issues Table 7 engagement assessment criteria for Powerlink's consumer engagement and concluded the engagement was collaborative and detailed, and that Powerlink had applied the advice received.
- noted that the proposed base year for opex for the next regulatory period is 2018–19 which is four years from 2022–23, the first year of the next period. Normally it would be inclined to suggest that this proposed base year is too far from the start of the next regulatory period, however, it is supportive of 2018–19 as the base year due to the abnormal circumstances created by COVID-19.
- noted it was satisfied with Powerlink's approach to the allocation of insurance costs.
- noted that the AER's benchmarking report indicates that Powerlink is some distance from the best performing transmission network business, but not the worst.
- lauded Powerlink's decision to set a target of zero real opex growth for the next regulatory period and to deliver a 0.5 per cent opex productivity growth dividend to customers.
- was fully supportive of there being no step changes.
- noted the items indicated as potential pass through events were reasonable and supported Powerlink's proposal to include them as cost pass throughs rather than as opex in its proposal.

In its submission, EUAA:[7]

- complimented Powerlink on their best practice consumer engagement.
- welcomed the 0.5 per cent opex stretch productivity growth target, but highlighted the risk to consumers under the Efficiency Benefit Sharing Scheme (EBSS) if the stretch target of 0.5 per cent productivity improvement is not achieved. EUAA members did not want to see a situation where consumers are paying 70.0 per cent of the increased costs from a failure to meet the stretch target.

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6 CCP23, *Advice to the AER on the Powerlink transmission regulatory proposal for the regulatory determination 1 July 2022 to 30 July 2027*, May 2021, *pp. 1, 56, 60, 62.*

7 EUAA, *Submission, Powerlink QLD revenue proposal 22–27*, May 2021, pp. 1–7.

- commented on Powerlink's productivity trends that performance is generally presented in relative terms – how Powerlink compares with the other networks – rather than in absolute terms. EUAA noted the problem with the former approach is that Powerlink's performance can be seen as good if it is similar to other transmission network service providers (TNSP) even if all are collectively performing poorly.
- welcomed Powerlink's approach of no step changes and the decision to commit to top down productivity improvements to achieve their opex target.

We have taken these submissions, and any other concerns stakeholders identified into account in developing the positions set out in this draft decision.

6.3 Assessment approach

Our role is to decide whether to accept a business' total opex forecast. We are to form a view about whether a business' forecast of total opex 'reasonably reflects the opex criteria'.[8] In doing so, we must have regard to the opex factors specified in the National Electricity Rules (NER).[9]

The Expenditure forecast assessment guideline (the Guideline), together with an explanatory statement, sets out our assessment approach in detail.[10] While the Guideline provides for greater regulatory predictability, transparency and consistency, it is not mandatory. However, if we make a decision that is not in accordance with the Guideline, we must state the reasons for departing from the Guideline.[11]

Our approach is to assess the business' forecast opex over the regulatory control period at a total level, rather than to assess individual opex projects. To do so, we develop an alternative estimate of total opex using a 'top-down' forecasting method, known as the 'base-step-trend' approach.[12] We compare our alternative estimate with the business' total opex forecast to form a view on the reasonableness of the business' proposal. If we are satisfied the business' forecast reasonably reflects the opex criteria, we accept the forecast.[13] If we are not satisfied, we substitute the business' forecast with our alternative estimate that we are satisfied reasonably reflects the opex criteria.[14]

In making this decision, we take into account the reasons for the difference between our alternative estimate and the business' proposal, and the materiality of the

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8 NER, cl. 6A.6.6(c).

9 NER, cl. 6A.6.6(e).

10 AER, *Expenditure forecast assessment guideline for electricity transmission*, November 2013; AER, *Expenditure forecast assessment guideline*, *Explanatory statement*, November 2013.

11 NER, cl. 6A.2.3(c).

12 A 'top-down' approach forecasts total opex at an aggregate level, rather than forecasting individual projects or categories to build a total opex forecast from the 'bottom up.'

