Draft Decision on Basslink Electricity Transmission Determination 2026 to 2030

(1 July 2026 to 30 June 2030)

Attachment 2
Capital Expenditure

September 2025

AUSTRALIAN ENERGY REGULATOR

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Note

This attachment forms part of the Australian Energy Regulator's (AER's) draft decision on the transmission determination that will apply to Basslink for the 2026–30 period. It should be read with all other parts of the draft decision.

The draft decision includes the following attachments:

Overview

Attachment 1 – Opening regulatory asset base

Attachment 2 – Capital expenditure

Attachment 3 – Operating expenditure

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1 Capital expenditure

On 26 June 2025, we published our final decision to accept Basslink's application to convert its market network service to a prescribed transmission service. Our final conversion decision sets out our reasoning as to why regulation of Basslink is consistent with the National Electricity Objectives (NEO).[1]

APA Group (APA) is the owner of Basslink Pty Ltd, the company that owns and operates the Basslink interconnector. For consistency and clarity, we refer to 'Basslink' throughout this draft decision and the asset as the Basslink interconnector.

The decision to convert the interconnector and classify Basslink's network services as prescribed transmission services will take effect on 1 July 2026. The National Electricity Rules (NER) require us to make a revenue determination for Transmission Network Service Providers (TNSPs) in respect of prescribed transmission services.[2]

Given the timing of our conversion decision, the regulatory period for our revenue determination is shortened to four years, 2026–30. This attachment sets out our draft decision on Basslink's capex for the 2026–30 period.

We seek stakeholder feedback on our draft revenue determination on capex, which will be considered together with other stakeholder views, along with Basslink's revised proposal, in making our final revenue determination.

Capital expenditure (capex) refers to the investment made in the transmission network to provide prescribed transmission services. This investment mostly relates to assets with long lives (30-50 years is typical) and these costs are recovered over several regulatory periods.

The financing and depreciation costs associated with these assets are recovered (return of and on capital) on an annual basis as part of the building blocks that form the total revenue requirement for Basslink.[3]

Under the NER, Basslink must include a total forecast of the capex that it considers is required to meet or manage expected demand, maintain the safety, reliability, quality, security of its network, comply with all applicable regulatory obligations and contribute to achieving emissions reduction targets (the capex objectives).[4]

We must decide whether or not we are satisfied that Basslink's capex forecast reasonably reflects prudent and efficient costs of achieving the capex objectives and a realistic expectation of future demand and cost inputs (the capex criteria).[5] If we are not satisfied, we must set out the reasons for this decision and a substitute estimate of the total capex for the regulatory control period that we are satisfied reasonably reflects the capex criteria, taking into account the capex factors.[6] We must make our decision in a manner that will, or is likely

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1 AER, *Final Decision – Basslink conversion application*, June 2025.

2 NER, cl.6A.21.

3 National Electricity Rules (NER), cl. 6A.5.4(a)(2) and (3).

4 NER, cl. 6A.6.7(a)

5 NER, cl. 6A.6.7(c).

6 NER, cl. 6A.14.1(2)(ii).

to, deliver efficient outcomes in terms of price, quality, safety, reliability and security of supply, and to achieve jurisdictional targets for reducing Australia's greenhouse gas emissions that benefit consumers in the long term (as required under the NEO).[7]

Basslink initially proposed $74.1 million ($2024–25) in forecast capex for the Basslink interconnector for the 2025–30 period, which it considered was required to maintain its operations.[8] This forecast capex was primarily for the replacement of the cable's control and protection system, building new equipment for a cable repair vessel, and improving asset security in order to meet Basslink's regulatory obligations under the *Security Of Critical Infrastructure Act 2018*.[9] APA subsequently amended its proposed capex, withdrawing its Ambient Temperature Project ($7.0 million) and adding expenditure for spare cable ($8.2 million).[10] APA's revised capex proposal was $74.8 million ($2024–25) for the 2025–30 period.[11]

Following our decision to accept Basslink's application to convert its market network service to a prescribed transmission service, we invited Basslink to update its proposed capex. Basslink updated its forecast for 2026–30 to $99.0 million ($2024–25).[12] The increased forecast is largely attributable to increases in forecast control and protection system capex ($82.6 million, compared to $44.1 million in Basslink's initial proposal).

1.1 Our position on capex

Basslink has not satisfied us that its total net capex forecast of $99.0 million ($2024–25) reasonably reflects the capex criteria set out in the NER.[13] Our substitute estimate of $95.8 million is 3.2 per cent below Basslink's forecast and includes a placeholder for replacement of the control and protection system ($81.9 million). We are satisfied that our substitute estimate reasonably reflects the capex criteria. Table 2–1and Table 2–2present our draft decision.

Table 2–1 Position on total forecast transmission capex ($million, $2024–25)

	2026–27	2027–28	2028–29	2029–30	Total
APA's Basslink proposal	24.2	28.1	29.5	17.2	99.0

7 National Electricity Law (NEL), s.16(1)(a). The NEO is set out in s. 7 of the NEL.

8 APA, *Basslink Transmission Proposal: Attachment 7 – Forecast Capital Expenditure*, Table 7.1, 15 September 2023, p 155. For the four years 2026-30 the forecast capex was $55.6m.

9 APA, *Basslink Transmission Proposal: Attachment 7 – Forecast Capital Expenditure*, Table 7.1, 15 September 2023, p 155.

10 APA, 'Uploaded updated models', email received 12 April 2024; APA, Basslink: Marine Disaster Recovery Plan, 28 June 2024; APA, Basslink Forecast Capex Model Update.xls, 10 July 2024. The other small adjustments were reductions in the Repair Vessel Fitout, the Control and Protection System and the physical security and natural hazards expenditure and an increase in the cyber security expenditure.

