

Final decision

Transgrid transmission determination
1 July 2023 to 30 June 2028

Attachment 6 – Operating expenditure

April 2023

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6 Operating expenditure

Operating expenditure (opex) refers to the operating, maintenance and other non-capital expenses incurred in the provision of network 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.

This attachment outlines our assessment of Transgrid's proposed total opex forecast for the 2023–28 regulatory control period (2023–28 period).

6.1 Final decision

Our final decision is to not accept Transgrid's total opex forecast of \$1,184.8 million (\$2022–23), including debt raising costs, for the 2023–28 period.¹ Our alternative estimate of \$1,100.8 million, including debt raising costs, is \$84.1 million (7.1%) lower than Transgrid's revised proposal. Therefore, we consider that Transgrid's total opex forecast does not reasonably reflect the opex criteria.²

The key reason for our relatively lower total opex forecast is that we have only included \$60.8 million of total step changes, as compared to the \$128.8 million proposed by Transgrid. This outcome reflects our assessment that in some cases, we are not satisfied that step changes are prudent and efficient:

- Cyber and critical infrastructure security step change – we have included a lower estimate of required expenditure to remove costs we are not satisfied Transgrid has demonstrated to be prudent and efficient.
- System Security Roadmap step change – we have not included this step change in our alternative estimate of total forecast opex as we are not satisfied that it meets our standard criteria under which we would allow a step change.

Table 6.1 sets out Transgrid's opex revised proposal, our alternative estimate that is the basis for the final decision, and the difference between our final decision and Transgrid's revised proposal. It also includes Transgrid's initial proposal as well as our draft decision.

Table 6.1: Comparison of Transgrid's revised proposal and our final decision on opex (\$million, 2022–23)

	Transgrid's initial proposal	AER's draft decision	Transgrid's revised proposal	AER's final decision alternative estimate	Difference
Based on reported opex in 2021–22	1,092.2	1,026.6	1,024.9	1,024.1	-0.8
Base year adjustments	-111.9	20.4	20.4	14.1	-6.4

¹ Transgrid, *2023-28 Revised Revenue Proposal Opex Forecast Model*, 2 December 2022.

² NER, cl.6A.6.6(c).

	Transgrid's initial proposal	AER's draft decision	Transgrid's revised proposal	AER's final decision alternative estimate	Difference
Base year non-recurrent efficiency gains	-100.8	29.7	72.8	73.1	0.3
2021–22 to 2022–23 increment	8.1	-139.0	-139.0	-137.9	1.1
Remove category specific forecasts	-2.9	-3.2	-3.2	-3.2	-0.0
Trend: Price growth	12.7	21.0	23.1	16.2	-6.9
Trend: Output growth	47.3	46.0	48.1	47.5	-0.6
Trend: Productivity growth	-13.2	-14.2	-14.8	-17.5	-2.7
Total trend	46.8	52.8	56.4	46.1	-10.2
Insurance	30.0	13.8	13.8	13.8	-
Cyber security and critical infrastructure	25.0	13.9	36.3	18.0	-18.3
System security roadmap	-	-	47.6	-	-47.6
ISP Preparatory Activity	2.9	-	-	-	-
Strategic benefit payment	-	-	31.0	29.0	-2.0
Total step changes	57.8	27.7	128.8	60.8	-67.9
Total opex, excluding debt raising costs	989.3	1,015.1	1,161.2	1,077.3	-83.9
Debt raising costs	25.7	23.4	23.7	23.5	-0.2
Total opex, including debt raising costs	1,015.0	1,038.5	1,184.8	1,100.8	-84.1
Percentage difference to Transgrid's revised proposal					-7.1%

Source: Transgrid, *2023–28 Opex Forecast model – Public*, 31 January 2022; Transgrid, *2023-28 Revised Revenue Proposal Opex Forecast Model*, 2 December 2022.; AER analysis.

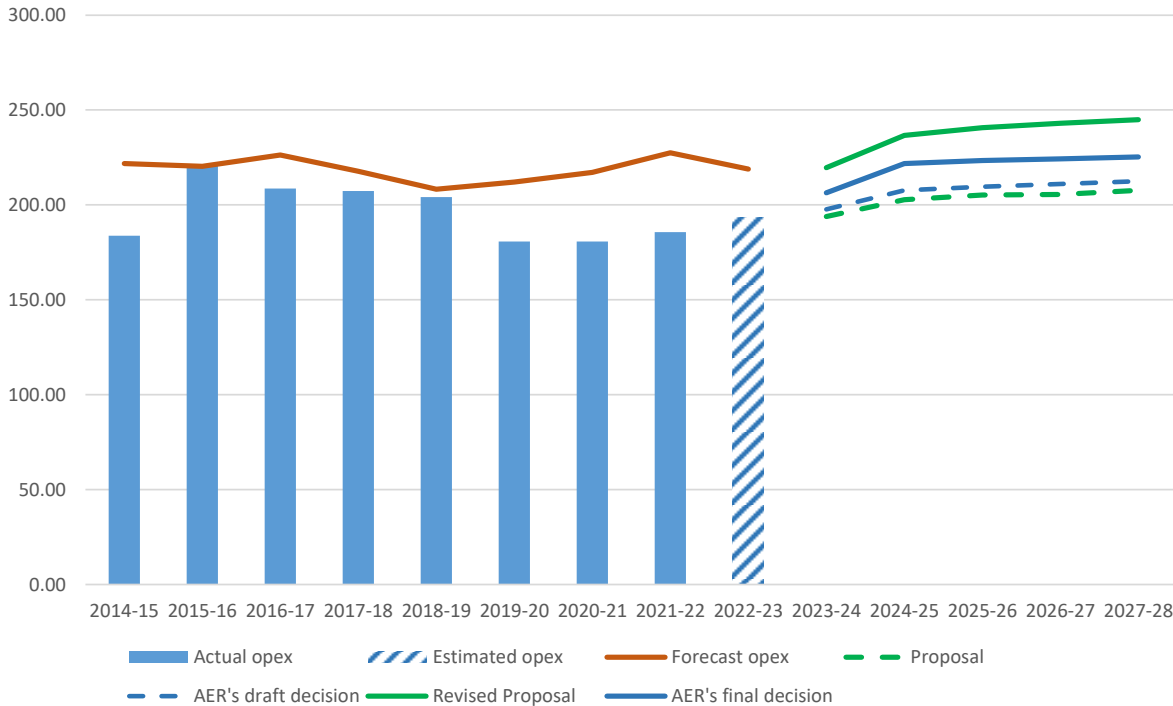
Note: Numbers may not add up to totals due to rounding. Differences of '0.0' and '-0.0' represent small variances and '-' represents no variance.