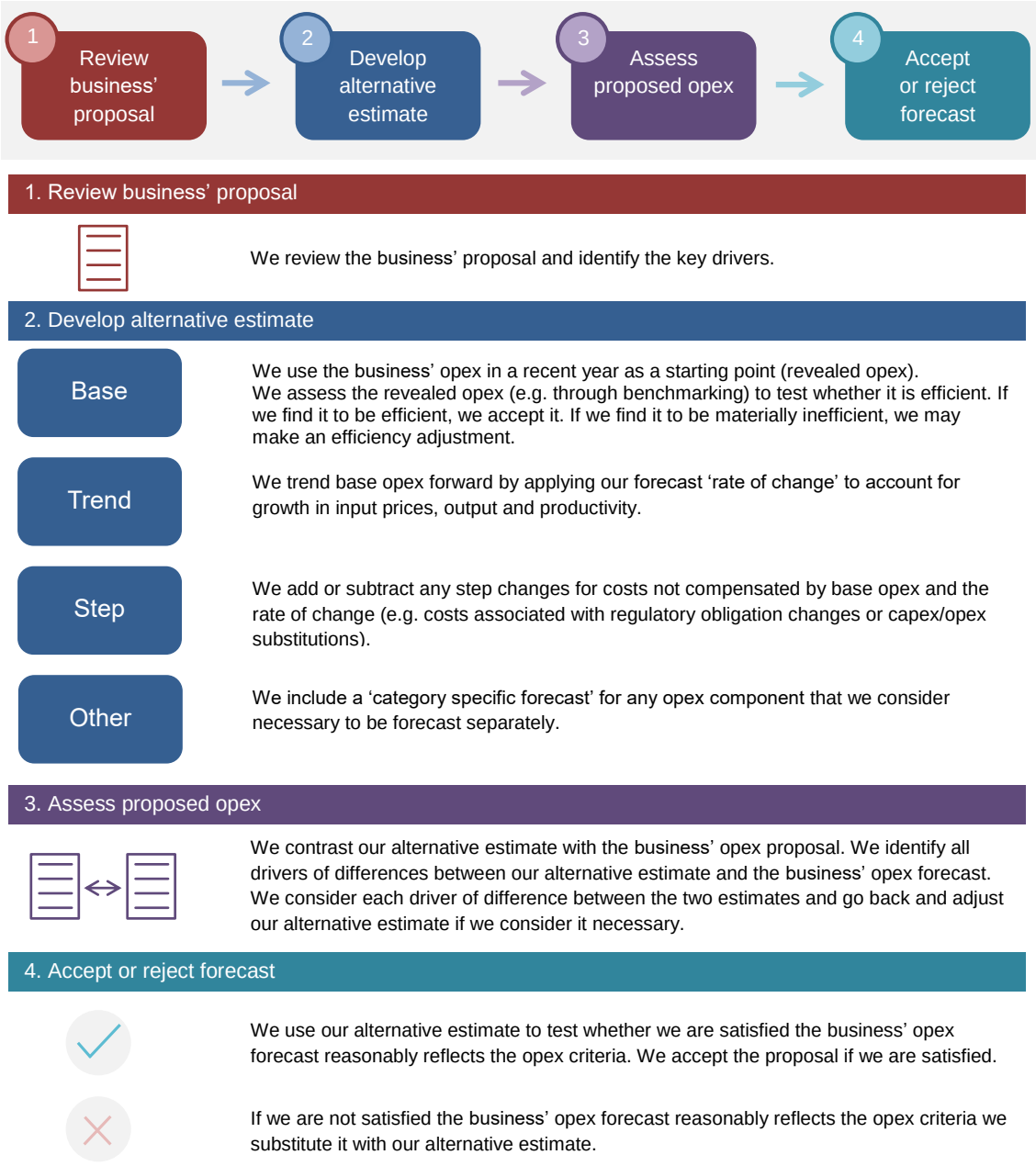
13 NER, cl. 6A.6.6(c).

14 NER, cll. 6A.6.6(d) and 6A.14.1(3)(ii).

difference. Further, we take into consideration interrelationships between opex and the other building block components of our decision.[15]

Figure 6.3 summarises the base–step–trend forecasting approach.

Figure 6.3 Our opex assessment approach



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

6.3.1 Interrelationships

In assessing Powerlink's total forecast opex, we took into account other components of its proposal and our determination, including:

- the EBSS carryover—the level of opex used as the starting point to forecast opex (the final year of the current regulatory control period (2017–22)) should be the same as the level of opex used to forecast the EBSS carryover. This consistency ensures that the business is rewarded (or penalised) for any efficiency gains (or losses) it makes in the final year the same as it would for gains or losses made in other years.
- the operation of the EBSS in the 2017–22 regulatory control period, which provided Powerlink an incentive to reduce opex in the base year.
- the impact of cost drivers that affect both forecast opex and forecast capital expenditure (capex). For instance, forecast labour price growth affects forecast capex and our forecast price growth used to estimate the rate of change in opex.
- the approach to assessing the rate of return, to ensure there is consistency between our determination of debt raising costs and the rate of return building block.

6.4 Reasons for draft decision

Our draft decision is to accept Powerlink's proposal for a total opex forecast of $1046.4 million ($2021–22), including debt raising costs, for the 2022–27 regulatory control period.[16]

Our alternative estimate of total opex ($1068.0 million) is higher than Powerlink's forecast opex ($1046.4 million). Therefore, we are satisfied that Powerlink's proposal satisfies the opex criteria.[17]

Table 6.1 sets out Powerlink's proposal, our alternative estimate that is the basis for the draft decision and key differences.

The main drivers for the differences are set out in section 6.1 and we discuss the components of our alternative estimate below. Full details of our alternative estimate are set out in our opex model, which is available on our website.

6.4.1 Base opex

This section provides our view on the prudent and efficient level of base opex that we consider Powerlink would need for the safe and reliable provision of services over the 2022–27 regulatory control period.

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16 Powerlink, *Revenue proposal 2023–27*, January 2021, p. 77.

17 NER, cll. 6A.6.6(c)–(d).

Powerlink proposed a base year of 2018–19 and base year opex of $206.0 million ($2021–22) or $1030.1 million over the five years of the next regulatory control period. In our alternative estimate we also used 2018–19 as the base year but included base year opex of $208.9 million ($2021–22) or $1044.3 million over five years to form our alternative estimate of forecast opex.

Our higher estimate is due to using updated consumer price index (CPI) index values compared to those Powerlink used. For 2020–21, we used the actual headline June 2021 CPI figure published by the Australian Bureau of Statistics (ABS), which was released after Powerlink submitted its proposal.[18] For 2021–22, we used the inflation forecast for the year to June 2022 in the Reserve Bank of Australia's (RBA) August 2021 *Statement on monetary policy*.[19] This was also published after Powerlink submitted its proposal.