11 For the four years 2026–30 the forecast capex was $63.3m.

12 This is $101.9 million ($2025–26).

13 NER, cl. 6A.6.7(c).

AER position	23.5	27.9	28.1	16.4	95.8
Difference	-0.7	-0.2	-1.4	-0.9	-3.1
Percentage difference (%)	-2.91%	-0.71%	-4.62%	-4.97%	-3.2%

Source: APA, *Basslink Forecast Capex Model – –Post conversion decision v.2.xls*, 20 August 2025.
Note: Numbers may not add up to total due to rounding. Amounts of '0.0' and '–0.0' represent small amount and '–' represents zero.

Table 2–2 AER draft decision – Total forecast capex by project 2026–30 ($million, $2024–25)

Project	Total forecast capex
Control and protection system	81.9
Other (DC Reactor refurbishment, spares, minor plant & equipment, program manag.)	2.2
Subsea cable repair strategy	7.3
SoCI	2.8
Physical Security and Natural Hazards	1.0
IT/OT	0.6
Total capex	95.8

Source: AER calculation.
Note: Numbers may not add up due to rounding.

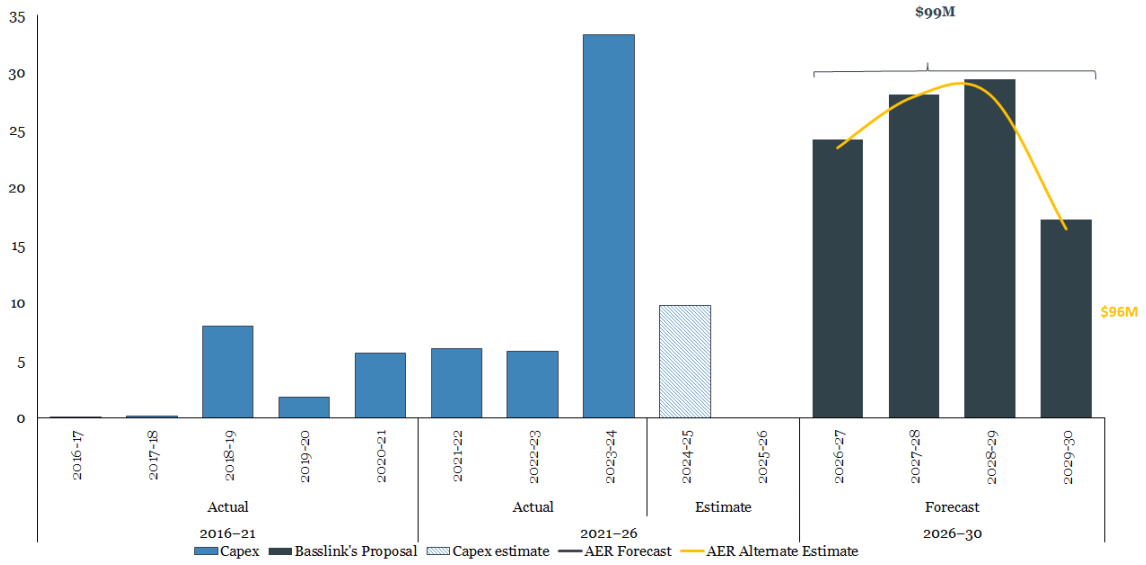
1.2 Basslink's proposal

Basslink proposed forecast capex of $99.0 million ($2024–25) for the 2026–30 regulatory control period, an annual average of $24.7 million per year.[14] This is a $10.3 million (71.6%) average annual increase from its actual/expected expenditure for the 2021–26 period when Basslink was not subject to regulation[15]. It is a $21.6 million (697%) average annual increased over 2016–21.

14 APA, *Basslink - Forecast Capex Model – Post Conversion Decision v2*, 20 August 2025.

15 APA acquired Basslink in October 2022.

Figure 2–1 Comparison of Basslink's past and revised forecast capex ($million, $2024–25)



Source: APA, *Basslink Forecast Capex Model – Update v.2 - Public.xls*, 25 July 2024; APA, *Basslink - Attachment 12 - Worksheet historical and forecast - 15 September 2023.xls*; AER analysis.

1.2.1 Key drivers of the capex proposal

Basslink's proposed capex forecast is predominantly replacement capex (93.8% of total capex).[16] Its proposed capex is made up of:[17]

- $93.8 million for 'Stay In Business' projects, including
  - Replacement of the Control and Protection System ($82.6 million); and
  - Other ($3.9 million), including DC Reactor refurbishment, allocations for spares and minor plant & equipment, and program management and consultation.
- $7.3 million for the Spare Subsea Cable, consisting of spare subsea cable and cable joining kits
- $2.8 million for the Basslink allocation of the APA Group-wide costs to meet SOCI regulatory obligations
- $1.7 million for Physical Security and Natural Hazards to improve security at the Loy Yang and George Town sites; and
- $0.7 million for information and operational technology. This includes both an allocation of APA Group-wide costs and Basslink specific expenditure.

Basslink originally included $10.2 million for Repair vessel fit out, that is, fabrication of new cable repair and handling equipment to be installed in the next contracted repair vessel. Due

16 APA, *Basslink Transmission Proposal: Attachment 7 – Forecast Capital Expenditure*, Table 7.1, 15 September 2023, p 155.

17 APA, *Basslink Transmission Proposal: Attachment 7 – Forecast Capital Expenditure*, Table 7.1, 15 September 2023, p 155.

to uncertainty about the timing of the new contract and the associated fit out costs, Basslink has indicated that it will propose a pass through event for the recovery of these costs.

Basslink also initially included $7.0 million capex for Capability (Ambient Temperature Project).[18] It subsequently withdrew this project.

Basslink did not include any capitalised overheads in its proposal for Basslink.

Basslink applied labour escalation to two projects (DC Reactor refurbishment and 'Control and Protection'), based on the proportion of labour involved with the projects.