Figure 6.1 compares the total opex forecast for Transgrid we have included in the final decision for the 2023–28 period (the blue line) to Transgrid's revised total opex proposal (the green line), as well as Transgrid's actual and estimated opex in the previous and current regulatory control period (the blue bars). We have also included the forecasts we approved in past decisions (the orange line), Transgrid's initial proposal for the 2023–28 period (the green dashed line) and our alternative estimate for the draft decision (the blue dashed line).

Our final decision total opex forecast is:

- \$17.0 million (\$2022–23), or 1.6% higher than the opex forecast we approved in our final decision for the 2018–23 regulatory control period³
- \$156.3 million (\$2022–23), or 16.6% higher than Transgrid’s actual (and estimated) opex in the 2018–23 regulatory control period
- \$85.8 million (\$2022–23), or 8.5% higher than Transgrid’s initial proposal
- \$62.2 million (\$2022–23), or 6.0% higher than our draft decision.

Figure 6.1: Historical and forecast opex (\$million, 2022–23)



Source: Transgrid, *Regulatory accounts 2014–15 to 2020–21*; Transgrid, *2023–28 Opex Forecast model – Public*, 31 January 2022; AER, *Transgrid revenue determination, PTRM (multiple periods 2014–18, 2018–22, 2023–28)*; Transgrid, *2023–28 Revised Revenue Proposal Opex Forecast Model*, 2 December 2022; AER analysis.

Note: Includes debt raising costs and movements in provisions. We have removed software as a service opex and added capitalised leases to estimated opex for 2021–22 and 2022–23 to align with accounting standards applied in the 2018–23 final determination (see section 6.4.1.1).

6.2 Transgrid’s revised proposal

Transgrid included total forecast opex of \$1,184.8 million (\$2022–23) in its revised proposal for the 2023–28 period, as set out in Table 6.2. This is 25.5% higher than Transgrid’s actual and estimated opex for the 2018–23 period, 16.7% higher than its initial proposal and 14.1% higher than our draft decision.⁴

³ Difference is calculated based on the opex allowance for the five-year 2018–23 period converted to real 2022–23 dollars using unlagged inflation.

⁴ Comparisons are inclusive of debt raising costs,

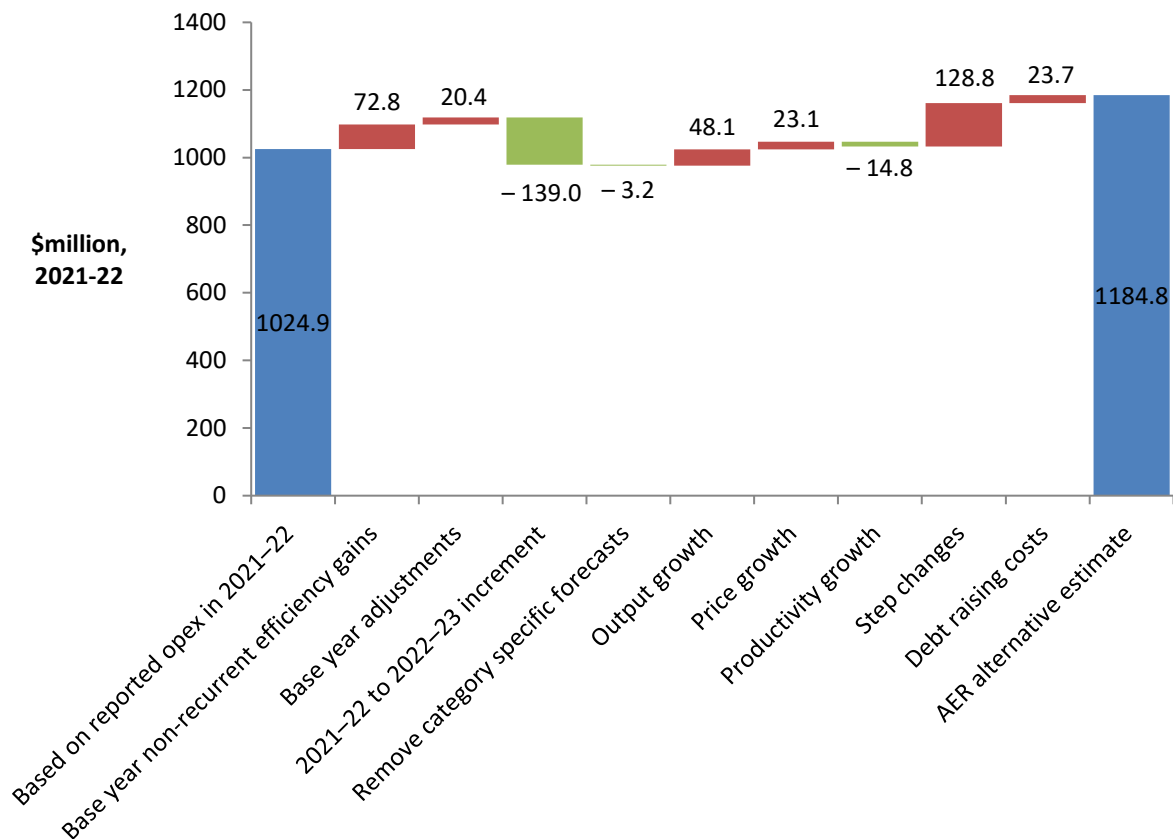
Table 6.2: Transgrid’s proposed opex (\$million, 2022–23)

