

# AER

# Determination

HumeLink Early Works  
Contingent Project

August 2022

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# Executive Summary

HumeLink is a proposed \$3.3 billion transmission upgrade connecting the Greater Sydney load centre with the Snowy Mountains Hydroelectric Scheme and Project EnergyConnect in South West NSW.

HumeLink is included in the Australian Energy Market Operator's (AEMO) 2022 Integrated System Plan (ISP) as a staged actionable project under the optimal development path (ODP).<sup>1</sup>

The ISP considers four scenarios of future plausible market developments to capture uncertainty regarding the pace of energy transformation on the path to reach net zero by 2050. HumeLink delivers value in all scenarios and the project would optimise benefits to consumers if delivery is targeted for 2026-27. HumeLink is estimated to deliver roughly \$1.3 billion of the \$24.5 billion in net market benefits in the most likely scenario, Step Change.

The value of staging HumeLink is in mitigating the risk that not enough dispatchable capacity is available if there are early coal closures in the period 2026 to 2028. There are two stages in the delivery of HumeLink

- Stage 1 (Early Works) are pre-construction activities that can be taken while keeping the option to either continue or discontinue the project as new information becomes available.
- Stage 2 is implementation, the completion of the new 500kV transmission that links the Greater Sydney load centre with the Snowy Mountains Hydroelectric Scheme and Project EnergyConnect in south west New South Wales.<sup>2</sup>

Transgrid proposes that the commissioning of HumeLink will be complete by 2026-27, which aligns with AEMO's target project delivery date in the ISP. Prior to constructing the project, Transgrid is undertaking early works to:<sup>3</sup>

- Determine the prudent and efficient project construction cost by refining the project scope through innovation and cost-effective design.
- Identify, explore and manage the project risks in order to mitigate and/or diversify the project's risks to reduce residual risk costs.
- Progress activities on the critical path and undertake engagement to retain social licence to achieve AEMO's target delivery date of 2026-27.

In its contingent project application 1 (CPA 1), Transgrid's forecast capital expenditure for Stage 1 (Early Works) is \$321.9 million (\$2017-18). Completion of Stage 1 (Early Works) is proposed by July 2024, which is consistent with the target timeframe set out in AEMO's 2022 ISP.

For actionable ISP projects such as HumeLink, our role is limited to assessing whether the trigger event for actionable ISP projects has been satisfied such that Transgrid is eligible to submit a CPA. If we assess the trigger event for actionable ISP projects has been satisfied,

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<sup>1</sup> AEMO, *2022 Integrated System Plan*, June 2022, p.61.

<sup>2</sup> AEMO, *Integrated System Plan Feedback Loop Notice – HumeLink (Early Works)*, 27 January 2022.

<sup>3</sup> Transgrid, *HumeLink – Stage 1 (Early Works) Contingent Project Application*, 5 April 2022, p.1

our role is then to determine the incremental revenues that will be added to Transgrid's revenue allowance, reflecting the forecast prudent and efficient capital expenditure and operating expenditure required to deliver the project.<sup>4</sup>

**Table 1** sets out the incremental revenues that will be added to Transgrid's revenue allowance, the forecast prudent and efficient capital expenditure required to deliver the project, and the estimated impact on the transmission component of residential customer electricity bills in New South Wales.

**Table 1 HumeLink contingent project – Assessment of forecast expenditure, revenues and bill impact**

	Determination
Incremental revenue to be recovered from customers over 2024–25 to 2027–28 (\$ nominal)	\$71.4 million
Indicative increase in residential electricity bills over 2024–25 to 2027–28	\$3 p.a.
Forecast capex to be commissioned for HumeLink Stage 1 (\$2017–18)	\$321.9 million
Unrecovered revenue within the 2018–23 period to be carried over and recovered over 2023–28 (\$2017–18)	\$4.1 million

Source: AER analysis.

### Transgrid can proceed to the next stage of the HumeLink project

Contingent projects are significant network augmentation projects that may arise during a regulatory control period but the need and or timing is uncertain. While the expenditures for such projects do not form part of the total forecast expenditure in a revenue determination, the project costs may ultimately be recovered from customers if certain conditions are met (also called a 'trigger event') and the project costs exceed a materiality threshold.

Clause 5.16A.5 of the National Electricity Rules (NER) sets out four necessary conditions that will allow Transgrid to recover the prudent and efficient costs of HumeLink (including stages of HumeLink) from customers:

- Transgrid must issue a Regulatory Investment Test for Transmission (RIT-T) project assessment conclusions report (PACR) that meets the requirements of clause 5.16A.4 and which identifies a project as the preferred option (which may be a stage of an actionable ISP project if the actionable ISP project is a staged project)
- Transgrid as the proponent must obtain written confirmation from AEMO that the preferred option addresses the relevant identified need specified in the most recent ISP and aligns with the optimal development path referred to in the most recent ISP (this process is the 'ISP feedback loop').
- No dispute notice has been given to the Australian Energy Regulator (AER) under rule 5.16B(c) or, if a dispute notice has been given, then in accordance with rule 5.16B(d), the dispute has been rejected or the project assessment conclusions report has been amended and identifies that project as the preferred option.<sup>5</sup>
- The cost of the preferred option set out in the contingent project application must be no greater than the cost considered in AEMO's ISP feedback loop assessment.

<sup>4</sup> NER, cl 6A.8.2

<sup>5</sup> NER, cl. 5.16B(e)

We are satisfied that all four conditions have been met and as such Transgrid is now entitled to recover revenues from energy consumers to deliver the Stage 1 (Early Works) component of HumeLink. On 29 July 2021, Transgrid completed the *Reinforcing the NSW Southern Network* RIT-T process. Transgrid initiated the process to identify a project that:

- increases the transfer capacity and stability limits between the Snowy Mountains and major load centres of Sydney, Newcastle and Wollongong, thereby enabling access to lower cost generation to meet demand in these major load centres, and
- facilitates the development of renewable generation in southern NSW.

Transgrid identified a preferred option that involved constructing new 500 kV double circuit transmission lines in an electrical ‘loop’ between Maragle, Wagga Wagga and Bannaby.

In November 2021, as part of a dispute resolution process, the AER required Transgrid to amend the HumeLink PACR to include a double circuit option for the path between Maragle and Bannaby as a credible option, in order to meet the requirements of the NER. The amended PACR, published in December 2021, concluded that the preferred option in the PACR remained the preferred option.

In January 2022, AEMO confirmed that the proposed option and preferred cost is consistent with the optimal development path in the draft 2022 ISP.<sup>6</sup> The cost of early works for the preferred option is \$321 million, which is less than \$330 million considered by AEMO in its ISP feedback loop assessment.