1.2.2 Submissions on Basslink's proposal

The Tasmanian Government supports the replacement of the Control and Protection System in the 2025–30 revenue period on the basis that the reliability of Basslink is important, especially in the pre-Marinus period when it is the only source of interconnection. It also supports close scrutiny of the proposed costs by the AER from the perspective of prudency and efficiency.[19]

1.3 Reasons for our position

We reviewed Basslink's capex drivers, programs and projects to inform our view on a total capex forecast that reasonably reflects the capex criteria. We conducted top-down analysis such as examining trends and forecast costs compared with historical capex, and inter-relationships between cost categories. To complement this, we conducted bottom-up analysis of Basslink's specific major replacement programs and projects. We also requested further details from Basslink about its proposed capex program through information requests.

We are not satisfied that Basslink's total forecast capex reasonably reflects the capex criteria. Table 2–3 sets out the capex amounts by project that APA included in its total forecast capex for Basslink for the 2026–30 regulatory control period.

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18 APA, *Basslink Transmission Proposal: Attachment 7 – Forecast Capital Expenditure*, 15 September 2023, pp 169-171.

19 Tasmanian Government, *Basslink Conversion Application and Electricity Transmission Determination - Tasmanian Government Submission*, February 2024, p 16.

Table 2–3 Basslink Total forecast capex by project 2026–30 ($million, $2024–25)

Project	Total forecast capex
Control and protection system	82.6
Other (DC Reactor refurbishment, spares, minor plant & equipment, program manag.)	3.9
Subsea cable repair strategy	7.3
SOCI	2.8
Physical Security and Natural Hazards	1.7
IT/OT	0.7
Total capex	99.0

Source: APA, *Basslink Forecast Capex Model – Update v.2 - Public.xls*, 25 July 2024.

Note: Numbers may not add up due to rounding.

Our review of Basslink's proposed capex projects is presented below.

1.3.1 Control and protection system

We have included $81.9 million[20] as a placeholder for Basslink's proposed Control and Protection System (CPS) expenditure. We have insufficient information to form a view on the prudency and efficiency of the latest proposal for replacing the CPS. We expect Basslink will provide more information in its revised proposal following negotiations with potential suppliers.

Basslink initially proposed a total of $44.1 million for the replacement of the Human Machine Interface (HMI) and Control and Protection System (CPS) over the 2025–2030 period based on its experience with Murraylink and that of another HVDC operator.

Basslink updated its forecast to $87.7 million, of which $82.6 million is in the 2026–30 period. This forecast is based on a non-binding, class 4 estimate[21] for a replacement platform, including valve-based electronics, HMI/Supervisory Control and Data Acquisition (SCADA) interfaces, and linked equipment including servers, printers, and other computer systems.

The CPS is the automatic control system which consists of:

- A control system – which manages the AC/DC conversion between the AC grid and the DC cable, controls key components such as the valves, cooling system, AC filters etc to maintain system parameters

[20] Our amount is lower than the APA proposed amount due to our application of a lower rate of labour escalation compared that proposed by APA.

[21] A class 4 estimate typically has an accuracy of between -30% and +50%.

- A protection system - which detects and isolates faults, to avoid damage to equipment, people and the connecting AC grid.

The HMI is the external interface for control of the CPS, allowing an operator to change the CPS parameters.

Control and protection system

APA proposed 3 main reasons for replacing the control and protection system:[22]

- Siemens cancelled the CPS version installed for Basslink in 2006, meaning that no further spares are available from Siemens. Failure of Basslink CPS parts requires using spares held by Basslink or acquiring spares from other high voltage direct current (HVDC) operators running the same system. Basslink indicated that these operators, being in a similar position to Basslink, would be unlikely to provide their spares to Basslink.
- While Basslink has a service level agreement with Siemens, support of the CPS software is dwindling. There are some high frequency, low impact issues which are resolvable with dedicated support, but communications issues are becoming harder to solve as time passes
- Earlier replacement of the CPS is a risk mitigation strategy. Suppliers are more interested in carrying out new installations than replacing systems, creating market pricing and availability risks. Early installation addresses availability risk.

Basslink considered three options in its business case for timing: replacement of the CPS by 2026, 2030 or 2035. On the basis of feedback from the Consumer Panel it proposed replacement by 2030. The majority of the Consumer Panel, 68–77% (by region), chose replacement by 2030 to avoid the potential negative impacts of a Basslink failure.

Notwithstanding Basslink's current spares holding and the historically low failure rate of components, we consider that given the difficulty of obtaining further spares it is prudent to undertake either partial or full replacement of the CPS.

In assessing the prudency of the proposed replacement of the CPS we considered:

- Whether it was possible to refurbish rather than replace the CPS
- The trade-off between replacing with a current CPS platform or waiting for a new CPS platform
- A staged approach, where instead of the two CPS systems being simultaneously upgraded, a new CPS system replaced one CPS while the other was maintained.

Because the existing system is no longer supported by Siemens, refurbishment is not a viable long-term option.

On timing, a new platform is being developed by Siemens which should be available in 2030 to 2032. Using an existing, older, platform risks early obsolescence. For this reason we consider it prudent to delay replacement of the CPS until then.

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22 APA, *Basslink - Attachment 7.2 - Basslink Control & Protection System Renewal*, 15 September 2023, p 5.

One of the factors determining CPS replacement timing is the life of the thyristor valves (which convert the AC current to DC current). The design intent was for the CPS to be replaced halfway through the thyristor valve life of 35 years (that is, CPS replacement by 2023). However, Basslink indicated that the interconnector has a significantly lower failure rate (0.032% per year) than the manufacturer's theoretical failure rate (0.2% per year) and there is field evidence from earlier HVDC installations that a 40-year life is achievable. Given the revised expected life of the thyristor valves, we consider that it is prudent to continue operating the existing valves until the new CPS platform is developed.