	2023-24	2024–25	2025–26	2026–27	2027–28	Total
Total opex excluding debt raising costs	215.28	231.82	235.85	238.12	240.12	1,161.2
Debt raising costs	4.38	4.78	4.88	4.83	4.79	23.7
Total opex	219.65	236.60	240.73	242.96	244.91	1,184.8

Source: Transgrid, *2023-28 Revised Revenue Proposal Opex Forecast Model*, 2 December 2022.

Note: Numbers may not add up due to rounding.

In Figure 6.2, we separate Transgrid’s revised forecast opex proposal into its different components.

Figure 6.2: Transgrid’s opex forecast (\$ million, 2022–23)

Transgrid continued to use our standard ‘base-step-trend’ approach to forecast opex for the 2023–28 period in its revised proposal.

In applying our base-step-trend approach to forecast opex for the 2023–28 period, Transgrid:⁵

- used opex in 2021–22 as the base from which to forecast (\$1,024.9 million (\$2022–23))

⁵ Transgrid, *2023–28 Opex Forecast model – 2 Dec 2022*, 31 January 2022.

- added \$72.8 million to base opex to reflect non-recurrent efficiency related to bushfire remediation costs.
- added \$20.4 million to base opex to reflect non-recurrent software as a service (SaaS) costs of \$26.0 million (or \$5.2 million per year) and –\$5.6 million (or –\$1.1 million per year) as an adjustment for capitalised leases
- removed \$139.0 million to reflect the change in opex between 2020–21 and 2022–23
- removed \$3.2 million of network support costs and debt raising costs, accounted as category specific opex
- applied a rate of change comprising of:
 - output growth (\$48.1 million)
 - real price growth (\$23.1 million)
 - productivity growth (–\$14.8 million) of 0.5% per year.
- added four step changes totalling \$128.8 million for:
 - increased insurance premiums (\$13.8 million)
 - cyber and critical infrastructure security costs to comply with new legislation (\$36.3 million)
 - System Security Roadmap, relating to the costs of planning and managing an increasingly complex electricity network and readying the network for 100% renewables penetration (\$47.6 million)
 - strategic benefit payments relating to forecast payments required to be made to private landholders hosting infrastructure for *Project EnergyConnect*, in accordance with the NSW Government’s Strategic Benefit Payments Scheme (\$31.0 million)
- added \$23.7 million of debt raising costs to arrive at total forecast opex of \$1,184.8 million over the 2023–28 period.

6.2.1 Submissions on Transgrid’s revised proposal

We received three submissions on Transgrid’s 2023–28 revised proposal that raised issues related to opex.⁶ These submissions welcomed Transgrid’s improved approach in the lead up to the revised proposal though, overall, they considered that this 2023–28 determination process represents a missed opportunity for Transgrid to build and advance from previously demonstrated capabilities in regard to meaningful consumer engagement.⁷

CCP25 and PIAC questioned new expenditure forecasts that Transgrid included in its revised proposal for System Security Roadmap expenditure. Specifically, they questioned whether

⁶ Energy Users Association of Australia (EUAA) – *Submission – 20 January 2023*, 20 January 2023, Public Interest Advocacy Centre (PIAC), *Submission – 25 January 2023*, 25 January 2023; Consumer Challenge Panel, Sub-panel 25 (CCP25), *Submission – 20 January 2023*, 20 January 2023.

⁷ CCP25, *Submission – 20 January 2023*, 20 January 2023, p. 3; EUAA, *Submission – 20 January 2023*, 20 January 2023, pp. 1–2; PIAC, *Submission – 25 January 2023*, 25 January 2023, p. 1.

Transgrid’s System Security Roadmap costs are justified.⁸ CCP25 and EUAA also raised concerns about Transgrid’s proposed step change for cyber and critical infrastructure.⁹ Specific aspects of submissions are further discussed in section 6.4 below.

6.3 Assessment approach

Our role is to form a view about whether to accept a business’s forecast total opex. Specifically, we must form a view about whether a business’s forecast total opex ‘reasonably reflects the opex criteria’.¹⁰ In doing so, we must have regard to each of the opex factors specified in the National Electricity Rules (NER).¹¹

If we are satisfied the business’s forecast reasonably reflects the opex criteria, we must accept the proposed forecast.¹² If we are not satisfied, we must not accept the proposed forecast and must substitute an alternative estimate that we are satisfied reasonably reflects the opex criteria.¹³ In making this decision, we take into account the reasons for the difference between our alternative estimate and the business’s proposal, and the materiality of the difference. Further, we are required to consider interrelationships with the other building block components of our decision.¹⁴

As set out in our draft decision in detail, we generally assess a business’s forecast total opex using a ‘base-step-trend’ approach, as summarised in Figure 6.3¹⁵

⁸ PIAC, *Submission – 25 January 2023, 20 January 2023*, p. 5; CCP25, *Submission – 20 January 2023, 20 January 2023*, pp. 8–9.