### ***The forecast costs of undertaking early works are efficient and prudent***

The forecast costs that are reasonably required to deliver the project is the key driver of the incremental revenues that would be recovered from consumers.

Transgrid’s application proposed \$321.9 million (\$2017-18) in forecast capex to undertake early works.

HumeLink is a staged contingent project. Staging a contingent project provides Transgrid with revenue certainty to undertake Early Works (Stage 1) prior to commencing construction on the project (this is provided via the CPA 1 process). This revenue certainty is provided earlier than normal and typically in advance of making final investment decisions.

If the project goes ahead, a second round of revenue is provided for the construction phase (Stage 2) of the project via the CPA 2 process.

This revenue certainty to Transgrid should desirably secure value by doing activities that reduce future system costs and promote the long-term interests of consumers. In the context of the HumeLink project, the benefits to consumers of Transgrid undertaking early works are:

- revealing cost information about the project in order to reduce cost uncertainty and drive costs down, including on project design, input costs, and route selection

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<sup>6</sup> <https://aemo.com.au/-/media/files/major-publications/isp/2022/isp-feedback-loop-notice-humelink-early-works.pdf?la=en&hash=850505364979A1922BAA044AA68022F5>

AEMO’s 2022 ISP confirms that HumeLink remains a staged actionable project, see p. 68:

<https://aemo.com.au/-/media/files/major-publications/isp/2022/2022-documents/2022-integrated-system-plan-isp.pdf?la=en>

- option value to retain flexibility to proceed with the project only if it remains the preferred option once the full project costs are known; and
- keeping the project schedule to meet AEMO's ISP 2022 target delivery date of July 2026, which protects consumers against schedule slippage or further coal closures.

We have examined Transgrid's proposed capex forecast and our view is that the amount proposed is reasonable, prudent and efficient to deliver early works for HumeLink, in the context of the benefits to consumers as outlined above.

In particular, we consider that:

- Transgrid's proposed scope of works are reasonable as a whole and adopt a prudent approach to meeting the objectives of early works for HumeLink. Importantly, this accounts for the objective to deliver the project to the target project delivery date of 2026-27 as set out in AEMO's 2022 ISP.
- The HumeLink Stage 1 (Early Works) will likely reduce cost uncertainty and reduce project risks, which will benefit the subsequent CPA for the construction of the project. If Transgrid undertakes its activities as set out in its proposal, it should also enable AEMO to consider the accurate costs of the full project when it undertakes its next ISP feedback loop.

### **Next steps**

The incremental revenues we have approved in this determination will now be added to Transgrid's total maximum allowed revenues for the 2023-28 regulatory control period. This follows the process set out in clause 6A.8.2 of the NER.

The increase in allowed revenues will be reflected in customer bills in 2024-25 onwards, the second year of the 2023-28 regulatory control period.

We are required to publish Transgrid's application and invite interested parties to make written submissions.<sup>7</sup> Our decision has been informed by submissions from stakeholders where relevant issues to our assessment were raised.

A number of submissions raised issues that do not impact this determination but do warrant consideration by Transgrid in future processes. These issues include perceptions of inadequate stakeholder engagement by Transgrid throughout the regulatory process,<sup>8</sup> and compensation to landowners for accessing land and easements.<sup>9</sup>

Based on our consideration of the issues raised in submissions, it is our expectation that Transgrid will more consistently, transparently and meaningfully engage with its stakeholders and the wider community for the remainder of the HumeLink project. This is important to ensure stakeholder concerns are considered, and to communicate relevant project information to stakeholders as more information is revealed.

The next stage of the HumeLink project will be important in ensuring that Transgrid determines the accurate cost of constructing the full project and obtains all necessary approvals. Our expectation is that Transgrid's activities in Stage 1 (Early Works) will result in

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<sup>7</sup> NER, cl. 6A.8.2 (c)

<sup>8</sup> [Kyeamba](#), [EUAA](#), [Individual stakeholder 2](#), [Pondera Pastoral](#), [Wunelli](#), [PIAC](#), [Braeburn Pastoral](#)

<sup>9</sup> [Individual stakeholder 2](#), [Pondera Pastoral](#), [HumeLink Alliance](#), [Wunelli](#), [Braeburn Pastoral](#)

robust estimates for construction costs in subsequent stages. This will ensure that AEMO has all necessary information when undertaking the ISP feedback loop, and the next CPA includes an accurate forecast for the costs reasonably required to construct the project. We expect that Transgrid will have resolved all outstanding issues relating to the implementation of the project by the completion of this early works process, including land costs, environmental impacts and biodiversity offsets, and project design.

# Contents

- Executive Summary .....iii**
- 1 HumeLink contingent project .....1**
- 2 Our contingent project determination.....3**
- 3 Project trigger and expenditure threshold.....5**
  - 3.1 Assessment of trigger event ..... 5
- 4 Prudent and efficient project expenditure .....10**
  - 4.1 Forecast capital expenditure .....10
- 5 Calculation of incremental allowed revenues .....16**
  - 5.1 Amendment of the subsequent 2023-28 revenue determination .....17
  - 5.2 Minor modelling error corrections.....18



# 1 HumeLink contingent project

HumeLink is a planned \$3.3 billion transmission upgrade linking Greater Sydney load area with the Snowy Mountains Hydroelectric Scheme and Project Energy Connect. HumeLink involves around 360 kilometres of new 500 kilovolts (kV) transmission lines, which will expand transmission capacity in southern NSW.

HumeLink is included in the AEMO 2022 ISP as part of the ODP as a 'staged actionable project'. HumeLink is estimated to deliver roughly \$1.3 billion of the \$24.5 billion in net market benefits in the most likely scenario, Step Change.<sup>10</sup> The ISP considers four scenarios of future plausible market developments to capture uncertainty regarding the pace of energy transformation on the path to reach net zero by 2050.<sup>11</sup> HumeLink delivers value in all scenarios and the project would optimise benefits to consumers if delivery is targeted for 2026-27.<sup>12</sup>

The value of staging HumeLink is in mitigating the risk that not enough dispatchable capacity is available if there are early coal closures in the period 2026 to 2028. There are two stages in the delivery of HumeLink. Stage 1 (Early Works) are pre-construction activities that can be taken while keeping the option to either continue or discontinue the project as new information becomes available. Stage 2 is implementation, the completion of the new 500kV transmission that links the Greater Sydney load centre with the Snowy Mountains Hydroelectric Scheme and Project EnergyConnect in south west New South Wales.<sup>13</sup> Completion of HumeLink Stage 1 (Early Works) is targeted by July 2024, and Stage 2 by July 2026.<sup>14</sup>

This delivery timing protects consumers against schedule slippage or further coal closures, while staging the project retains the option to pause the project if circumstances change. HumeLink is the only actionable ISP project that could be delivered in the critical period that directly addresses this risk.<sup>15</sup>

As a staged project in the ISP, HumeLink will go through the ISP feedback loop assessment twice, once prior to its early works and a second time following the conclusion of early works. The feedback loop assessment comprehensively tests alignment with the ODP, including by re-running the ISP modelling if necessary, by considering multiple complex interactions that are unable to be captured within decision rules.<sup>16</sup>

The HumeLink CPA is the preferred option identified in Transgrid's RIT T process. In November 2021, the AER required Transgrid to amend the HumeLink PACR to include a double circuit option for the path between Maragle and Bannaby as a credible option, in

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<sup>10</sup> AEMO, *2022 Integrated System Plan*, June 2022, p.68.