This is partially offset by Powerlink including a notional self-insurance premium ($1.59 million ($2021–22))[20] in its base year opex, whereas our alternative estimate includes the actual self-insured losses ($0.9 million) incurred.[21]

6.4.1.1 Base year

Powerlink proposed 2018–19 (year two of the 2017–22 regulatory control period) as the base year to forecast its opex over the 2022–27 regulatory control period. Powerlink stated that this best reflects a typical year of operations and does not include any COVID-19 cost impacts the business experienced in 2019–20 and 2020–21.[22]

CCP23 noted that although 2018–19 is four years from 2022–23 (year one of the 2022–27 period), it is likely to be the second lowest year for opex from the 2017–22 period, and due to abnormal circumstances created by COVID-19, it is therefore supportive of this being the chosen base year.[23]

We consider 2018–19 to be an appropriate base year. While there will be year to year fluctuations in reported opex over the current regulatory period, due to the interaction with the EBSS we do not have concerns with the choice of base year, provided we find Powerlink's opex in the base year to be efficient.

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18 ABS, *6401.0 Consumer Price Index, Australia*, June 2021.

19 RBA, *Statement on monetary policy*, August 2021.

20 Powerlink, *2023–27 Revenue proposal, Operating expenditure model*, January 2021.

21 Powerlink, *Response to information request AER IR005 – Self Insurance Reconciliation*, 19 May 2021.

22 Powerlink, *Revenue proposal 2023–27,* January 2021, p. 84.

23 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. 56.*

6.4.1.2 Efficiency of base opex

As outlined in section 6.3, and in the Guideline, our standard approach for forecasting opex is to use a revealed cost approach.[24] This is because opex is largely recurrent and stable at a total level. Where a transmission business is responsive to the financial incentives under the regulatory framework, the actual level of opex it incurs should provide a good estimate of the efficient costs required for it to operate a safe and reliable network and meet its relevant regulatory obligations.

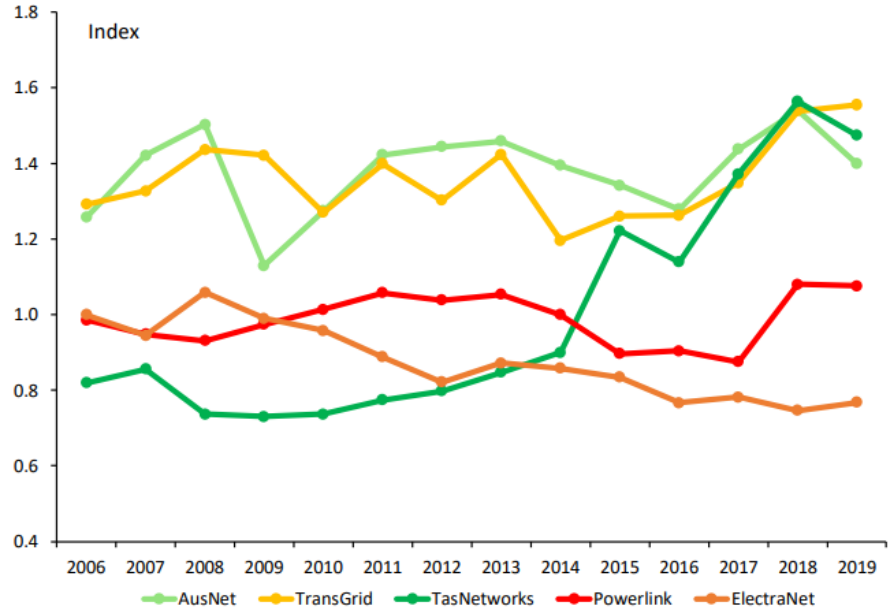
In assessing base opex efficiency, we consider a range of information including Powerlink's actual opex over time and the benchmarking analysis we undertake. The benchmarking analysis is limited by the small sample size of transmission businesses in the National Electricity Market (NEM), and the limited international data available, among other things. It also does not take into account all the operating environment factor differences between the networks. Reflecting this, we have taken the benchmarking into account but not solely relied on it in forming a view on the efficiency of Powerlink's 2018–19 estimated opex.

Analysis of Powerlink's revealed costs, as illustrated in Figure 6.1, shows a relatively stable trend in the current regulatory control period. Powerlink's total actual and estimated opex over the current regulatory control period, is $15.2 million ($2021–22) or 1.4 per cent lower than our approved forecast for this period. Powerlink's chosen base year 2018–19 also has the second lowest costs for the total actual and estimated opex for the current period. Further, Powerlink's actual and estimated opex in the current regulatory control period is 9.9 per cent lower than in the 2012–17 regulatory control period.

Figure 6.4 illustrates that Powerlink's opex has been relatively inefficient historically over the 2006–19 period against its peers as measured by the opex multilateral partial factor productivity (MPFP) benchmarking. Powerlink's opex MPFP performance has improved significantly since 2015 relative to its historic performance, however, over this period other TNSP's have also improved their opex efficiency, so Powerlink's improved performance has not seen it narrow the gap to its peers. The ongoing gap between Powerlink and the three more efficient TNSP's historically suggests some level of inefficiency in Powerlink's base opex, although as noted this benchmarking is limited by some factors.

[24] AER, *Expenditure forecast assessment guideline - transmission,* November 2013, p. 22.

Figure 6.4 Opex MPFP index, 2006–19



Source: AER, *2020 transmission network service provider benchmarking report,* November 2020, p. 23.