We explored with Basslink the possibility of a staged replacement of the CPS, where one CPS is replaced at a time. Currently, two CPS run in parallel, which provides for rapid switching between the two in event of a component failure. This is necessary to avoid damage to electrical components. However, the two systems run independently, theoretically providing for the possibility of a staged replacement. We requested that Basslink provide information on this option. In the absence of this information, we consider that it may be prudent to replace the CPS platform across the two systems in a staggered manner.

Overall, we consider that the proposed capex forecast for the CPS replacement is insufficiently robust for us to be able to determine whether it is prudent and efficient. We have therefore included Basslink's proposed CPS expenditure as a placeholder until we receive further information in the revised proposal.

Human Machine Interface

Basslink initially proposed replacing the human machine interface (HMI) over the 2024–25 and 2025–26 period. The intention was to replace the existing HMI with the current Siemens design. APA stated that this timing was required for it to progress beyond Australian Energy Sector Cyber Security Framework (AESCSF) maturity level 1 by 2026.

In assessing the prudency of the HMI expenditure, we considered:

- The requirement to meet a higher AESCSF maturity level by 2026.
- Replacement with the current HMI design versus delaying replacement in order to be able to install the HMI that is compatible with the new CPS platform
- The timing of the proposed HMI replacement given the timing of the new CPS platform.

Basslink stated that 'compliance with the SoCI Act requires the achievement of SP1, but that Basslink has chosen a target of SP2.[23] It submitted that the higher level requires HMI replacement.[24] Basslink confirmed that it is meeting its SoCI Act requirements and that the higher level is Basslink's choice. We consider that installing the current HMI design, on the basis of meeting a higher security level than is required under the regulations is not prudent, particularly given the HMI will likely need to be replaced again with an updated CPS platform.

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[23] Security Profile 1 (SP1) and Security Profile 2 (SP2) are levels of specific cyber security practices and maturity levels set out in the Australian Energy Sector Cyber Security Framework. Entities in the energy sector use the AESCSF, including its Security Profiles (SP1, SP2, etc.), to demonstrate compliance with the risk management obligations mandated by the SoCI Act.

[24] APA, Response to IR 01, question 6.2., received 15 March 2024, pp 12-13.

The current HMI was replaced in 2011 due to obsolescence and two hard drives were replaced in 2019. Siemens has not announced product phase out for the installed HMI, which means that spares, service and support are expected to be available until at least 2035–37.[25] There is no Original Equipment Manufacturer (OEM) recommendation for HMI replacement and it has a very low failure rate.[26] In other words, there are no apparent obsolescence concerns regarding spares, service or support that would justify earlier replacement. We therefore consider that it would be prudent to delay the replacement of the HMI until when the new CPS platform is available and only if it is required to be replaced due to compatibility requirements.

After further discussions with Basslink regarding the timing of the HMI replacement, they have indicated that the HMI is expected to be replaced as part of the new CPS platform, and that earlier replacement as originally proposed of the HMI is not required. The cost of replacing the HMI is included in our placeholder estimate of CPS costs.

1.3.2 Other stay-in-business capex

We have included $2.2 million[27] in our alternative capex forecast for 'Other stay-in-business capex'. We did not include the $1.6 million that Basslink proposed for program management and consultation as it did not meet the definition of an asset.

Basslink proposed $3.9 million for 'Other' stay-in-business capex. This was for refurbishment of the DC reactor ($0.8 million), spares ($0.6 million), minor plant and equipment ($1.0 million) and Program management and consultation ($1.6 million).

DC reactor refurbishment

The DC reactor is subject to refurbishment at the 20-year mark (2026). This involves swapping the in-service and spare reactors and then refurbishing the previously in-service reactors. This is based on advice from Amplitude, the international engineering experts for HVDC systems. Refurbishment is carried out to minimise the risk of an in-service failure and outage. We consider that the proposed expenditure is prudent to maintain the reliability of the interconnector and assess that the expenditure is efficient. We therefore have included the proposed $0.8 million capex in our alternative capex forecast.

Spares

Basslink provided the expenditure for spares over the last 10 years.[28] We consider that it is prudent and efficient to maintain a spares holding. Basslink's proposed capex is on average $0.1 million per year which is consistent with the historical 10 year annual average. We therefore have included $0.6 million in our alternative capex forecast.

Minor plant & equipment

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25 APA, *Basslink - Attachment 7.2 - Basslink Control & Protection System Renewal*, September 15, 2023, p 16.

26 APA, *Basslink, Attachment 7.1 - Basslink Lifecycle Management Plan*, 18 August 2023, pp 44-45.

27 Our amount is lower than the APA proposed amount due to our application of a lower rate of labour escalation compared that proposed by APA.

28 APA, Response to Information Request 01, question 16.2.1., received 15 March 2024, p 21.

Basslink initially proposed including minor plant & equipment capex of $0.05 million per year, which was forecast using the past 5 years of actual expenditure on projects with a value of less than $100,000. Basslink updated this estimate to $0.25 million per year ($1.0 million in total) as it had miscalculated the previous estimate. Expenditure on minor plant and equipment is required to maintain the reliability of the interconnector and is prudent. However, Basslink's historical expenditure, which it provided as the basis for its forecast, included expenditure (eg. cable jointing kits) which is included in other categories (eg. cable spares) for the forecast period. There is an allowance in the forecast capex for these other categories. Hence, it would be double counting to include it in the minor plant and equipment category. After removing this expenditure, we have included $0.18 million per year, a total of $0.9 million in our alternative capex forecast.

Program management and consultation

Program management and consultation expenditure of $1.6 million was included over 2028–29 and 2029–30. Basslink stated that this expenditure is for the preparation of the transmission determination proposal.[29] We do not consider that this expenditure meets the definition of an asset (see section 1.4). We therefore have not included it in our alternative capex forecast.