<sup>11</sup> See p. 25: <https://aemo.com.au/-/media/files/major-publications/isp/2022/draft-2022-integrated-system-plan.pdf>

<sup>12</sup> AEMO, *2022 Integrated System Plan*, June 2022, p.68.

<sup>13</sup> AEMO, *Integrated System Plan Feedback Loop Notice – HumeLink (Early Works)*, 27 January 2022.

<sup>14</sup> AEMO, *2022 Integrated System Plan*, June 2022, p.68.

<sup>15</sup> AEMO, *2022 Integrated System Plan*, June 2022, p.68

<sup>16</sup> AEMO, *2022 Integrated System Plan*, June 2022, p.69

order to meet the requirements of the NER. The amended PACR concluded that the preferred option in the PACR remained the preferred option. In January 2022, AEMO confirmed that the proposed option and preferred cost is consistent with the ODP in the draft 2022 ISP.

Transgrid's allowed revenues for the 2018-23 regulatory control period did not include funding for the delivery of this project. On 6 April 2022, Transgrid submitted its application under clause 5.16A.5 of the NER to seek \$321.9 million (2017-18) in forecast capex for HumeLink early works over the 2018–23 and 2023-28 regulatory control periods. This application is for a range of 'Early Works' activities in Stage 1, including project design, stakeholder engagement, land-use planning and approvals and acquisition, procurement activities, and project management.<sup>17</sup>

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<sup>17</sup> Transgrid will later submit a second stage contingent project application seeking to recover revenue for project implementation costs once the project has been committed to and a final cost estimate is available.

## 2 Our contingent project determination

Under clause 6A.8.2 of the NER, Transgrid may apply to amend its existing revenue determination to increase allowed revenues for a contingent project. However, we are only required to determine the incremental revenues required to deliver the contingent project if we are satisfied that a specific trigger event has occurred, and the project exceeds a cost threshold.

As set out in section 3, the HumeLink CPA meets the conditions required for us to make a determination because:

- we are satisfied that each element of the trigger event for this project has occurred
- we are satisfied that the capex amount sought exceeds the applicable materiality threshold of \$36 million.

We have now made a determination on Transgrid's CPA in accordance with clause 6A.8.2 of the NER, which specifies the process we must undertake and the determination we must make on a CPA.

In accordance with clause 6A.8.2(e) of the NER, we have determined:

- the total capex that is reasonably required for the project and the amount of capex for each remaining year of the regulatory control period (see section 4)
- the incremental revenue which is likely to be required by Transgrid for each remaining regulatory year as a result of the efficient capex for the contingent project (see section 5), and
- that the project has commenced and is likely to be completed by July 2026.

We are also required to publish TransGrid's application and invite interested parties to make written submissions.<sup>18</sup> We sought submissions on TransGrid's application on 19 April 2022.<sup>19</sup>

In making our determination, we were required under clause 6A.8.2(f) to consider whether we can accept Transgrid's proposed revenues and project expenditure included in its application. This includes considering if its proposed project costs are prudent and efficient. If we are not satisfied that we can accept Transgrid's forecast revenues and project costs, we can determine a different forecast.

Based on our review of Transgrid's application, and additional analysis undertaken for us by Energy Market Consulting associates (EMCa), we accept Transgrid's forecast capex for the project.

Our reasoning is set out in section 4.1. We have published on our website an indicative post-tax revenue model (PTRM) for 2023–28 demonstrating Transgrid's recovery of the incremental revenue associated with the stage 1 HumeLink project over this period. This is

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<sup>18</sup> NER, cl. 6A.8.2(c).

<sup>19</sup> We received nine submissions, which have been published on the AER [website](#). The key issues raised in the submissions are outlined in Table 3

accompanied by a supporting roll forward model (RFM), depreciation module and PTRM for the 2018–23 period.

### 3 Project trigger and expenditure threshold

Under clause 6A.8.2 of the NER, we are required to determine the incremental revenues required to deliver the contingent project if we are satisfied that a specific trigger event has occurred, and the project exceeds a cost threshold.

#### 3.1 Assessment of trigger event

The trigger event for the HumeLink project is set out in clause 5.16A.5 of the NER as these triggers relate to actionable ISP projects (including staged actionable projects).

Transgrid has elected to apply the trigger event in 5.16A.5 of the NER, rather than the trigger event in Transgrid’s 2018-23 Revenue Determination. Table 2 sets out the required elements of the project trigger for actionable ISP projects.

**Table 2 Actionable ISP contingent project trigger elements (NER 5.16A.5)**

Element	Description of trigger event
1	The RIT-T proponent must issue a RIT-T PACR that meets the requirements of clause 5.16A.4 and which identifies a project as the preferred option (which may be a stage of an actionable ISP project if the actionable ISP project is a staged project).
2	The RIT-T proponent must obtain written confirmation from AEMO that: <ul style="list-style-type: none"> <li>the preferred option addresses the relevant identified need specified in the most recent ISP and aligns with the ODP referred to in the most recent ISP, and</li> <li>the cost of the preferred option does not change the status of the actionable ISP project as part of the ODP as updated in accordance with clause 5.22.15 where applicable.</li> </ul> (This is the ‘ISP feedback loop’).
3	No dispute notice has been given to the AER under rule 5.16B(c) or, if a dispute notice has been given, then in accordance with rule 5.16B(d), the dispute has been rejected or the PACR has been amended and identifies that project as the preferred option.
4	The cost of the preferred option set out in the CPA must be no greater than the cost considered in AEMO’s assessment in requirement 2 above.

Source: AER analysis.