Powerlink's multilateral total factor productivity (MTFP) results show its productivity increased from 2018 to 2019 with its overall ranking of all TNSP's improving from fifth to fourth place in this period.[25] However as the MTFP considers both opex and capital inputs, we rely more heavily on Powerlink's opex MPFP results for our assessment of base opex.

Powerlink's partial performance indicators (PPI) generally saw improved performance over its 2014–15 results (its previous base year). In terms of total cost[26] per end user, Powerlink was the second-highest performer for most of the 2006–19 period, and in terms of total cost per km of transmission circuit length it was generally the second or third best performer over the same period.[27]

Powerlink engaged HoustonKemp to provide an independent review of their relative performance, based on the AER's 2020 Benchmarking Report. HoustonKemp concluded that Powerlink, both in absolute and trend terms, were operating relatively efficiently when compared to their peers.[28] Powerlink further stated that the improvement in its opex productivity performance in the current regulatory control

[25] AER, *2020 Transmission network service provider benchmarking report,* November 2020, p. 21.

[26] Total costs are made up of opex and asset costs (the return on and of capex).

[27] AER, *2020 Transmission network service provider benchmarking report,* November 2020, pp. 24–28.

[28] Powerlink, *Appendix 4.01 – HoustonKemp Efficiency of Powerlink's Base Year Operating Expenditure Report,* January 2021, p. 26.

period was a result of an opex reduction of approximately 7.0 per cent from the 2012–17 to 2017–22 regulatory periods. [29]

EUAA's submission commented on our productivity trends in that performance is generally presented in relative terms — that is, how Powerlink compares with other networks — rather than in absolute terms. EUAA raised concerns that the problem with this approach is that Powerlink's performance can be seen as good if it is similar to other TNSPs, even if all are collectively performing poorly. We note that the opex MPFP and MTFP benchmarking provides information about Powerlink's productivity performance over time and relative to other TNSPs.

Powerlink's opex was subject to the incentives of an ex ante regulatory framework, including the application of the EBSS in the 2017–22 regulatory control period. This gave it a continuous incentive to reduce its opex, including in its proposed base year.

Given these considerations while there may still be some evidence of ongoing inefficiency in Powerlink's base opex, our top down transmission benchmarking tools are currently limited. Further, there is also some evidence from the PPIs of improved performance which in part reflects lower opex over time.

We are satisfied that the revealed expenditure is not materially inefficient and that it is appropriate to use 2018–19 opex as the starting point for forecasting opex for the 2022–27 regulatory control period.

6.4.2 Rate of change

Having determined an efficient starting point, or base opex, we trend it forward to account for the forecast growth in prices, output and productivity. We refer to this as the rate of change.[30]

In its regulatory proposal, Powerlink stated that its forecast rate of change is a function of the forecast change in network outputs, changes in real input costs and changes in productivity. Powerlink stated that its approach to forecasting the rate of change was consistent with the Guideline.[31]

The rate of change proposed by Powerlink contributes $10.0 million ($2021–22), or 1.0 per cent, to Powerlink' proposed total opex forecast of $1046.4 million. This equates to opex increasing on average by around 0.3 per cent each year in the next regulatory control period.[32]

We have included a rate of change that increases opex, on average, by 0.5 per cent each year in our alternative estimate. Our higher alternative estimate reflects that we have included higher labour price growth forecasts and a lower productivity growth

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29 Powerlink, *Revenue proposal 2023–27,* January 2021, p. vi.

30 AER, *Expenditure forecast assessment guideline - transmission*, November 2013, pp. 23–24.

31 Powerlink, *Revenue proposal 2023–27*, January 2021, p. 92.

32 Powerlink, *2023–27 Revenue proposal, Operating expenditure model*, January 2021.

forecast that reflects the industry average. We have set out in Table 6.3 both Powerlink's proposal, and our alternative estimate for each component of the rate of change. We then set out the reasons for our forecast below.

We received two submissions, from CCP23 and the EUAA, relating to the opex rate of change. We have considered these submissions and discuss them below.

Table 6.3 Forecast rate of change, per cent

	2022–23	2023–24	2024–25	2025–26	2026–27
Powerlink' proposal					
Price growth	0.27	0.36	0.60	0.80	0.48
Output growth	0.25	1.36	–0.38	0.07	0.20
Productivity growth	0.50	0.50	0.50	0.50	0.50
Overall rate of change	0.02	1.22	–0.28	0.37	0.18
AER alternative estimate					
Price growth	0.52	0.52	0.65	0.67	0.44
Output growth	0.25	1.36	–0.38	0.07	0.20
Productivity growth	0.31	0.31	0.31	0.31	0.31
Overall rate of change	**0.46**	**1.58**	**–0.05**	**0.43**	**0.32**
Overall difference	**0.44**	**0.36**	**0.24**	**0.05**	**0.15**

Source: Powerlink, *2023–27 Revenue proposal, Operating expenditure model*, January 2021; AER analysis.

Note: Differences of '0.0' and '–0.0' represent small variances and '–' represents no variance.

6.4.2.1 Forecast price growth

We have included forecast average annual real price growth of 0.6 per cent in our alternative opex estimate. This compares to Powerlink's proposed average annual price growth of 0.5 per cent.[33] This increases our alternative estimate of total opex by $17.3 million ($2021–22), as compared to the $13.1 million proposed by Powerlink.[34]

Our real price growth forecast is a weighted average of forecast labour price growth and non-labour price growth:

- to forecast labour price growth we have used the forecast of growth in the wage price index (WPI) for the Queensland electricity, gas, water and waste services (utilities) industry. Specifically, we have used an average of forecasts from our

[33] Powerlink, *Revenue proposal 2023–27*, January 2021, p. 92.