1.3.3 Subsea Cable Repair Strategy

We have included $7.3 million in our alternative forecast for the subsea cable repair strategy for 2026–30.

Basslink initially proposed $18.4 million capex for undertaking the fit out ($10.2 million) on its next contracted repair vessel and increasing the holding of spare subsea cable ($8.2 million).

It has subsequently withdrawn the fit out expenditure and increased the spare subsea cable expenditure to $10.4 million, of which $7.3 million is in the 2026–30 period.

Repair vessel fit out

Basslink is party to the South Pacific Marine Maintenance Agreement (SPMMA), which enables Basslink to access a repair vessel in the event of an offshore cable fault. The last three contract terms have been 5 years, with a 2-year extension of the initial 5-year contract. At the end of each five years, a different vessel has been contracted, requiring a new fit out of the cable handling equipment, which is loaded onto the repair vessel in the event of a cable fault.[30]

Contracting access to a repair vessel within South Pacific waters is the most cost-efficient way of managing the repair of a cable fault. The cost of accessing a repair vessel is balanced against the benefits of minimising the repair time and the losses and reliability impacts associated with the interconnector's outage time.

Given the losses associated with an outage we consider that it is prudent to contract the repair vessel. We sought further information regarding Basslink's ability to control access to the same repair vessel over more than a five-year contract period to avoid repeated fit out

[29] APA, Response to Information Request 13, received 13 August 2025, p 10.

[30] APA, Response to Information Request 01, question 17.2., received 15 March 2024, p 22.

costs. Basslink indicated that the various vendors dictate the vessel which is available, where the decision to change the vessel is due to the existing vessel not being available for recontracting.[31]

In considering the efficiency of the repair vessel fit out we reviewed the cost build-up of the project and examined historical costs.

The estimated cost of the repair vessel fit out for the current vessel, the Lodbrog, was initially estimated at $8.2 million ($2024–25) but subsequently revised up to $26.3 million ($2024–25).[32] The salvage value or re-use/re-purpose value of the current repair vessel equipment which is forecast to be superseded in the 2025–30 period is estimated to be less than $0.1 million.[33] The equipment purchased, but not installed, for the vessel prior to this, the CS Reliance, cost $3.7 million ($2024–25).[34]

Basslink provided an update on the contracting arrangements for the repair vessel: OMS, the current owner and operator of the Lodbrog, will fulfill its current contract with the SPMMA to provide services to early 2028. A new contract for services after this time has not been agreed. Basslink has been in discussions with OMS about having cable handling infrastructure permanently installed on the replacement boat, thereby minimising any future fit-out requirements.

The timing of the new contract, and the degree to which the fit-out will be included in the boat's construction, introduce significant uncertainty in estimating the capex required in the 2026–30 period. For this reason, Basslink has removed the repair vessel fit out costs from the capex forecast and has instead indicated that it will propose a pass through event for these costs in its revised proposal, we will consider this at the revised proposal. Basslink noted that, due to the fit-out costs not being expected to exceed the $30 million materiality threshold, a contingent project cannot be proposed.

Spare subsea cable

Initially Basslink did not propose any subsea cable capex as the manufacturer has a 7-year lead time. Basslink advised that a slot for acquiring cable has opened up for 2026–27 and that it is in its best interest to secure additional holdings of spare cable given the 7-10 year lead time, which would see a delay in cable provision till 2032–35.[35]

Based on advice from the marine cable repair experts, Red Penguin, Basslink has determined that the minimum length of cable required for a single repair is 3,600m.[36] Prysmium, the cable supplier, provides cable in 1,500m lengths.[37]

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31 APA, Response to Information Request 01, question 17.4., received 15 March 2024, p 22.

32 APA, Response to Information Request 01, question 19.2.1, received 15 March 2024, p.24; Basslink, Business Case: Marine Disaster Recovery Plan, 31 May 2024, p 6.

33 APA, Response to Information Request 01, question 18.2., received 15 March 2024, p 23.

34 APA, Response to Information Request 01, question 19.2.1, received 15 March 2024, p 24.

35 Basslink, Business Case: Marine Disaster Recovery Plan, 31 May 2024, p 5; APA, Response to Information Request 13, received 13 August 2025, p 7.

36 Basslink, Business Case: Marine Disaster Recovery Plan, 31 May 2024, p 11.

37 Basslink, Business Case: Marine Disaster Recovery Plan, 31 May 2024, p 11.

Basslink's current spares holding for the interconnector is 4,200m. Basslink submitted that Marsh' advice is that industry loss data indicates that cables older than 18 years have a 7% failure rate per year. Basslink show that in applying this rate, there is no requirement for additional cable.[38]

However, Basslink proposes that if 2 repairs were required in 7 years, additional cable would be required.[39] Basslink proposed acquiring 2 of the 1,500m lengths.[40] This would give Basslink a spares holding of 7,200m of cable.

We consider that Basslink's assumption of 2 repairs in 7 years is overly conservative, given:

- Marsh' opinion
- Basslink's history of one HVDC submarine cable failure and one failure in the land section of the metallic return cable in 18 years, i.e. one submarine cable failure in 18 years[41]
- Engineering consultants, Amplitude's opinion that the 2015 Basslink fault was consistent with an internal fault due to hidden defects or damage, which are more likely to occur early in a cable's lifetime. It stated that failures due to aging occur late in the cable's lifetime.[42] It provided data which showed a declining fault rate over time.[43]

Basslink provided additional information in relation to the proposed capex:[44]

'Whilst the approximately 4 kilometres of spare cable currently on hand will allow for one small and isolated repair, it is unlikely to be sufficient to cover the repair of a second minor fault, an ill-timed change in the weather during a repair [where the vessel operator may elect to abort the repair resulting in additional cable being required] or the damage from a large, significant event, like an anchor drag, which could damage the cable across a much larger length.'