We are satisfied that Transgrid have met all four of these elements as:

- Transgrid published a RIT-T PACR that meets the requirements of clause 5.16A.4 (our reasoning is outlined below)
- AEMO has confirmed, in accordance with cl. 5.16A.5 (b) that the preferred option aligns with the need and the ODP in the most recent ISP
- Transgrid published an Addendum to the PACR on December 2021 in accordance with our Dispute Determination and concluded that the preferred option in the PACR remains the preferred option.<sup>20</sup>

<sup>20</sup> NER, cl. 5.16B(e)

- The cost of early works for the preferred option is \$321 million, which is less than \$330 million considered by AEMO in its ISP feedback loop assessment.<sup>21</sup>

In considering trigger element 1, for Transgrid to be eligible to submit a CPA with the AER, we must be satisfied that the PACR (in this case the PACR and the Addendum) meets the requirements of cl. 5.16A.4 of the NER. Specifically, in considering this aspect of the trigger event, we are required to assess:<sup>22</sup>

- whether the PACR sets out the same matters that were required to be set out in the Project Assessment Draft Report (PADR)<sup>23</sup>; together with
- a summary of, and the proponent’s response to submissions received from interested parties in consultation on the PADR<sup>24</sup>.

We are satisfied that the PACR (including Appendix D setting out Transgrid’s responses to submissions) and the processes undertaken for the RIT-T along with the Addendum meets the relevant requirements of the NER.<sup>25</sup>

Submissions<sup>26</sup> in response to Transgrid’s CPA raised a number of matters related to the conclusions in the PACR and Addendum. The key issues raised in submissions and our response is detailed in Table 3.

**Table 3 Key issues raised in the submissions and AER’s responses**

Topic	Summary of stakeholder feedback	AER response
PACR and PACR Addendum	<p>The preferred option is not the best option (or is negative) and is not robust to sensitivity analysis (National Parks Association, HumeLink Alliance, Kyeamba Valley Concerned Landowners Group and Westwood Action Group).</p> <p>Several submissions raised concerns about the preferred option identified, including, cost inconsistencies between the second ranked and preferred option, that connection to Lower Tumut Sub Station is superior to the connection at Maragle, undergrounding should have been considered, and Snowy</p>	<p>In considering the matters raised in submissions in relation to the RIT-T analysis, its conclusions and our obligations under the NER, our task is not to substantively review the merits of the inputs, assumptions, and conclusions of the PACR.</p> <p>The RIT-T consultation process provides the opportunity for interested parties to raise matters, including challenging inputs, assumptions, and conclusions in the PADR. Though, the AER may become involved on issues challenged by interested parties via the dispute resolution process.<sup>27</sup> Importantly, this means it is not appropriate to engage with issues in the contingent project assessment process that should have been raised</p>

<sup>21</sup> <https://aemo.com.au/-/media/files/major-publications/isp/2022/isp-feedback-loop-notice-humelink-early-works.pdf?la=en>

<sup>22</sup> NER, cl. 5.16A.4(j)

<sup>23</sup> NER, cl. 5.16.4(d). It should be noted that some elements of cl. 5.16.4(d) do not apply to this RIT-T as it is a transitional RIT-T as set out in our Final decision on the actionable ISP Guidelines.

<sup>24</sup> NER, cl. 5.16.4(j)

<sup>25</sup> NER, cl 5.16A.4

<sup>26</sup> Energy Users Association of Australia submission 30 May 2022; Humelink Alliance, 30 May 2022; Kyeamba Concerned Landowners Group and Westwood Action Group submission, 30 May 2022; National Parks association of NSW submission, 30 May 2022; Public Interest Advocacy Centre submission 1 June 2022; Pondera Pastoral Company submission, 30 May 2022; Wunelli submission, 30 May 2022; Braeburn Pastoral Company submission, 30 May 2022.

Topic	Summary of stakeholder feedback	AER response
	<p>Hydro should contribute to the network upgrade (HumeLink Alliance, National Parks Association, Kyeamba Valley Concerned Landowners Group and Westwood Action Group, Public Interest Advocacy Centre).</p>	<p>during the RIT-T process and, if necessary, could have been disputed by interested parties.</p> <p>The AER's primary role is directed towards Transgrid's compliance obligations with the relevant provisions of the NER and the RIT-T. In this context, we are satisfied that Transgrid has published the PACR in accordance with the requirements of the NER and the RIT-T. In particular, we are satisfied that the PACR:</p> <ul style="list-style-type: none"> <li>• sets out the same matters that were required to be set out in the PADR<sup>28</sup>; together with</li> <li>• a summary of responses to submissions received from interested parties in consultation on the PADR; and</li> <li>• the RIT-T process was conducted in accordance with the requirements of the NER.</li> </ul> <p>In addition, to be eligible to submit a CPA, we are satisfied that the PACR Addendum is consistent with the directions in our determination on the dispute in accordance with the requirements in the NER.<sup>29</sup> These directions required that Transgrid include:</p> <ul style="list-style-type: none"> <li>• A full double circuit option for the path between Maragle and Bannaby as a credible option - Option 1C-new.</li> <li>• The estimated capital cost of this option, including the estimated biodiversity offset costs. We required Transgrid, when doing so, to specify the cost accuracy of these costs and to ensure this is consistent with the expected accuracy of the top two ranked options in the PACR.</li> <li>• A complete comparative cost benefit analysis (with and without competition benefits) including this option for each scenario and its impact on the ranking of the credible options assessed in the PACR.</li> <li>• Sensitivity analysis for this option as assessed for options 2C and 3C in the PACR, to demonstrate the robustness of RIT-T modelling outcomes.</li> </ul> <p>Transgrid published a PACR Addendum on 17 December 2021 to address these matters as set out in our directions.</p> <p>The NER also does not require the AER to approve the PACR or to formally state the RIT-T (or RIT-T stage if relevant) is complete. As discussed above, for actionable ISP projects, our role is limited to assessing whether the trigger event for actionable ISP projects has been satisfied such that Transgrid</p>

<sup>28</sup> NER, cl. 5.16.4(d). It should be noted that some elements of cl. 5.16.4(d) do not apply to this RIT-T as it is a transitional RIT-T as set out in the AER's Final decision on the actionable ISP guidelines.