⁹ CCP25, *Submission – 20 January 2023, 20 January 2023*, pp. 11–12.

¹⁰ NER, cl. 6A.6.6(c).

¹¹ NER, cl. 6A.6.6(e).

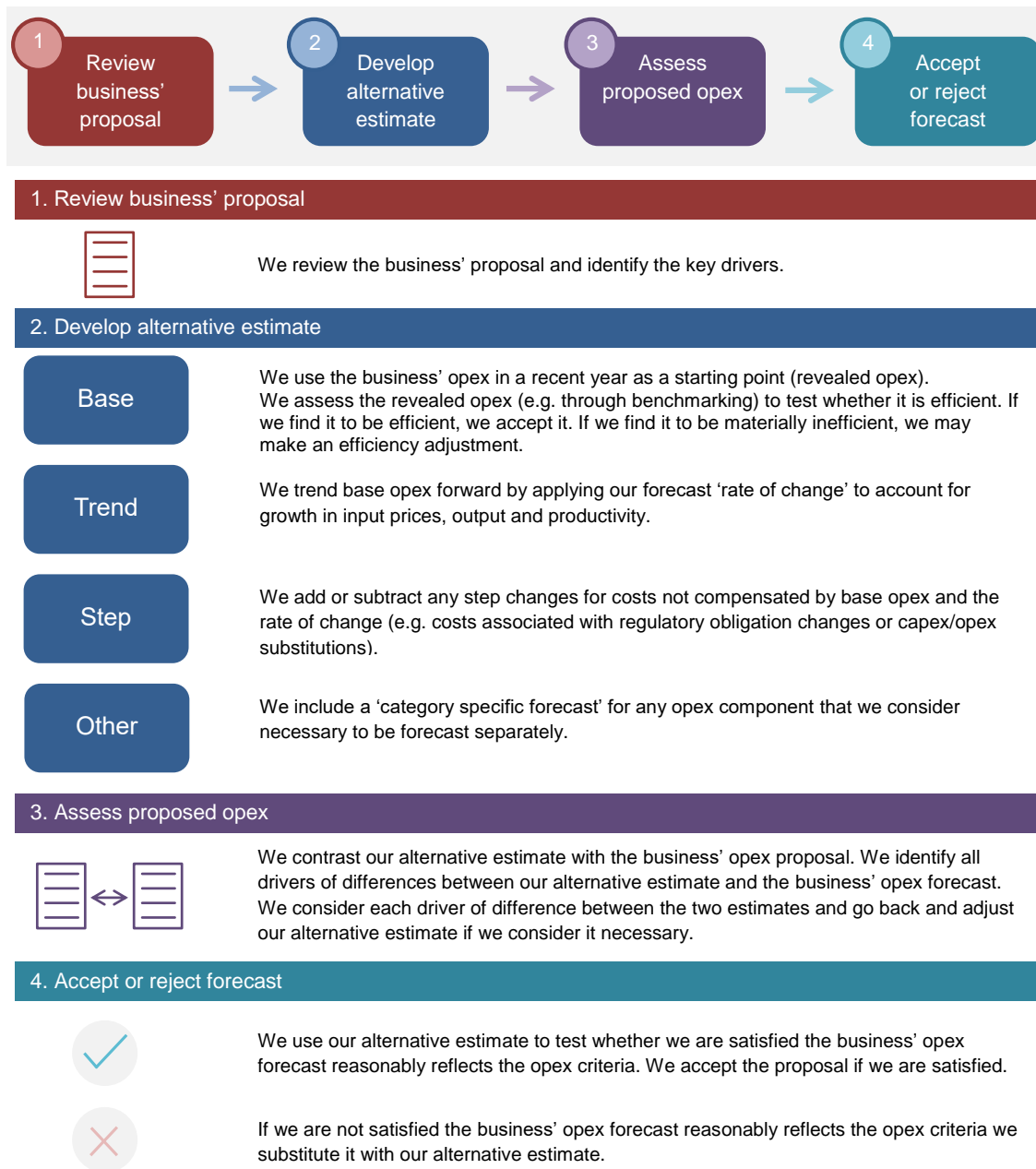
¹² NER, cl. 6A.6.6(c).

¹³ NER, cl. 6A.6.6(d) and 6A.14.1(3)(ii).

¹⁴ NEL, s. 16(1)(c).

¹⁵ Our base-step-trend approach is set out in our expenditure guideline. See AER, *Expenditure forecast assessment guideline for electricity transmission*, November 2013.

Figure 6.3: Our opex assessment approach



6.3.1 Interrelationships

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

- the efficiency benefit sharing scheme (EBSS) carryover—the estimate of opex for 2022–23 (the final year of the current regulatory control period (2018–23)) that we used to forecast opex, was the same as the level of opex we used to calculate EBSS carryover amounts. 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 2018–23 period, which provided Transgrid 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
- concerns of electricity consumers identified during Transgrid’s engagement with consumers.

6.4 Reasons for final decision

Our final decision is to not accept Transgrid’s total opex forecast of \$1,184.8 million (\$2022–23), including debt raising costs, for the 2023–28 period.¹⁶ Our alternative estimate of \$1,100.8 million, including debt raising costs, is \$84.1 million (7.1%) lower than Transgrid’s revised proposal. We consider that Transgrid’s total opex forecast does not reasonably reflect the opex criteria.¹⁷

The following sections outline the key inputs and assumptions we made in developing our alternative estimate of efficient costs for Transgrid, using our base–step–trend approach. The opex model we used to calculate our alternative estimate is published 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 Transgrid would need for the safe and reliable provision of services over the 2023–28 period.