[34] Powerlink, *Revenue proposal 2023–27*, January 2021, p. 93.

consultant Deloitte and the BIS Oxford forecasts submitted by Powerlink.[35] Because it did not have the Deloitte forecasts we have used, Powerlink instead used Deloitte's forecasts of the Australian utilities industry that we published with our draft decisions for the Victorian distributors for its second WPI forecast.[36]

- both we and Powerlink applied a forecast non-labour real price growth rate of zero[37]
- both we and Powerlink applied benchmark input price weights of 70.4 per cent and 29.6 per cent for labour and non-labour, respectively.[38]

Consequently, we and Powerlink have applied the same approach to forecast price growth. The differences between our real price growth forecasts and Powerlink's is that we have used updated forecasts for WPI growth from Deloitte that are specific to the Queensland utilities industry.[39] Both we and Powerlink added the impact of the legislated increases in the superannuation guarantee, which is not captured in the WPI. We have shown these differences in Table 6.4 below.

35 Powerlink, *Revenue proposal 2023–27*, January 2021, p. 109.
36 Powerlink, *Revenue proposal 2023–27*, January 2021, p. 107.
37 Powerlink, *Revenue proposal 2023–27*, January 2021, p. 95.
38 Powerlink, *Revenue proposal 2023–27*, January 2021, p. 95.
39 Deloitte Access Economics, *Wage Price Index forecasts*, 23 June 2021, p. xii.

Table 6.4 Forecast labour price growth, per cent

	2022–23	2023–24	2024–25	2025–26	2026–27
Powerlink proposal					
Deloitte	–0.8	–0.5	–0.1	0.5	0.5
BIS Oxford Economics	0.6	0.5	0.8	0.8	0.9
Average, excluding superannuation guarantee increases	–0.1	0.0	0.4	0.6	0.7
SG increase	0.5	0.5	0.5	0.5	–
Average, including superannuation guarantee increases	**0.4**	**0.5**	**0.9**	**1.1**	**0.7**
AER draft decision					
Deloitte	–0.1	0.0	0.0	0.1	0.4
BIS Oxford Economics	0.6	0.5	0.8	0.8	0.9
Average, excluding superannuation guarantee increases	0.2	0.2	0.4	0.4	0.6
SG increase	0.5	0.5	0.5	0.5	–
Average, including superannuation guarantee increases	**0.7**	**0.7**	**0.9**	**0.9**	**0.6**
Difference	**0.4**	**0.2**	**0.1**	**–0.2**	**–0.1**

Source: Powerlink, *2023–27 Revenue proposal,* January 2021, p. 109; AER analysis.

Note: Differences of '0.0' and '–0.0' represent small variances and '–' represents no variance.

CCP23 stated that Powerlink's approach to forecasting price growth is reasonable and noted that the modest average annual real wage price growth 0.7 per cent is 'generally in line with the current low wage growth environment across the Australian economy'.[40]

6.4.2.2 Forecast output growth

We have included forecast average annual output growth of 0.3 per cent in our alternative opex estimate. Powerlink also forecast average annual output growth of 0.3 per cent.[41] This increases our alternative estimate of total opex by $12.3 million ($2021–22), instead of $11.6 million as proposed by Powerlink.[42] The increase in total opex due to output growth in our alternative estimate is higher than in Powerlink's forecast because we have applied output growth to a higher base opex amount.

[40] 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. 62.

[41] Powerlink, *Revenue proposal 2023–27*, January 2021, p. 92.

[42] Powerlink, *Revenue proposal 2023–27*, January 2021, p. 93.

We and Powerlink have forecast output growth by:

- forecasting the growth rates for four outputs (customer numbers, circuit line length, energy throughput, and ratcheted maximum demand).
- calculating the weighted average overall output growth rates using the output weights from our opex MPFP benchmarking model presented (see Table 6.6).

We discuss these below.

Forecast growth of the individual output measures

In developing our alternative estimate, we have used the same forecasts of the individual output measures as Powerlink used in its opex forecast (see Table 6.5).

Table 6.5 Forecast growth in individual output measures, per cent

	2022–23	2023–24	2024–25	2025–26	2026–27
Customer numbers:	1.2	1.2	1.2	1.2	1.2
Circuit length	–0.5	–0.0	0.1	–	–
Ratcheted maximum demand	–	1.5	0.4	0.3	0.2
Energy delivered	2.8	6.1	–4.3	–0.6	0.4

Source: Powerlink, *Revenue proposal 2023–27*, January 2021, p. 94.

Regarding the individual output measures, we note:

- **Customer numbers:** Powerlink based its forecast on the aggregate number of customers forecast for the distributors Ergon Energy and Energex as set out in our final decision for the 2020–25 regulatory control period plus Powerlink's directly-connected customers.[43]
- **Circuit length:** Powerlink forecast circuit length to reduce from 14 528 km to 14 472 km to reflect forecast transmission line decommissioning over the period.[44]
- **Ratcheted maximum demand:** Powerlink used the central scenario in the Australian Energy Market Operators (AEMO's) 2020 *Electricity statement of opportunities* and Powerlink's 2020 *Transmission annual planning report* to forecast ratcheted maximum demand. It forecast the maximum demand within Queensland to remain relatively stable. However, it forecast an increase in maximum demand following the commissioning of the Queensland – New South Wales Interconnector (QNI) minor upgrade in 2023–24.[45]

[43] Powerlink, *Revenue proposal 2023–27*, January 2021, p. 94.
[44] Powerlink, *Revenue proposal 2023–27*, January 2021, p. 94.
[45] Powerlink, *Revenue proposal 2023–27*, January 2021, p. 94.