<sup>29</sup> NER, cl. 5.16B(d)(3)(i))

Topic	Summary of stakeholder feedback	AER response
		<p>is eligible to submit a CPA. This is consistent with the rule change submitted by the Energy Security Board (ESB), which removed the requirement for the AER approving (or rejecting) the conclusions of a RIT-T through its preferred option assessment. In removing that requirement, the ESB noted that this was removed from the Rules as it is duplicative and takes additional time.</p> <p>We acknowledge that some submissions raised concerns regarding the impact on the PACR conclusions associated with recent market developments since the PACR was published. In particular, the National Parks Association considered that the recent commitment of Kurri Kurri, Tallawarra B gas plants and a delay in the delivery of the actionable Victorian to New South Wales Interconnector West (VNI West) project would affect the PACR conclusions. However, based on the sensitivity analysis in the PACR Addendum, the concern that the preferred option results in estimated negative net benefits, appears to rely on the exclusion of competition benefits from the analysis and the assumption that VNI West will be delayed until 2035-36.</p>
<p>Competition benefits</p>	<p>Submissions raised concerns with Transgrid including competition benefits in its cost benefit analysis during the PACR stage, including the concern that this is at odds with AEMO's position to exclude competition benefits in the 2021 draft ISP (Energy Users Association Australia, HumeLink Alliance, Public Interest Advocacy Centre, Wunelli).</p> <p>In addition, concerns were raised that Transgrid did not consult on the inclusion of competition benefits in the PACR (Wunelli).</p>	<p>Competition benefits are a category of benefits that are prescribed in the NER for inclusion in a RIT-T, unless the RIT-proponent considers:</p> <ul style="list-style-type: none"> <li>• these benefits are not likely to materially affect the outcome of the assessment of credible options</li> <li>• the estimated cost of undertaking the analysis to quantify the market benefit is likely to be disproportionate to the scale, size and potential benefits of each credible option being considered.</li> </ul> <p>AEMO's approach to exclude competition benefits in its ISP does not preclude a RIT-T proponent from considering these benefits in a RIT-T in accordance with the NER. As highlighted above, the RIT-T proponent is expected to include competition benefits in the RIT-T unless these benefits are not considered to be material or the cost of undertaking this analysis is likely to be disproportionate.</p> <p>We acknowledge that it would have been good practice for Transgrid to consult on competition benefits given these benefits were not included in the PACR, notwithstanding no disputes were raised on this matter. Though, we also acknowledge submissions that some stakeholders may not have been aware of the dispute resolution aspects of the process in the NER. While RIT-T proponents are not obligated to outline the dispute resolution process in the PACR, we consider it would be good regulatory practice for RIT-T proponents to notify stakeholders of the dispute resolution process in the PACR</p>
<p>Consideration of broader</p>	<p>Some of the submissions also expressed significant concerns that</p>	<p>It is important to recognise that these matters are beyond the scope of the RIT-T but are matters that</p>



Topic	Summary of stakeholder feedback	AER response
economic costs and benefits	the project assessment needs to consider environmental, landowner and community impacts as well as broader social impacts, (Pondera Pastoral Company, Humelink Alliance, Braeburn Pastoral Company)	are relevant to jurisdictional planning processes (e.g., consideration of environmental, landowner and community impacts as well as broader social impacts). Whereas, the RIT-T framework is limited to the impact on the National Electricity Market (NEM). The NER prescribes the classes of market benefits and costs that may be included in the RIT-T analysis for the purposes of identifying the network or non-network investment option with the highest net economic benefits for those who produce, transport and consume in the NEM.
Reapplication of the RIT-	<p>Kyeamba Valley Concerned Landowners Group and Westwood Action Group submitted that there has been a material change in circumstances that warrants a reapplication of the RIT-T consistent with NER cl. 5.16A.4(n) on the basis that<sup>30</sup>:</p> <ul style="list-style-type: none"> <li>• A double circuit solution was adopted in the PACR (compared to single circuit solution in the PADR).</li> <li>• Doubling of the project cost from the PADR to PACR.</li> </ul> <p>Kyeamba Valley Concerned Landowners Group and Westwood Action Group submitted these material changes from the PADR to the PACR mean that stakeholders have not had opportunity to comment on the new configuration and now much higher expected cost</p>	<p>A material change in circumstances is defined such that, in the reasonable opinion of the RIT-T proponent, the preferred option identified in the PACR is no longer the preferred option. While clause. 5.16A.4 (n)-(o) of the NER relates to circumstances warranting a reapplication of the RIT-T, this applies to material changes in circumstances, following the publication of the PACR. As the increase in the estimated costs of the options and a double circuit configuration were considered by Transgrid in finalising the PACR, the matters identified by Kyeamba have already been taken into account by Transgrid in the PACR.</p> <p>However, should there be a material increase in estimated updated project costs (e.g., following selection of the final route), Transgrid would be expected to consider whether there has been a material change in circumstances that would require the reapplication of the RIT-T. In addition, contingent project trigger element 2 requires AEMO to determine if the cost of the preferred option does not change the status of the actionable ISP project as part of the ODP, before Transgrid is eligible to submit a contingent project for the second stage of the project.</p>

Source: AER analysis.

<sup>30</sup> Kyeamba Valley Concerned Landowners Group and Westwood Action Group, *HumeLink CPA submission*, 30 May 2022

# 4 Prudent and efficient project expenditure

This section outlines our assessment of Transgrid's proposed forecast capex for HumeLink Stage 1 (Early Works), and our determination on the prudent and efficient expenditure reasonably necessary to undertake the project.

The forecast capex is a key component to determining the incremental revenue Transgrid may recover over the 2023-28 regulatory control period. The forecast capex will also be added to the target capex for Transgrid's expenditure incentive schemes.<sup>31</sup> Any incentive rewards and penalties Transgrid receives as a result of under or overspending on the project will be applied as additional revenue adjustments in the next regulatory control period.

## 4.1 Forecast capital expenditure

Transgrid's CPA forecasts that the project will require \$321.9 million (\$2017-18) in capex.<sup>32</sup> Table 4 sets out our determination on the total capex required for the project and the capex in each year of the 2018-23 regulatory control period and the first year of the subsequent 2023-28 regulatory control period. We have accepted Transgrid's proposed forecast capex.

**Table 4 AER determination of forecast capex (\$m, 2017-18)**

	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	Total
Actual	0.6	8.7	15.6	13.4	-	-	38.6
Forecast	-	-	-	31.2	188.9	63.2	283.3
Total	0.6	8.7	15.6	44.6	188.9	63.2	321.9

Source: Transgrid, *Humelink Stage 1 (Early works) Contingent Project Application*, 5 April 2022, p. 3.

Note: Numbers may not add up due to rounding. Excludes equity raising costs.

Transgrid states that its proposed 'early works' deliver on the following three key objectives:

1. Determine the prudent and efficient construction cost for stage 2 by refining the project scope through innovation and cost-effective design
2. Identify, explore, and manage the project risks to mitigate and/or diversify the project's risks so that residual risk costs included in the Stage 2 (construction) application are as low as possible
3. Progress activities on the critical path and undertake engagement to retain social license in order to achieve AEMO's target delivery date of 2026-27

Table 5 provides a summary of the components of Transgrid's proposed forecast capex.