6.4.1.1 Base year and efficiency of base year opex

Consistent with our draft decision and Transgrid’s revised proposal, we have used 2021–22 opex as the base year for forecasting our alternative estimate of opex.

We have used 2021–22 opex of \$204.8 million (\$2022–23), net of movements in provisions, as the starting point for our alternative estimate of total forecast opex. This is \$1,024.1 million over five years. This is slightly lower than Transgrid’s proposal of \$1,024.9 million due to us using the latest Consumer Price Index (CPI) estimates available from the Reserve Bank of Australia (RBA).

Our draft decision view regarding the efficiency of 2021–22 opex has not changed. In our draft decision, we determined to use opex in 2021–22 as the starting point for our alternative estimate of total forecast opex over the 2023–28 period. We have considered Transgrid’s opex in the past, its performance in terms of opex multilateral partial factor productivity (MPFP), and the fact that Transgrid’s opex was subject to the incentives of the EBSS in the 2018–23 period, which gave it a continuous incentive to reduce its opex, including in its proposed base year.¹⁸

¹⁶ Transgrid, *2023–28 Revised Revenue Proposal Opex Forecast Model*, 2 December 2022.

¹⁷ NER, cl.6A.6.6(c).

¹⁸ AER, *Transgrid 2023–28 – Draft Decision – Attachment 6 – Operating expenditure – September 2022*, 30 September 2022, pp. 9–11.

6.4.1.2 Adjustments to base year opex

We have maintained our draft decision adjustments,¹⁹ updating the numbers as relevant to reflect the most up-to-date information.

- Removal of capitalised leases worth \$2.4 million (\$2022–23). This reduces our alternative estimate of total opex by \$12.1 million over five years.
- Inclusion of \$5.2 million of recurrent SaaS opex. This increases our alternative estimate of total opex by \$26.2 million over five years.
- Reduction of base year opex by \$27.6 million for the forecast change in opex between 2021–22 and 2022–23 (the final year increment). This reduces our alternative estimate of total opex by \$137.9 million over five years.
- Inclusion of a non-recurrent efficiency gain of \$14.6 million related to bushfire remediation costs. This increases our alternative estimate of total opex by \$73.1 million over five years.
- Removal of \$0.6 million of category specific opex relating to network support costs. This reduces our alternative estimate of total opex by \$3.2 million over five years.

These adjustments have reduced our alternative estimate of total forecast opex by \$53.9 million.²⁰ This is higher than Transgrid’s reduction of \$48.9 million due to our use of the latest CPI estimates available from the RBA to bring numbers to \$2022–23 terms, and correcting an error we identified in the revised opex model.²¹ Transgrid had adjusted 2021-22 reported opex in relation to capitalised leases twice. Transgrid agreed to our correction.²²

6.4.2 Rate of change

We have included a rate of change that increases opex, on average, by 1.2% each year in our alternative estimate. This contributes \$46.1 million (\$2022–23) to our alternative estimate. This compares to Transgrid’s average annual rate of change of 1.4%.²³

Transgrid’s revised proposal accepted our draft decision on price, output and productivity growth. It updated price growth forecasts to reflect updated wage price index (WPI) forecasts from BIS Oxford Economics.²⁴ Our draft decision position on the approach to forecast the rate of change and its various components remains unchanged.²⁵ However, we have updated some inputs as set out below.

¹⁹ AER, *Transgrid 2023–28 – Draft Decision – Attachment 6 – Operating expenditure – September 2022*, 30 September 2022, pp. 11–14.

²⁰ \$53.9 million is obtained by summing up the values over five year in the dots points (e.g. (-\$12.1 million + \$26.2 million - \$137.9 million + \$73.1 million - \$3.2 million).

²¹ Figure 6.2 shows the adjustments applied by Transgrid: (\$72.8 million + \$20.44 million - \$137.98 million - \$3.18 million) = -\$48.95 million.

²² Transgrid, *Response to information request IR#044*, 22 December 2022, p. 2.

²³ Transgrid, *2023–28 Revised Revenue Proposal Opex Forecast Model*, 2 December 2022.

²⁴ Transgrid, *2023–28 Revised Revenue Proposal*, 2 December 2022, p. 41.

²⁵ AER, *Transgrid 2023–28 – Draft Decision – Attachment 6 – Operating expenditure*, 30 September 2022, pp. 14–19.

- We have updated WPI from KPMG to reflect the most recent forecasts. Transgrid's revised proposal relied on the forecasts reported in our draft decision.²⁶
- We have updated forecast productivity growth (0.6% per year) to reflect our 2022 Annual Benchmarking results, which were published after our draft decision.²⁷ Transgrid's revised proposal included the numbers from our draft decision (0.5% per year), which reflect forecast productivity growth reported in our 2021 Annual Benchmarking results.²⁸

Table 6.3 shows both Transgrid's revised proposal, and our alternative estimate for each component of the rate of change.

Table 6.3: Forecast rate of change, %

	2023–24	2024–25	2025–26	2026–27	2027–28
Transgrid's revised proposal					
Price growth	0.7	1.1	1.0	0.3	0.2
Output growth	1.2	4.2	0.1	0.4	0.5
Productivity growth	0.5	0.5	0.5	0.5	0.5
Overall rate of change	1.4	4.8	0.6	0.2	0.2
AER's alternative estimate					
Price growth	0.3	0.9	0.8	0.3	0.2
Output growth	1.2	4.2	0.1	0.4	0.5
Productivity growth	0.6	0.6	0.6	0.6	0.6
Overall rate of change	0.9	4.5	0.3	0.1	0.1
Overall difference	-0.5	-0.3	-0.3	-0.1	-0.1

Source: Transgrid, *Transgrid - 2023-28 Revised Revenue Proposal Opex Forecast Model – 2 Dec, 2 December 2022*; AER analysis.