Basslink also submitted that Marsh's 7% annual probability of a cable fault is cumulative. Given the last cable fault was 2019, this would result in a cumulative probability of 91% to 112% of a cable fault occurring, applying Marsh 7% annual probability, (or 72% to 89%, applying actual fault data) before being able to access additional cable.

Given this additional information, we consider that it is prudent to acquire additional cable in this regulatory period.

Basslink also proposed additional capex for four spare rigid cable jointing kits. Basslink currently holds four spare flexible cable jointing kits, however Prysmium is no longer training its staff in the use of flexible cable jointing kits. There is an 18-month lead time to secure

38 Basslink, Business Case: Marine Disaster Recovery Plan, 31 May 2024, p 11.

39 Basslink, Business Case: Marine Disaster Recovery Plan, 31 May 2024, p 5.

40 Basslink, Business Case: Marine Disaster Recovery Plan, 31 May 2024, p 11.

41 APA, *Basslink, Attachment 7.1 - Basslink Lifecycle Management Plan*, 18 August 2023, p 51.

42 APA, *Amplitude Consultants, Basslink Condition Assessment*, 06 September 2023, p 9.

43 APA, *Amplitude Consultants, Basslink Condition Assessment*, 06 September 2023, Table 9, p 9.

44 APA, Response to Information Request 13, received 13 August 2025, p.8.

cable jointing kits so Basslink considers it prudent to order these in advance of them being required for a cable repair.

We consider that it is prudent to acquire the cable jointing kits as spares.

The total capex for the spare subsea cable program is $10.4 million over 2025–27. We have included $7.3 million capex in 2026–27 for the additional spare cable and jointing kits in our alternative capex forecast.

1.3.4 SoCI

We have accepted Basslink's proposed $2.8 million for Basslink's allocation of the APA Group-wide SoCI costs and included it in our alternative capex forecast for 2026–30.

In assessing SoCI expenditure we take a risk-based approach rather than supporting a specific maturity level that is targeted beyond the minimum SP1 regulatory obligation. We specifically assess whether the risk-based approaches have adequately sought to balance the cost of specific controls against the risk mitigation benefits to be achieved. Where it is proposed to exceed legal obligations, prudency and efficiency must be demonstrated with a net economic benefit, with reasonable and justified assumptions, and considering a reasonable range of options to address the identified need.

Basslink indicated that SP1 has been achieved in 2024 and it is now targeting SP2 in 2026.

APA's SoCI expenditure is undertaken at an APA Group level and then the total costs are allocated to individual assets, such as the Basslink interconnector, in accordance with the asset's Cost Allocation Methodology. In Basslink's case, this is Basslink's revenue contribution or share of total APA Group revenue. However, APA reports that it did not have a full year of revenue for 2022–23 to be able to calculate Basslink's revenue share. Instead, APA used an average of the Post Tax Revenue Model (PTRM) revenue over the 2025–30 period to calculate Basslink's revenue share.[45]

APA group's allocation of SoCI expenditure for Basslink is $5.4 million for the 2020–25 period and a forecast allocation of $3.8 million for the 2025–30 period, with $2.8 million included for the 2026–30 period.

We sought further information from APA about Basslink's proposed SoCI program. With respect to ongoing expenditure beyond the original program's development and implementation, APA indicated that the Cyber security program is stay-in-business cost from 2027–28 to 2029–30 ($0.5 million per year).[46] The ongoing Enterprise Security Governance program expenditure from 2027–28 to 2029–30 ($0.1 million per year) is to improve threat modelling, threat intelligence and security incident management. [47]

We consider the proposed expenditure is prudent, on the basis of maintaining the minimum SP1 regulatory obligation, and efficient. We included it in our alternative capex forecast.

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45 APA, Response to Information Request 01, question 22.2.2, received 15 March 2024, p 26.

46 APA, Response to Information Request 01, question 23.2, received 15 March 2024, p 27.

47 APA, Response to Information Request 01, question 23.2, received 15 March 2024, p 27.

1.3.5 Physical Security and Natural Hazards

We have included $0.9 million in our alternative forecast for the Physical security and natural hazards project.

Basslink proposed $1.4 million capex for mitigating the risks associated with unauthorised and undetected access to Basslink sites. The project consists of energising the existing perimeter fencing, increasing the CCTV coverage and upgrading the entry access control system (EACS).[48]

We requested that APA provide the risk assessment underpinning the project and costings in order for us to assess the prudency and efficiency of its proposed expenditure. APA provided these but they are confidential.

We consider that the risk assessment provided by Basslink does not take into account Basslink's small perimeters, operational environment and the existing controls which are in place.

We have included expenditure to partially address some of the identified risk, where we have assessed that this part of the expenditure is prudent and efficient. We have provided our reasoning in Confidential Appendix F.

1.3.6 IT/OT

We have included $0.6 million in our alternative capex forecast for information, communication and operational technology (IT/OT).

Basslink proposed $0.7 million for IT/OT, including $0.5 million for Basslink interconnector specific expenditure and $0.2 million for Basslink's allocation of the APA Group IT/OT. This forecast expenditure is in the context of a $10.9 million spent on integrating Basslink into the APA Group operations in 2020–25.[49]

The Basslink specific expenditure consists of $0.1 million for replacement of laptops, phones, video conferencing facilities, and a printer. The residual expenditure is for OT initial integration and standard asset integration ($0.1 million) and EMS Basslink integration and reliability/predictive monitoring ($0.2 million).

The APA Group IT/OT program (and the Basslink allocation of these costs) over 2026–30 consists of OT Technology Capability uplift ($0.2 million).

We consider that the 3-year phone and laptop and 5-year printer replacement life cycles are reasonably standard. We consider it prudent and efficient to undertake regular replacement of these. We have included $0.1 million for these in our alternative forecast. However, Basslink states 'A refresh of video conferencing facilities was undertaken in FY2024 and not within the FY2025–30 regulatory period'.[50] Given Basslink's intention not to replace the video

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48 APA, *Basslink Transmission Proposal: Attachment 7 – Forecast Capital Expenditure*, 15 September 2023, p 162.