**Table 5 Summary of TransGrid's forecast capex components**

Proposal	Million (\$2017-18)
Steel tower assembly design and prototype testing	Confidential
Long-lead time equipment - substation transformers and reactors	Confidential

<sup>31</sup> The Capital Expenditure Sharing Scheme (CESS) and the Efficiency Benefit Sharing Scheme (EBSS).

<sup>32</sup> Transgrid, *HumeLink – Stage 1 (Early Works) Contingent Project Application*, 5 April 2022, p.3

Proposal	Million (\$2017-18)
Pre-construction development - substation and transmission lines	Confidential
Cultural heritage, valuation and acquisition costs including options and customer asset relocation	22.1
Labour and corporate support for project management, procurement, land and environmental activities	75.5
Development, engineering, legal and economic support	32.9
Fees, labour and indirect costs	28.9
Bidder payments	22.2
Data room services and market roadshow	0.6
Transaction procurement support	4.8
Community support, social legacy, design and communication and community improvement	18.6
RIT-T analysis and documentation and Stage 1 and 2 CPA documentation, modelling and reports	11.9
<b>Total</b>	<b>321.9</b>

Source: Transgrid

Transgrid's CPA included a range of supporting documents. This includes a detailed scope of work document, a detailed breakdown of the project cost elements, a capex forecasting methodology and a breakdown of its procurement process. It also provided an independent engineering verification and assessment of its capex forecast.

#### *Overall conclusion on Transgrid's proposed capex*

We have examined Transgrid's proposed capex forecast and found based on our analysis of the information available that Transgrid's proposed \$321.9 million (\$2017-18) is a prudent and efficient estimate of the forecast capex for delivery of HumeLink Stage 1 (Early Works). In addition, we note Transgrid's capex forecast is within the amount included in the confirmation of AEMO's feedback loop of \$327.6 million.<sup>33</sup>

Our decision is to accept Transgrid's forecast capex for Stage 1 (Early Works) for HumeLink, on the basis that it would reasonably likely be incurred by an efficient and prudent operator to deliver this project. In particular:

- Transgrid's proposed scope of works are reasonable as a whole and adopt a prudent approach to meeting the objectives of early works for HumeLink. Importantly, this accounts for the objective to deliver the project to the target project delivery date of 2026-27 as set out in AEMO's 2022 ISP.
- Transgrid's methodology to forecast its proposed capex comprises a combination of quotations, tendering processes and benchmarking of costs against other Transgrid projects (including Project Energy Connect). This means the capex forecast is likely to reasonably reflect a competitive market outcome for the scope of activities specified by Transgrid in its procurement process for these components.

<sup>33</sup> <https://aemo.com.au/-/media/files/major-publications/isp/2022/isp-feedback-loop-notice-humelink-early-works.pdf?la=en>

- Transgrid engaged consultants, GHD, to undertake independent engineering verification and assessment of its Stage 1 (Early Works) capex forecast for HumeLink, which it has endorsed.
- Transgrid's capex forecast is well supported with documentation and evidence, which has been reviewed and assessed by our technical consultants, EMCa. Our consultants, EMCa considered the description of each element of proposed capex, Transgrid's estimation methodology and GHD's review of Transgrid's estimate. EMCa found that Transgrid's cost methodology is reasonable and likely to result in a reasonable estimate for forecast capex.

To make our decision, we were supported by our consultant, EMCa, who applied its technical and engineering expertise to examine the capex forecast, identify key areas of Transgrid's application that required further analysis, and assess the prudence and efficiency of the forecast.

Our decision has also been informed by submissions from stakeholders and Transgrid's engagement with us over the process. This has included responding to our information requests. In addition, we have consulted AEMO in the making of our decision. This process has ensured we have all the necessary information to make a fully informed decision.

The remainder of this section sets out our findings in more detail about:

- Transgrid's proposed scope of works for HumeLink Stage 1 (Early Works) and approach to meeting the objectives of staging
- forecast capex and the reason it is likely to reasonably reflect prudent and efficient expenditure, and
- outstanding issues raised in submissions that should be considered by Transgrid prior to the CPA 2 process and commencement of Stage 2 (construction).

#### Transgrid's proposed scope of works for HumeLink Stage 1 (Early Works) and approach to prudently meet the objectives of staging

HumeLink is the first staged CPA the AER has received. An assessment on the reasonableness of the costs included in Transgrid's application is substantially informed by the reasonableness of the scope of activities proposed for Stage 1 'Early Works' of the HumeLink project.

Transgrid's proposed scope of works are reasonable as a whole and adopt a prudent approach to meeting the objectives of early works for HumeLink. Importantly, this accounts for the objective to deliver the project to the target project delivery date of 2026-27 as set out in AEMO's 2022 ISP.<sup>34</sup>

In the context of the HumeLink project, we consider the benefits to consumers of Transgrid undertaking early works are:

- option value to retain flexibility to proceed with the project only if it remains the preferred option once the full project costs are known, revealing cost information about the project

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<sup>34</sup> AEMO, *2022 Integrated System Plan*, June 2022, p. 68 states that HumeLink will deliver roughly \$1.3 million of the \$24.5 billion in net market benefits in the most likely scenario. HumeLink delivers value in all scenarios and the project would optimise benefits to consumers if delivery is targeted for 2026-27.

in order to reduce cost uncertainty and drive costs down, including on project design, input costs, and route selection.

- keeping the project schedule to meet AEMO's ISP 2022 target delivery date of July 2026, which protects consumers against schedule slippage or further coal closures.

As a staged actionable ISP project, HumeLink will be required to go through the ISP feedback loop twice – once prior to its early works, and a second time following the conclusion of early works. AEMO's feedback loop is the process of getting written confirmation from AEMO that the preferred option from RIT-T is aligned with the ODP in the most recent ISP.<sup>35</sup>

Stage 1 (Early Works) of HumeLink is due for completion by approximately 2024, and Stage 2 (construction) is due for completion by July 2026.<sup>36</sup>

A benefit of staging HumeLink is that it provides flexibility to respond to changing market conditions or project risks because each stage can reveal more information about the project. This ensures that the project only proceeds if it remains the preferred option. HumeLink Stage 1 (Early Works) potentially can provide option value and reduce project risks at the point of AEMO's second feedback loop process and CPA 2.

We consider the proposed approach to meet the objective to deliver the project by AEMO's 2022 ISP target date of July 2026 as reasonable.

We also expect activities in Stage 1 (Early Works) will help reduce uncertainty of project cost estimates and thereby reduce Stage 2 risk.<sup>37</sup> Our technical consultant, EMCa has found Transgrid's proposed scope of activities and approach is likely to improve cost certainty.