- **Energy delivered:** Powerlink used the central scenario of AEMO's 2020 *Electricity statement of opportunities* and AEMO's 2020 *Integrated system plan* to forecast energy delivered. Powerlink forecast energy delivered within Queensland to reduce slightly. However, overall, it forecast total energy delivered, including exports across QNI, to increase early in the 2022–27 regulatory control period due to increased flows on the QNI as a result of the QNI minor upgrade.[46]

We are satisfied that these forecasts reflect a realistic expectation of the forecast growth in these output measures because they are largely based on forecasts from external sources that have been previously tested and validated.[47]

The output weights that both we and Powerlink have used are in Table 6.6. These are the weights we use in our economic benchmarking of transmission networks.[48]

Table 6.6 Output weights, per cent

Customer numbers	Circuit length	Ratcheted maximum demand	Energy delivered
7.6	52.8	24.7	14.9

Source: AER, *Annual benchmarking report, Electricity TNSPs*, November 2020, p. 2.

Note: Numbers may not add up to 100 per cent due to rounding.

6.4.2.3 Forecast productivity growth

We have included forecast productivity growth of 0.3 per cent per year in our alternative estimate of opex. Powerlink included forecast productivity growth of 0.5 per cent per year in its opex forecast.[49] This reduces our alternative estimate of total opex by $9.6 million ($2021–22). Powerlink's higher productivity growth forecast reduced its opex forecast by $14.7 million.[50]

Our productivity growth forecast reflects our expectation of the opex productivity growth an efficient service provider in the transmission industry can achieve. It reflects historic industry opex productivity growth to the extent we consider past performance to be a good indicator of future performance under a business-as-usual situation.

We have forecast 0.3 per cent productivity growth based on opex partial factor productivity index analysis over the 2006–19 period.[51] We consider this reflects a reasonable expectation of the benchmark productivity that an efficient and prudent transmission network can achieve for the forecast period.

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46 Powerlink, *Revenue proposal 2023–27*, January 2021, p. 94.

47 NER, 6A.6.6(c)(3).

48 AER, *Annual benchmarking report, Electricity transmission network service providers*, November 2020, pp. 3–6.

49 Powerlink, *Revenue proposal 2023–27*, January 2021, p. 96.

50 Powerlink, *Revenue proposal 2023–27*, January 2021, p. 93.

51 Economic Insights, *Economic Benchmarking Results for the Australian Energy Regulator's 2020 TNSP Annual Benchmarking Report*, 15 October 2020, p. 62.

By contrast Powerlink forecast annual productivity growth of 0.5 per cent consistent with its target of no real growth in opex.[52] This is higher than the industry average productivity growth we measured in our 2020 *Annual benchmarking report*.

CCP23 'lauded' Powerlink for both its no real growth in opex approach and its forecast annual productivity growth rate of 0.5 per cent.[53] Similarly, the EUAA 'welcomed' Powerlink's decision to commit to top down productivity improvements to achieve its opex target.[54]

However, the EUAA expressed concern that in the event Powerlink does not achieve the forecast 0.5 per cent productivity growth rate then consumers would have to pay a share of the associated efficiency loss.[55] The EUAA noted that the proposed productivity growth is higher than both Powerlink's past productivity growth and the industry average productivity growth rate. It is true that in the event Powerlink's actual productivity growth rate is less than forecast, network users will pay a share of the measured efficiency loss through higher forecast opex in the regulatory control period commencing in July 2027. However, 100 per cent of the forecast productivity growth is passed on to network users through lower forecast opex in the 2022–27 regulatory control period. Consequently there is a net benefit to network users from a higher productivity forecast as opex will be lower for the five years in the 2022–27 period, even if Powerlink is unable to achieve its forecast efficiencies and opex returns to higher, historical levels in the subsequent regulatory control period.

6.4.3 Step changes

In developing our alternative estimate, we may add (or subtract) step changes for any other costs not captured in base opex or the rate of change that are required for forecast opex to meet the opex criteria. As we explain in the Guideline, we will generally include a step change if we are satisfied it does not double count cost included in other elements of the opex forecast.[56]

Powerlink did not proposed any step changes in its proposed total opex forecast for the 2022–27 regulatory control period.[57] Powerlink's proposal however outlined potential step changes that may result in increased costs in the 2022–27 period, for which it has not sought a regulatory expenditure allowance for.[58]

The potential step changes relate to cyber security, transmission ring-fencing, new fees under the *Nature Conservation Act 1992*, increases in generator technical

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52 Powerlink, *Revenue proposal 2023–27*, January 2021, p. 96.

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. 64.