49 APA, *Basslink Transmission Proposal: Attachment 7 – Forecast Capital Expenditure*, 15 September 2023, p 169.

50 APA, *Basslink, Attachment 7.6 – IOT Business Plan - Confidential*, 15 September 2023, p 38.

conferencing facilities in FY2025–30 we consider that it is not prudent to include expenditure to replace the video conferencing facilities in our alternative capex forecast.

We sought further information from Basslink regarding the Basslink interconnector specific expenditure and the efficiency for the APA Group IT/OT applied to Basslink.

We consider that the capex proposed for the Basslink IT/OT program is prudent on the basis that:

- there are likely to be cost savings derived from operating Basslink at an APA Group level (e.g. corporate services, work and maintenance programming, remote operation of Basslink)
- the upgrading of Basslink's obsolescent IT and OT is likely to reduce the risk of unreliable operations and also provide for increased efficiencies, i.e. cost savings, in operating Basslink.

We have included the residual $0.6 million for IT and OT in our alternative capex forecast.

1.3.7 APA Group overheads

Basslink did not include an allocation of APA Group capitalised overheads to Basslink.

1.3.8 Labour escalation

Basslink applied labour escalation to its forecast capex according to the proportion of labour contained in the project. Two projects were escalated: DC Reactor refurbishment (estimated to be 100% labour) and 'Control and Protection' (30% labour).

In its capex model Basslink applied the same labour escalation to capex as it did to opex. However, Basslink did not justify its application of labour to its forecast.

We do not consider that labour escalation should be applied to external labour, as this is already included in contract or individual job quote forecasts. APA did not distinguish between external and internal labour. It also did not justify the application of labour to its forecast for these two projects.

As we do not have information to justify the prudency and efficiency of the labour escalation we have rejected its application and applied 0% labour escalation in our alternative forecast. We expect Basslink to provide information to justify the application of labour escalation to its internal labour component in its revised proposal.

The applied escalation is set out in Table 2–3 below.

Table 2–3 AER labour escalation applied compared to APA (%, $milllion ($2024–25))

	2026–27	2027–28	2028–29	2029–30	Total
APA - WPI - Oxford Economics forecast (APA)	1.1%	0.9%	1.2%	1.3%	

Value of labour escalation ($million, $2024-25)	$0.1	$0.2	$0.3	$0.2	$0.7
AER	0%	0%	0%	0%	
Value of labour escalation ($million, $2024-25	$0	$0	$0	$0	$0

Source: APA, *Basslink Forecast Capex Model – Update v.2 - Public.xls*, 25 July 2024; AER analysis.

1.4 Efficiency and prudency of capex between 2022–23 and 2025–26

As per Attachment 1, Opening Asset Value, the opening regulatory asset base (RAB) is calculated using the depreciated actual cost of its assets.[51]

This calculation includes actual capex for 2000–01 to 2024–25, and forecast capex for 2025–26.

Under the NER, the AER must determine the value of the regulatory asset base for the Basslink transmission system by applying the 'previous regulatory approach' adopted in decisions regarding the Murraylink and Directlink transmission systems.[52] However, the AER must, when exercising any discretion in relation to determining the value of the regulatory asset base, have regard to the prudent and efficient value of the assets that are used to provide prescribed transmission services, by reference to certain matters which are specified.[53] In assessing the prudent and efficient value of the assets used, one of matters the AER must have regard to is whether Basslink undertook the capital expenditure in a manner consistent with good business practice and so as to practicably achieve the lowest sustainable cost of delivering the prescribed transmission services to be provided as a consequence of that capital expenditure.[54]

We have reviewed these years of capex to assess whether they are consistent with good business practice to achieve efficient delivery of transmission services as required by the Rules.

The asset classes with the majority of the expenditure included in 2022–23 to 2025–26 years were AC Filters, Cable, Control System, Other, Building Installation and In-house Software.

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51 AER, *Basslink – Electricity Transmission Determination 2026 to 2030 – Attachment 1 – Opening Regulatory Asset Base,* September 2025, p 5.

52 NER, cls.11.6.20(d)-(f).

53 NER, cl.11.6.20(g).

54 NER, cls. 11.6.20(g)(2) and S6A.2.2(4).

Basslink didn't provide information to explain the initial estimate/forecast amounts. We requested that Basslink provide a cost build up to explain the proposed amounts, which it did.[55] Basslink subsequently updated its estimates/forecasts.

In the Cable asset category, significant cost increases were proposed for the fit out of the Lodbrog, the contracted repair vessel. The increases were due to advice received from marine cable and vessel engineering experts, with respect to safety requirements that need to be addressed. The updated costs were derived from the quote received for the fit out.[56] Given the safety requirements that need to be addressed, we consider that the increased costs for the repair vessel are prudent and efficient.

We note however, that the Lodbrog fit out is particular to the Lodbrog and so is only likely to be fit for purpose for the 5-year length of the contract for that particular vessel. We therefore consider that it is more appropriate that this expenditure is included in the 'Other' asset class, which has a 5 year life, rather than in the Cable asset class, which has a 40 year life. This is also consistent with the Basslink's original proposal for the forecast period 2026–30, where the vessel fit out is included in the 'Other' asset class. We have made an adjustment to the RAB shifting this expenditure ($0.3 milllion in 2022–23, $16.6 million in 2023–24, $0.3 million in 2024–25 and $0.4 million in 2025–26 ($nominal)) from the 'Cable' asset class to the 'Other' asset class.