Note: Numbers may not add up to totals due to rounding. Differences of '0.0' and '-0.0' represent small variances and '-' represents no variance.

6.4.3 Step changes

We have included \$60.8 million (\$2022–23) of step changes in our alternative estimate of total forecast opex. This is \$67.9 million lower than Transgrid's revised proposal, and \$33.1 million higher than our draft decision (see Table 6.1). Our lower alternative estimate largely reflects our assessment that in some cases, as set out below, we are not satisfied that the proposed step changes are prudent and efficient.

In its revised proposal, Transgrid:

- accepted our draft decision on the Integrated System Plan (ISP) preparatory activity step change of zero

²⁶ Transgrid, *2023–28 Revised Revenue Proposal Opex Forecast Model*, 2 December 2022.

²⁷ Quantonomics, *Benchmarking results for the AER – Transmission*, November 2022, p. 65 (Appendix C: Regression-based trend growth rates).

²⁸ Economic Insights, *Economic Benchmarking Results for the Australian Energy Regulator's 2021 TNSP Annual Benchmarking Report*, November 2021, p. 60 (Appendix C: Regression-based trend growth rates).

- accepted our draft decision on the insurance step change (\$13.8 million).

We have included the above step changes in calculating our alternative estimate of total opex, only updating for inflation where relevant.

Transgrid’s revised proposal did not accept our draft decision on the step changes for cyber and critical infrastructure security. It also included two new step changes for:

- payments related to Transgrid’s regulatory obligations under the NSW Government’s Strategic Benefit Payments Scheme
- System Security Roadmap, which related to changes in Transgrid’s operating environment as a result of the acceleration in the energy transition.²⁹

We discuss each of these step changes below. Table 6.4 shows Transgrid’s revised proposal along with our alternative estimate for the final decision, which is to include step changes totalling \$60.8 million.

Table 6.4: Step changes (\$million, 2022–23)

Step change	Transgrid’s initial proposal	AER’s draft decision	Transgrid’s revised proposal	AER’s final decision alternative estimate	Difference
ISP Preparatory Activity	2.9	–	–	–	–
Insurance	30.0	13.8	13.8	13.8	–
Cyber and critical infrastructure security	25.0	13.9	36.3	18.0	–18.3
System security roadmap	–	–	47.6	–	–47.6
Strategic benefit payment	–	–	31.0	29.0	–2.0
Total step changes	57.8	27.7	128.8	60.8	–67.9

Source: Transgrid, *2023–28 Revised Revenue Proposal Opex Forecast Model – 2 Dec*, 2 December 2022; AER analysis.

Note: Numbers may not add up to totals due to rounding. Differences of '0.0' and '-0.0' represent small variances and '-' represents no variance.

6.4.3.1 Cyber and critical infrastructure security

We have included a step change of \$18.0 million (\$2022–23) for cyber and critical infrastructure security in our alternative estimate of total forecast opex, which is \$4.1 million higher than our draft decision. This compares with Transgrid’s revised proposal of \$36.3 million. Our lower amount reflects that we are not satisfied that all the proposed cost components are both prudent and efficient.

In its initial proposal, Transgrid included a step change of \$25.0 million³⁰ to uplift its cyber and critical infrastructure security maturity, including to implement the Australian Energy

²⁹ Transgrid, *2023-28 Revised Revenue Proposal*, 2 December 2022, p. 10.

³⁰ Transgrid, *2023-28 Revised Revenue Proposal*, 2 December 2022, p. 90.

Sector Cyber Security Framework (AESCSF) to achieve Security Profile 3 (SP–3) maturity within the 2023–28 period.³¹ Transgrid stated this security uplift would allow it to comply with the *Security of Critical Infrastructure Act 2018* (Cwth), the *Security Legislation Amendment Critical Infrastructure Act 2021*,³² the *Security Legislation Amendment (Critical Infrastructure Protection) Act 2022*³³ and the *Energy Legislation Amendment Act 2021* (NSW).³⁴

For our draft decision, we included a lower amount of \$13.9 million for Transgrid’s cyber and critical infrastructure security step change, because we were not satisfied that the proposed amounts reflected the efficient costs that would be incurred by a prudent operator.³⁵ For our alternative estimate, we removed amounts for:³⁶

- delayed SP–2 maturity uplift from the 2018–23 period to the 2023–28 period
- double counting base year expenditure in forecast opex and the step change
- higher costs proposed for physical security than justified in the business case.

Transgrid did not accept our draft decision of \$13.9 million. Its revised proposal included a step change for cyber and critical infrastructure security of \$36.3 million. This is \$11.3 million (45.2%) higher than Transgrid’s initial proposal, and \$22.4 million (161.4%) higher than our draft decision. Transgrid stated the revised amount:³⁷

- maintains its initial proposal of \$26.8 million for pillars 1 (cyber) and 2 (physical and natural hazards), including additional costs (\$1.5 million) for the SP–2 and SP–3 activities that it expected to undertake in 2021–22 but will now need to undertake in the 2023–28 period
- includes a new amount of \$9.5 million for pillar 3 (personnel) and pillar 4 (supply chain), as well as for the overarching critical infrastructure risk management plan.³⁸ Transgrid stated that due to the timing in publishing the associated rules in December 2021, it was unable to incorporate these additional costs into its initial proposal.³⁹

For the final decision, and in line with our draft decision, we consider it prudent for Transgrid, as a transmission network service provider, to achieve SP–3 of the AESCSF. However, we have included a step change of \$18.0 million for cyber and critical infrastructure in our alternative estimate of total forecast opex. This is an increase of \$4.1 million (30%) from the draft decision (\$13.9 million) to:

³¹ Transgrid, *Opex Step Change Overview Paper 2022–28 Revenue Proposal*, 31 January 2022, p. 12

³² Australian Government, *Security Legislation Amendment (Critical Infrastructure) Act 2021*, December 2021

³³ Australian Government, *Security Legislation Amendment (Critical Infrastructure Protection) Act 2022*, April 2022.