However, we note Transgrid's current project timeframe means the AEMO feedback loop process will take place 6 to 9 months before completion of Stage 1 (Early Works). This means the benefit of Stage 1 (Early Works) in revealing cost information is not likely to provide as much value as otherwise would, if there was more time to allow for completion of the Stage 1 (Early Works) activities to feed into the AEMO feedback loop process. Where it is possible to delay the AEMO feedback loop later in the early works process, this will provide the opportunity for more information to be revealed about the cost of delivering HumeLink.

Overall, we consider Transgrid's proposed approach is reasonable to reduce cost uncertainty and project risks, while ensuring it meets its objective of deliverability by 2026.

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<sup>35</sup> <https://aemo.com.au/en/energy-systems/major-publications/integrated-system-plan-isp/integrated-system-plan-feedback-loop-notices>

<sup>36</sup> AEMO, *2022 Integrated System Plan*, June 2022, p.68.

<sup>37</sup> Transgrid's initial application did not include details regarding cost estimation uncertainty targets. Following an information request from the AER and feedback from some stakeholders, Transgrid provided an estimation of its uncertainty targets. Our technical consultants, EMCa have found that the proposed expected cost accuracy expected to be achieved by Transgrid for Stage 2 is reasonable.

### Transgrid's proposed forecast capex is likely to reasonably reflect prudent and efficient expenditure

We have found Transgrid's forecast capex is likely to represent an efficient and prudent amount of expenditure to deliver the proposed scope of activities in its application.

We were supported by our consultants, EMCa, who applied its technical and engineering expertise to examine the capex forecast, identify key areas of Transgrid's application that required further analysis, and assess the prudence and efficiency of the forecast.

Our key findings are:

- 41 per cent of forecast capex for Stage 1 (Early Works) is made up of direct capex for transmission lines, substations and substation transformers and reactors (\$104.6 million) and indirect capex (procurement) (\$27.6 million). A large proportion of these estimates are based on a range of competitive processes, including supplier quotations, tendering processes and assessment against benchmarks. These estimates are therefore likely to reasonably reflect a competitive market outcome for the scope of activities specified by Transgrid in its procurement process.
- 16 per cent of total forecast capex for Stage 1 (Early Works) is made up of land acquisition costs of \$22.1 million for property acquisition of the new Gugaa substation including negotiation of option agreements for the acquisition of land and easements, and \$28.9 million for activities related to the development of Environmental Impact Statement and land agent fees. EMCa assessed these estimates as reasonable based on the methodology applied. For the proposed expenditure already incurred, the bottom-up evidence supports this amount as likely to be reasonable.
- Transgrid's forecast costs of \$75.5 million for project team resources represents 23 per cent of forecast Stage 1 (Early Works) capex. Our technical consultants EMCa reviewed the assumptions on resourcing and unit costs associated with each resource and found that the total estimate is reasonable. A top-down review by consultant, GHD, engaged by Transgrid has also found the estimates to be reasonable based on comparison against cost benchmarks.
- 10 per cent of forecast capex for Stage 1 (Early Works) is made up of activities related to community and stakeholder engagement, as well as regulatory approvals (\$30.5 million). This forecast is based on the requirements of this project being similar to other major infrastructure projects. In addition, Transgrid's engagement of GHD to undertake independent verification and assessment of estimates includes these components, which it has endorsed. On this basis, these costs are likely to be reasonable.
- The proposed \$32.9 million in project development costs represent 10 per cent of the total forecast capex for Stage 1 (Early Works). These estimates have been developed based unit rates applied to Project Energy Connect or similar work in combination with quotations received. We consider these costs are likely to be reasonable.

### Outstanding issues raised in submissions that should be considered by Transgrid prior to the commencement of Stage 2 (construction)

We sought submissions on Transgrid's application for HumeLink Stage 1 (Early Works). We received submissions from 9 stakeholders. A number of issues were raised in submissions that are not within the scope of 'Early Works' and therefore this determination but are

relevant to the broader HumeLink project. We consider these issues warrant consideration by Transgrid in future processes, including perceptions of inadequate stakeholder engagement by Transgrid throughout the regulatory process.

A potential benefit of staging CPAs is that it can reduce the risk of actionable ISP projects and increase flexibility to respond to changing market conditions or project risks as they arise. This is because each stage can reveal important information about the project, reducing the uncertainty associated with its costs and/or benefits. Based on our consideration of the issues raised in submissions, it is our expectation that Transgrid will more consistently, transparently and meaningfully engage with its stakeholders and the wider community for the remainder of the HumeLink project. This includes issues related to land costs, environmental impacts and biodiversity offsets, and project design. This is important to ensure stakeholder concerns are considered, and to communicate relevant project information to stakeholders as more information is revealed.

As part of Stage 2 of the HumeLink project, it will be important that Transgrid determines the accurate cost of constructing the full project by obtaining all necessary approvals and gathers information necessary to determine if the project remains the preferred option. Our expectation is that Transgrid's activities in Stage 1 will result in a more robust estimate for construction costs. This will ensure that AEMO has all necessary information when undertaking the ISP feedback loop process, and CPA 2 includes an accurate forecast for the costs reasonably required to construct the project.



# 5 Calculation of incremental allowed revenues

This section sets out our calculation of the indicative incremental revenue that Transgrid would recover from customers over the forecast 2023–28 regulatory control period to account for our determination of efficient project costs. We have applied an annual building block revenue approach, in accordance with clause 6A.8.2(h) of the NER. We have also determined the incremental revenue is to be recovered from the second year of the 2023–28 regulatory control period, as per clause 6A.8.2(n)(1) of the NER. Transgrid's application is consistent with this approach.

As discussed in the sections above, the capex for HumeLink spans two regulatory control periods, 2018–23 and 2023–28. As a result, a part of the incremental revenue to be recovered by Transgrid falls within the current 2018–23 period. However, as the annual prices for 2022–23, the final regulatory year in the current period have already been set, the incremental revenue increase due to HumeLink would need to be carried forward to the 2023–28 period. As a result, we determine an amount of \$4.1 million (\$2017–18) that Transgrid was entitled to recover over the 2018–23 period.

Consistent with clause 6A.8.2(n), this determination on the incremental revenue serves as a placeholder until our final decision for Transgrid's 2023–28 regulatory determination is completed. Subsequent to the publishing of the 2023–28 decision, we will amend the determination for the incremental revenue as determined in this contingent project decision.<sup>38</sup> The modelling of the incremental revenue therefore reflects the placeholder inputs contained in Transgrid's CPA. This is further discussed in section 5 below.

Table 6 shows Transgrid is to recover \$71.4 million (\$ nominal) in indicative additional revenues from customers over the 2023–28 period.