54 EUAA, *Submission, Powerlink QLD revenue proposal 22–27*, May 2021, p. 6.

55 EUAA, *Submission, Powerlink QLD revenue proposal 22–27*, May 2021, p. 7.

56 AER, *Expenditure forecast assessment guideline for electricity transmission*, November 2013, p. 24.

57 Powerlink, *Revenue proposal 2023–27*, January 2021, p. 98.

58 Powerlink, *Revenue proposal 2023–27*, January 2021, p. 99.

performance standards and increased requirements under the whistle blower and modern slavery legislation. Powerlink stated that in response to customer feedback to seek further improvements in their operating expenditure, it will work to manage these costs within its total forecast opex.[59]

We note that in the Guideline we stated that step changes should not double count the cost of increased regulatory burden over time accounted for by forecast productivity growth. We stated that we will only approve step changes if they demonstrably do not reflect the historic 'average' change in costs associated with changing regulatory obligations. Our starting position, when we consider whether a step change is required in a reset, is that only exceptional events are likely to require explicit compensation as a step change.[60]

CCP23 and EUAA were both fully supportive of Powerlink's approach to not include any step changes.[61]

As Powerlink has not proposed any step changes for the next regulatory control period, we have not included any step changes in our alternative estimate.

6.4.4 Category specific forecasts

Powerlink's proposed category specific forecasts for AEMC levy costs, network support costs and debt raising costs.[62]

We have only included debt raising costs and network support costs in our alternative estimate of total opex as category specific forecasts, which we did not forecast using the base-step-trend approach.

Our reasoning is explained below.

6.4.4.1 Debt raising costs

We have included debt raising costs of $15.9 million ($2021–22) in our alternative estimate. This is $1.1 million lower than the $17.0 million proposed by Powerlink in its forecast.[63]

Debt raising costs are transactions costs incurred each time a business raises or refinances debt. The appropriate approach is to forecast debt raising costs using a benchmarking approach rather than a service provider's actual costs in a single year.

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59 Powerlink, *Revenue proposal 2023–27*, January 2021, p. 99.

60 AER, *Expenditure forecast assessment guideline for electricity transmission*, November 2013, p. 24.

61 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. 6; EUAA, *Submission, Powerlink QLD revenue proposal 22–27*, May 2021, p. 6.

62 Powerlink, *2023–27 Revenue proposal*, January 2021, p. 100.

63 Powerlink, *2023–27 Revenue proposal*, January 2021, p. 82.

This provides consistency with the forecast of the cost of debt in the rate of return building block.

We used our standard approach to forecast debt raising costs, which is discussed further in Attachment 3 to the draft decision.[64]

6.4.4.2 Network support costs

We have included network support costs of $0.0 ($2021–22) in our alternative estimate.

Network support refers to costs associated with non-network solutions used as an efficient alternative to augmentation. Powerlink stated that in the 2022–27 regulatory control period it anticipates that there may be a need to contract with generators and large load operators to provide a contingency tripping service as part of an upgraded scheme to extend Central Queensland to Southern Queensland (CQ–SQ) transfer limits.[65]

Powerlink's proposal included a $0.0 ($2021–22)[66] network support allowance due to uncertainty around potential costs with no contracts in place at present. It noted any actual network support costs incurred during the 2022–27 period will be recovered through pass through arrangements.[67]

Following our assessment of this information we consider this is a reasonable approach to forecast opex associated with network support costs.

6.4.4.3 AEMC levy

We have not included Powerlink's proposed AEMC levy costs of $29.7 million ($2021–22)[68] as a category specific forecast in our alternative estimate of total opex.

The AEMC levy is a cost that Powerlink as a 'transmission authority' in Queensland must pay and is a portion of the Queensland Government's funding commitments to the AEMC. Powerlink already incurs AEMC levy costs. However, Powerlink forecasts higher levies over the 2022–27 regulatory control period than over the current regulatory period.[69]

We consider this is a cost like any other, and changes in levy costs are captured in our trend (as a part of price growth) applied under the base-step-trend approach. Our trend forecast includes an allowance for increases in non-labour price growth by the consumer price index (CPI). We expect some non-labour components in opex will

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64 AER, *Draft decision, Powerlink transmission determination 2022–27, Attachment 3 – Rate of return, September 2021, section 3.3.2.*

65 Powerlink, *Revenue proposal 2023–27*, January 2021, p. 102.

66 Powerlink, *Revenue proposal 2023–27*, January 2021, p. 102.

67 Powerlink, *Revenue proposal 2023–27*, January 2021, p. 102.

68 Powerlink, *Revenue proposal 2023–27*, January 2021, p. 102.

69 Powerlink, *Revenue proposal 2023–27*, January 2021, p. 102.

increase by more than CPI and some less than CPI. To the extent that the AEMC levy rises by more than CPI, we expect this will to an extent be offset by other non-labour costs rising by less than CPI.

We have therefore included the current AEMC levy costs in our alternative estimate in base opex and not included them as a separate category specific forecast.

6.4.5 Assessment of opex factors

In deciding whether we are satisfied the service provider's forecast reasonably reflects the opex criteria we have regard to the opex factors.[70] Table 6.7 summarises how we have taken the opex factors into account in making our draft decision.