³⁴ New South Wales Government, *Energy Legislation Amendment Act 2021*, November 2021

³⁵ Transgrid’s proposal step change values were calculated in \$2020–21 terms. For our draft decision, we escalated our alternative estimate value based on the latest CPI estimates available from the ABS and RBA to bring it to \$2022–23 terms as per the requirements of the opex model.

³⁶ AER, *Transgrid 2023–28 – Draft Decision – Attachment 6 – Operating expenditure*, 30 September 2022, pp. 21–23.

³⁷ Transgrid, *2023-28 Revised Revenue Proposal*, 2 December 2022, pp. 49 and 51.

³⁸ Transgrid, *2023-28 Revised Revenue Proposal*, 2 December 2022, p. 51.

³⁹ Transgrid, *2023–28 Revised Revenue Proposal*, 2 December 2022, p. 44.

- reflect the provision of additional information addressing one of the concerns raised in our draft decision regarding the shift of costs in achieving SP–2 maturity from the current 2018–23 to the 2023–28 period
- recognise (based on information provided) that it is likely that a higher level of activities may be required to achieve SP–2 and SP–3 maturity in the 2023–28 period than originally planned.

In its submission to Transgrid’s revised proposal, CCP25 commented that Transgrid’s engagement with its key stakeholder engagement group, the Transgrid Advisory Council (TAC), did not focus on the actual reasons for which we had reduced the allowed expenditure in the draft decision, though it noted that the detailed report from Deloitte (submitted by Transgrid) addressed the AER’s concerns.⁴⁰ The Energy Users Association of Australia (EUAA) supported our draft decision on the cyber security step change and noted that it trusts that our benchmarking will identify the prudent and efficient costs required.⁴¹

A more detailed discussion of our considerations is contained in **Confidential Appendix A**.

6.4.3.2 System security roadmap

We have not included the System Security Roadmap step change in our alternative estimate of forecast opex. We are not satisfied that the proposed expenditure relates to a new regulatory obligation or material exogenous factor which has arisen since Transgrid’s initial proposal. Transgrid has not demonstrated the underlying need for the step change, or the prudence and efficiency of proposed costs. We considered Transgrid’s revised proposal for System Security Roadmap opex and capex costs together. Further detail on our final decision on these costs is set out in **Attachment 5 – Capital expenditure** of this final decision.

Transgrid’s revised proposal included a new step change of \$47.6 million (\$2022–23) relating to a capability uplift for costs associated with planning and managing an increasingly complex electricity network and readying the network for 100% renewables penetration. In proposing this step change, Transgrid relied on a range of the Australian Energy Market Operator’s (AEMO) reports, including its NEM Engineering Framework Initial Roadmap (December 2021), AEMO’s 2022 ISP (June 2022) and recommendations from its consultant, PowerRunner. Transgrid’s revised proposal also included \$88.2 million in forecast capex for System Security Roadmap costs.

Based on our review of Transgrid’s revised proposal, we were not satisfied that Transgrid had demonstrated the prudence or efficiency of the proposed costs, or that the proposed costs met the requirements for a step change (i.e., they are driven by a new regulatory obligation or major external factor which cannot be otherwise managed), or that the proposed costs have yet been adequately consulted on or supported by consumers. CCP25 and the

⁴⁰ CCP25, *Consumer Challenge Panel (CCP25) – Submission – 20 January 2023*, 20 January 2023, pp.11–12.

⁴¹ EUAA, *Energy Users Association of Australia (EUAA) – Submission – 20 January 2023*, 20 January 2023, pp. 1–2.

Public Interest Advocacy Centre (PIAC) also questioned the inclusion of the System Security Roadmap step change in Transgrid’s revised opex proposal.⁴²

Following our request for additional justification of proposed System Security Roadmap capex and opex costs, Transgrid submitted a revised estimate of costs which included capex costs only.

6.4.3.3 Strategic benefit payments

We have included a step change of \$29.0 million (\$2022-23) in our alternative estimate of total forecast opex for strategic benefit payments. This is \$2.0 million less than Transgrid’s revised proposal due to an error in Transgrid’s calculation of required payments, which we have corrected after consultation with Transgrid.

Transgrid’s revised proposal included a new step change of \$31.0 million relating to forecast payments required to be made to private landholders hosting infrastructure for *Project EnergyConnect*, in accordance with the NSW Government’s Strategic Benefit Payments Scheme (the Scheme).⁴³ The NSW Government announced the Scheme in October 2022.⁴⁴ This step change therefore relates to a new regulatory obligation which has arisen since Transgrid submitted its initial regulatory proposal, and which has a material impact on costs in the 2023–28 period. We are satisfied that these costs meet the criteria for an opex step change.

We sought further information from Transgrid regarding the basis of estimation of the required strategic benefit payments. Transgrid advised that its strategic benefit payments calculations erroneously used the total length of the *Project EnergyConnect* route, rather than the length of the transmission line that traverses private landholdings.⁴⁵ This had the effect of overstating the estimated payments under the Scheme, which relates only to payments to private landholders. Our alternative estimate of total forecast opex therefore includes a step change of \$29.0 million, which we are satisfied reasonably reflects the forecast of required payments under the Scheme.

6.4.4 Category specific forecasts

While our preferred forecasting approach is to apply the base–step–trend approach described in Section 6.3, there are some categories of opex we do not include in our base–step–trend forecast. We include these as category specific forecasts instead for reasons outlined below.