As a result of recovering these revenues, we estimate that the transmission component of average residential electricity bills in New South Wales will increase by \$3 per year over the final four years of the 2023–28 period (2023–24 to 2027–28).

**Table 6 Indicative incremental revenue calculation (\$m, nominal)**

	2023-24	2024-25	2025-26	2026-27	2027-28	Total
Return on capital	13.8	17.5	17.6	17.7	17.9	84.5
Return of capital	-6.8	-2.6	-2.6	-2.5	-2.4	-16.9
Straight-line depreciation	0.1	6.1	6.2	6.4	6.5	25.4
Less: inflation indexation on opening Regulatory Asset Base (RAB)	6.9	8.7	8.8	8.9	8.9	42.2
Operating expenditure	0.2	0.2	0.2	0.2	0.2	1.0
Revenue adjustments	4.9	-	-	-	-	4.9
Net tax amount	-0.1	-0.9	-0.8	-0.7	-0.6	-3.2

<sup>38</sup> The amendment of the 2023–28 determination for the incremental revenue as determined in this decision for the HumeLink contingent project must be made within 6 months of the publishing of the final decision for the 2023–28 period.



	2023-24	2024-25	2025-26	2026-27	2027-28	Total
Annual building block revenue requirement (unsmoothed)	11.9	14.2	14.5	14.8	15.1	70.3
Annual expected maximum allowed revenue (smoothed)	-	18.5	18.9	19.4	14.6	71.4
Increase to annual expected MAR (smoothed) (%)	n/a	2.3%	2.3%	2.3%	1.6%	1.7%

Source: AER analysis.

Note: The incremental revenue requirements for 2023–24 do not flow into the expected MAR for that year and are instead smoothed into the remaining years of the period. This is due to the NER requirements around the timing of our decision for HumeLink (discussed further in section 5.1).

- a Regulatory depreciation (return of capital) consists of straight-line depreciation net of indexation of the RAB. The negative incremental regulatory depreciation is a result of a higher growth in the RAB and the consequent increase in the indexation of the RAB exceeding the increase in the straight-line depreciation.
- b This amount reflects the \$4.1 million (\$2017–18) incremental revenue Transgrid was entitled to recover over the 2018–23 period. This has been adjusted by the real WACC and actual CPI for input into the 2023–28 PTRM. Our decision on HumeLink has also updated the estimated CPI for 2022–23 with the latest RBA forecast.
- c The negative tax amount in this decision is due to the growth in tax expenses, primarily the TAB and tax depreciation, being higher than the incremental increase in taxable income as a result of HumeLink

Table 7 provides the indicative effect of the resultant incremental increase in revenues on Transgrid's proposed total annual building block revenue requirement (unsmoothed), expected maximum allowed revenues, and the X-factor over the 2023–28 regulatory control period.

**Table 7 Indicative annual building block revenue requirement, expected MAR and X-factors (\$m, nominal)**

	2023-24	2024-25	2025-26	2026-27	2027-28	Total
Annual building block revenue requirement (unsmoothed)	770.7	819.0	862.2	887.9	946.4	4286.1
Annual expected MAR (smoothed)	797.6	834.9	854.5	874.6	918.1	4,279.7
X-factors	14.7%	-2.3%	0.0%	0.0%	-2.6%	n/a

Source: AER analysis. Based on Transgrid's revenue proposal for the 2023–28 period as submitted in January 2022.

## 5.1 Amendment of the subsequent 2023-28 revenue determination

Our determination on the incremental revenue Transgrid would recover in the forecast 2023–28 regulatory control period is an indicative amount that will be updated following our final decision on Transgrid's 2023–28 determination. This is because Transgrid's CPA for HumeLink was submitted to us on 5 April 2022. This date falls within the final 90 business days of the penultimate year of the current 2018–23 regulatory control period as set out in clause 6A.8.2(n). As a result, the NER requires us to, following our final decision on Transgrid's 2023–28 final determination (expected in April 2023), amend that determination for this contingent project decision.

As part of this decision on the HumeLink contingent project, we applied a number of placeholder estimates to model the incremental revenues. These values will be available once our final decision on the 2023–28 determination is made. Our amendment of the 2023–28 determination for this contingent project includes the actual Consumer Price Index value for 2022–23 and the approved forecast rate of return for the 2023–28 period. This amendment process, however, does not involve amending the capex approved for HumeLink as part of this decision.

Consistent with this decision, our smoothing approach when amending the 2023–28 determination will ensure the incremental revenue for HumeLink is recovered from the second year of the 2023–28 period.<sup>39</sup>

## 5.2 Minor modelling error corrections

### Standard asset life for the “Equity raising costs’ asset class

We have applied an updated standard asset life of 37.3 years to the ‘Equity raising costs’ asset class over the 2023–28 regulatory control period for regulatory depreciation purposes. This compares to Transgrid’s proposal of 13.4 years.

The standard asset life for the ‘Equity raising costs’ asset class needs to be reviewed for each regulatory period. We consider the standard asset life for this asset class should reflect the lives of the mix of assets making up the approved forecast net capex, because the equity raising cost benchmark is associated with that forecast.<sup>40</sup> Transgrid’s standard life calculation for the ‘Equity raising costs’ asset class contained an error that did not correctly account for all forecast capex over the 2023–28 regulatory control period, resulting in a proposed standard asset life of 13.4 years. For our decision on HumeLink, we have amended the calculation to reflect the weighted average of the standard asset lives of all depreciable asset classes over the 2023–28 regulatory control period. In response to an information request, Transgrid indicated that it agreed with our proposed approach.

### Minor modelling input corrections

We have made a few minor adjustments to Transgrid’s model inputs relating to equity raising costs. These adjustments were required as Transgrid’s RFM and depreciation module for the 2018–23 period and PTRM for the 2023–28 period did not reflect the additional benchmark equity raising costs incurred as a result of the capex for HumeLink. In the same response to the information request we issued for the issue above, Transgrid did not have any concerns with the adjustments we have made. Specifically, amendments were made to resolve the following issues:

- The forecast depreciation input was updated in the 2018–23 RFM to reflect the additional equity raising costs forecast in the PTRM for the same period.

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<sup>39</sup> NER cl. 6A.8.2(n)(1).

<sup>40</sup> For this reason, we used forecast net capex as the weights to establish the weighted average standard asset life for amortising equity raising costs.

- The capex input for equity raising costs was updated in the depreciation module for the 2018–23 period. The closing Regulatory Asset Base (RAB) was also updated for the issue above.
- The amended opening RAB and depreciation input for equity raising costs have been recalculated in the 2023–28 PTRM for both issues above.