Table 6.7 AER consideration of opex factors

Opex factor	Consideration
The most recent annual benchmarking report that has been published under rule 6A.31 and the benchmark operating expenditure that would be incurred by an efficient network service provider over the relevant regulatory control period.	There are two elements to this factor. First, we must have regard to the most recent annual benchmarking report. Second, we must have regard to the benchmark operating expenditure that would be incurred by an efficient transmission network service provider over the period. The annual benchmarking report is intended to provide an annual snapshot of the relative efficiency of each service provider. The second element, that is, the benchmark operating expenditure that would be incurred by an efficient provider during the forecast period, necessarily provides a different focus. This is because this second element requires us to construct the benchmark opex that would be incurred by a hypothetically efficient provider for that particular network over the relevant period. The benchmarking analysis is limited by the small sample size of transmission businesses in the National Electricity Market (NEM), and the limited international data available, among other things. It also does not take into account all the operating environment factor differences between the networks. Noting these limitations, we have taken the benchmarking results into account but not solely relied on it when assessing the efficiency of Powerlink's proposed total forecast opex.
The actual and expected operating expenditure of the transmission network service provider during any proceeding regulatory control periods.	Our forecasting approach uses the service provider's actual opex as the starting point. We have compared several years of Powerlink's actual past opex with that of other service providers as a part of forming a view about whether its revealed expenditure is sufficiently efficient to rely on.
The extent to which the operating expenditure forecast includes expenditure to address the concerns of electricity consumers as identified by the Network Service Provider in the course of its engagement with electricity consumers.	We understand the intention of this particular factor is to require us to have regard to the extent to which service providers have engaged with consumers in preparing

[70] NER, cl. 6A.6.6(e).

Opex factor	Consideration
	their revenue proposals, such that they factor in the needs of consumers.[71] CCP23 concluded that the consumer engagement was collaborative and detailed and that Powerlink had applied the advice received.[72] EUAA complimented Powerlink on their best practice consumer engagement.[73]
The relative prices of capital and operating inputs	We have had regard to multilateral total factor productivity benchmarking when deciding whether or not forecast opex reflects the opex criteria. Our multilateral total factor productivity analysis considers the overall efficiency of networks in the use of both capital and operating inputs with respect to the prices of capital and operating inputs.
The substitution possibilities between operating and capital expenditure.	Some of our assessment techniques examine opex in isolation—either at the total level or by category. Other techniques consider service providers' overall efficiency, including their capital efficiency. We have had regard to several metrics when assessing efficiency to ensure we appropriately capture capex and opex substitutability. In developing our benchmarking models we have had regard to the relationship between capital, opex and outputs.
Whether the operating expenditure forecast is consistent with any incentive scheme or schemes that apply to the network service provider under clauses 6A.6.5, 6A.7.4 or 6A.7.5.	The incentive scheme that applied to Powerlink's opex in the 2017–22 regulatory control period, the EBSS, was intended to work in conjunction with a revealed cost forecasting approach. We have applied our estimate of base opex consistently in applying the EBSS and forecasting Powerlink's opex for the 2022–27 regulatory control period.
The extent the operating expenditure forecast is preferable to arrangements with a person other than the network service provider that, in the opinion of the AER, do not reflect arm's length terms.	Some of our techniques assess the total expenditure efficiency of service providers and some assess the total opex efficiency. Given this, we are not necessarily concerned whether arrangements do or do not reflect arm's length terms. A service provider which uses related party providers could be efficient or it could be inefficient. Likewise, for a service provider that does not use related party providers. If a service provider is inefficient, we adjust their total forecast opex proposal, regardless of their arrangements with related providers.
Whether the operating expenditure forecast includes an amount relating to a project that should more appropriately be included as a contingent project under clause 6A.8.1(b).	This factor is only relevant in the context of assessing proposed step changes (which may be explicit projects or programs). We did not identify any contingent projects in reaching our draft decision.

71 AEMC, *Rule Determination*, 29 November 2012, pp. 101, 115.

72 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. 1.

73 EUAA, *Submission, Powerlink QLD revenue proposal 22–27*, May 2021, p. 1.

Opex factor	Consideration
The most recent Integrated System Plan and any submissions made by AEMO, in accordance with the NER, on the forecast of the Transmission Network Service Provider's required operating expenditure	We have had regard to AEMO's most recent Integrated System Plan and consider this to be consistent with Powerlink's forecast opex.[74]
The extent the network service provider has considered, and made provision for, efficient and prudent non-network alternatives.	We have not found this factor to be significant in reaching our draft decision.
Any relevant project assessment conclusions report required under 5.16.4.	We have not identified any RIT–T project that has been submitted by Powerlink and would impact the total forecast opex. We are unaware of any RIT–T project being submitted by Powerlink.
Any other factor the AER considers relevant and which the AER has notified the service provider in writing, prior to the submission of its revised Revenue Proposal under 6A.12.3, is an operating expenditure factor.	We did not identify and notify Powerlink of any other opex factor.

Source: AER analysis.

[74] Powerlink, *Revenue proposal 2023–27*, January 2021, pp. 5–6.

A. Shortened forms

Shortened form	Extended form
ABS	Australian Bureau of Statistics
AEMC	Australian Energy Market Commission
AEMO	Australian Energy Market Operator
AER	Australian Energy Regulator
Capex	Capital expenditure
CCP23	Consumer Challenge Panel, sub-panel 23
CPI	Consumer price index
CQ–SQ	Central Queensland to Southern Queensland
EBSS	Efficiency benefit sharing scheme
EUAA	Energy Users' Association of Australia
MPFP	Multilateral partial factor productivity
MTFP	Multilateral total factor productivity
NEL	National Electricity Law
NEM	National Electricity Market
NEO	National Electricity Objective
NER	National Electricity Rules
NSP	Network service provider
Opex	Operating expenditure
PPI	Partial performance indicators
PTRM	post-tax revenue model
QNI	Queensland – New South Wales Interconnector
RBA	Reserve Bank of Australia
STPIS	service target performance incentive scheme
TNSP	Transmission network service provider
WPI	Wage price index