Our alternative estimate for the final decision includes category specific forecasts debt raising costs only.

⁴² CCP25, *Consumer Challenge Panel (CCP25) – Submission – 20 January 2023*, 20 January 2023, pp. 8–9; and PIAC, *Public Interest Advocacy Centre (PIAC) – Submission – 25 January 2023*, 25 January 2023, p. 3.

⁴³ Transgrid, *2023–28 Revised Revenue Proposal – 2 Dec 2022*, 2 December 2022, pp. 51–53.

⁴⁴ NSW Government, *Strategic Benefits Payments Scheme policy paper*, October 2022, available at <https://www.energyco.nsw.gov.au/sites/default/files/2022-10/policy-paper-strategic-benefit-payments-scheme.pdf>

⁴⁵ Transgrid, *Response to information request #050*, 16 February 2023, p.1.

We have included debt raising costs of \$23.5 million (\$2022–23) in our alternative estimate, similar to Transgrid’s revised proposal.⁴⁶ We show these in Table 6.1, alongside Transgrid’s revised proposal.

Debt raising costs are transaction 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. This provides consistency with the forecast of the cost of debt in the rate of return building block.

6.5 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.⁴⁷ Table 6.5 summarises how we have taken the opex factors into account in making our final decision.

Table 6.5 AER consideration of opex factors

AER consideration of opex factors	AER consideration
<p>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.</p>	<p>There are 2 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.</p> <p>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 NEM, and the limited international data available, among other things. It also does not account for 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 them when assessing the efficiency of Transgrid’s proposed total forecast opex</p>
<p>The actual and expected operating expenditure of the transmission network service provider during any proceeding regulatory control periods</p>	<p>Our forecasting approach uses the service provider's actual opex as the starting point. We have compared several years of Transgrid’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.</p>

⁴⁶ Transgrid, *2023–28 Revised Revenue Proposal Opex Forecast Model*, 2 December 2022.

⁴⁷ NER, cl. 6A.6.6(e).

<p>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</p>	<p>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 their revenue proposals, such that they factor in the needs and preferences of consumers.⁴⁸</p> <p>We note the engagement Transgrid undertook with the Transgrid Advisory Council on a number of areas related to its revised proposal, opex including some of Transgrid's proposed step changes. The TAC comprises of representatives from consumer groups, business, finance, academia and the energy industry.</p> <p>We have summarised feedback on Transgrid's revised opex proposal from CCP25 and other consumer groups in section 6.2.1, and refer to specific feedback in other sections where relevant.</p>
<p>The relative prices of capital and operating inputs</p>	<p>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.</p>
<p>The substitution possibilities between operating and capital expenditure</p>	<p>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.</p> <p>In developing our benchmarking models, we have had regard to the relationship between capital, opex and outputs.</p>
<p>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</p>	<p>The incentive scheme that applied to Transgrid's opex in the 2018–23 regulatory control period, the EBSS, was intended to work in conjunction with a revealed cost forecasting approach.</p> <p>We have applied our estimate of base opex consistently in applying the EBSS and forecasting Transgrid's opex for the 2023–28 regulatory control period.</p>
<p>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</p>	<p>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 arrangements with related providers.</p>
<p>Whether the operating expenditure forecast includes an amount</p>	<p>This factor is only relevant in the context of assessing proposed step changes (which may be explicit projects or programs). We</p>

⁴⁸ AEMC, *Rule Determination*, 29 November 2012, pp. 101, 115.

<p>relating to a project that should more appropriately be included as a contingent project under clause 6A.8.1(b).</p>	<p>did not identify any contingent projects in reaching our draft decision.</p>
<p>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.</p>	<p>We have had regard to AEMO's most recent Electricity Statement of Opportunities and consider this to be consistent with Transgrid's forecast opex (see section 6.4.2.2.1 our draft decision – we have maintained our draft decision on the output growth forecasts component of the rate of change as set out in section 6.4.2 above).</p>
<p>The extent the network service provider has considered, and made provision for, efficient and prudent non-network alternatives.</p>	<p>We have not found this factor to be significant in reaching our draft decision. We note that where Transgrid seeks to pursue efficient non-network options, it may recover incurred costs through annual network support pass through arrangements.</p>
<p>Any relevant project assessment conclusions report required under clause 5.16.4 or 5.16A.4.</p>	<p>We have not identified any RIT–T project that has been submitted by Transgrid that is not already accounted for in total forecast opex, including through forecast output growth.</p>
<p>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.</p>	<p>We did not identify and notify Transgrid of any other opex factor.</p>

Source: AER analysis.

Glossary

Term	Definition
AASB	Australian Accounting Standards Board
ABS	Australian Bureau of Statistics
AEMO	Australian Energy Market Operator
AER	Australian Energy Regulator
Opex	Operating expenditure
ABS	Australian Bureau of Statistics
AESCSF	Australian Energy Sector Cyber Security Framework
BAU	Business-as-usual
Capex	Capital expenditure
CCP25	Consumer Challenge Panel, sub-panel 25
CESS	Capital Expenditure Sharing Scheme
EBSS	Efficiency Benefit Sharing Scheme
Guideline	Expenditure forecast assessment guideline
SP-3	Security Profile 3
ISP	Integrated System Plan
MPFP	Multilateral Partial Factor Productivity
MTFP	Multilateral Total Factor Productivity
NEM	National Electricity Market
NER	National Electricity Rules
Opex	Operating expenditure
RBA	Reserve Bank of Australia
RIN	Regulatory Information Notice
SaaS	Software as a service
TAC	Transgrid Advisory Council
WPI	Wage Price Index