In the 'Other' asset category, Basslink included capex for the conversion application ($1.7 million in 2022–23, $1.6 million in 2023–24, $1.4 million in 2024–25 ($nominal)). Basslink described this as the costs incurred to prepare the conversion application and the revenue proposal. It proposed the capex be included on the basis that it is directly linked to future revenue and therefore capex as per Australian Statement of Accounting Concepts 4 (SAC 4).[57] We assess that the conversion application and revenue proposal capex do not meet the SAC 4 requirements of an asset.

Definitionally, it does not meet the requirements of an asset:[58]

- "Future economic benefits", that is, neither the conversion application capex or the revenue proposal capex provide a future service potential. (Paragraph 18)
- "Control by a particular entity", that is, there is no notion of control, or exclusion based on rights, associated with conversion application or revenue proposal expenditure. (Paragraphs 24,25)
- "Occurrence of past transaction or other past event", that is, the transaction or other event giving the entity control over the future economic benefits must have occurred. There has been no exchange creating future economic benefits. "Specification of a

55 APA, Basslink 2025–30 Revenue Reset, Response to Information Request 001, Question 4.1,15 March 2024, pp 6-11.

56 APA, Basslink 2025–30 Revenue Reset, Response to Information Request 01, question 19.2.1, received 15 March 2024, p 24; APA, Basslink Business Case: Marine Disaster Recovery Plan, 31 May 2024, pp 6,18-23.

57 APA, Basslink 2025–30 Revenue Reset, Response to Information Request 001, Question 4.1,15 March 2024, p 10.

58 Australian Accounting Standards Board, Statement of Accounting Concepts 4: Definition and Recognition of the Elements of Financial Statements, 1995.

temporal characteristic has the effect of distinguishing between the future economic benefits of present and future assets of the entity. Future economic benefits that are not controlled at the present time would not qualify as assets." (Paragraphs 29,30)

It does not meet the recognition requirements of an asset:

- it is not probable that future economic benefits are embodied in the asset, nor is it probable that they will eventuate
- the asset or economic benefit allegedly embedded in the conversion application and revenue proposal do not possesses a cost or other value that can be measured reliably.

We do not consider that these amounts meet the definition of capex and have not included them in the RAB opening value.

Within the 'Other' asset class, Basslink also included $0.25 million for Minor Plant and Equipment in 2025–26. We have included $0.2 million on the basis that some of the historical data included elements that are included in other forecast categories. We excluded these, as discussed at section 1.3.2 above.

In the 'Building Installation' category, Basslink included amounts for security upgrades to the Loy Yang and Georgetown buildings. We do not consider that all elements of Basslink's proposed $1.7 million expenditure is efficient, as described in section 1.3.5. We have included $1.0 million in 2025-26.

Basslink included capex in In-house Software for IT/OT programs, as described in section 1.3.6 above. We have assessed that these program amounts are prudent and efficient.

We have adjusted the 'Cable', 'Other' and 'Building Installation' asset categories of the opening RAB by the amounts set out in Table 2–4.

Table 2–4 Regulatory Asset Base adjustments ($milllion, $nominal)

	APA Proposed				AER Draft Decision			
	2022–23	2023–24	2024-–25	2025–26	2022–23	2023–24	2024–25	2025–26
AC FILTERS	-	0.2	1.0	-	-	0.2	1.0	-
AC SWITCHYARD	-	-	-	-	-	-	-	-
AUXILIARY SYSTEMS	-	-	0.3	-	-	-	0.3	-
CABLE	2.4	23.4	3.6	3.7	2.1	6.8	3.3	3.3
CONTROL SYSTEM	-	0.0	0.1	5.3	-	0.0	0.1	5.3
CONVERTER TRANSFORMER	0.1	-	0.1	-	0.1	-	0.1	-

DC FILTER	-	-	-	-	-	-	-	-
DC SWITCHYARD	-	-	-	-	-	-	-	-
EASEMENT	-	-	-	-	-	-	-	-
FREEHOLD LAND	-	-	-	-	-	-	-	-
MEASURING DEVICES	-	-	-	-	-	-	-	-
MOTOR VEHICLES	0.1	-	-	-	0.1	-	-	-
OTHER	4.4	8.4	3.8	1.9	3.0	23.4	2.7	2.3
OVERHEAD LINES	-	-	-	-	-	-	-	-
SMOOTHING REACTOR	-	-	-	-	-	-	-	-
STATION POWER SUPPLY	-	-	0.0	-	-	-	0.0	-
SWITCHYARD COMPONENTS	-	-	-	0.1	-	-	-	0.1
VALVE COOLING	-	0.4	-	-	-	0.4	-	-
VALVE HALL	0.2	-	-	-	0.2	-	-	-
BUILDING INSTALLATION	-	0.1	0.4	1.7	-	0.1	0.4	1.1
IN-HOUSE SOFTWARE	-	1.6	1.8	0.2	-	1.6	1.8	0.2
Total	**7.1**	**34.1**	**11.2**	**12.8**	**5.4**	**32.5**	**9.8**	**12.2**

Source: APA, *Basslink Forecast Capex Model – Update v.2 - Public.xls*, 25 July 2024; AER analysis.

Glossary

Term	Definition
AC	Alternating current
AESCSF	Australian Energy Sector Cyber Security Framework
AER	Australian Energy Regulator
CESS	Capital expenditure sharing scheme
CPS	Control Protection Scheme
DC	Direct current
HMI	Human Machine Interface
HVDC	High voltage direct current
IT/OT	Information and operational technology
NEL	National Electricity Laws
NEO	National Electricity Objectives
NER	National Electricity Rules
OEM	Original equipment manufacturer
PTRM	Post tax revenue model
RAB	Regulatory asset base
SAC 4	Statement of Accounting Concepts 4
SCADA	Supervisory Control and Data Acquisition)
SoCI	Security of Critical Infrastructure
SP	Security Profile
SPMMA	South Pacific Marine Maintenance Agreement
TNSP	Transmission Network Service Provider