

The Energy Users' Association of Australia (EUAA) is the peak body representing Australian commercial and industrial energy users. Our membership covers a broad cross section of the Australian economy including significant retail, manufacturing, building materials and food processing industries. Combined our members employ over 1 million Australians, pay billions in energy bills every year and in many cases are exposed to the fluctuations and challenges of international trade.

The EUAA supports the pursuit of net zero targets and support building new transmission infrastructure that will help enable it. However, we must pursue net zero at least cost, not at any cost. Central to this outcome is that new transmission delivers robust net market benefits along with ensuring that consumers do not wear the risk of cost over runs or the consequences of poor decisions made by others.

The EUAA makes this submission as a long-term member of the Transgrid Advisory Committee (TAC) as well as a member of the recently established TAC sub-committee, the Energy Transition Working Group (ETWG), set up to discuss projects, like HumeLink, in more detail. We have also engaged directly with Transgrid on this early works CPA. We thank them for their willingness to listen and discuss the complex and challenging issues we have raised and provide additional information that is included in this submission and which will be made available to the AER for publication on their website.

The focus of this submission is on two issues:

- (i) Consumer engagement expected under the AER guideline

In our view Transgrid did not fulfil the AER's expectations for consumer consultation with the TAC (a "key stakeholder(s) that (is) interested in and can influence the project") under Section 2.2 of the AER Guideline¹ prior to making its CPA submission to the AER. The Guidance Note outlines a range of expectations on what this consultation should cover. We argue that the consultation with the TAC fell well short of those expectations. In particular the AER expects Transgrid's early consultation to indicate²:

"... the level of accuracy, or uncertainty, of the forecast costs for the project, noting that the Association for the Advancement of Cost Engineering's (AACE) cost estimate classification system provides a useful and consistent framework."

The AACE cost categories³ indicate the level of accuracy of a cost estimate – the closer the project gets to final approval, the smaller the \pm accuracy band for estimated capex. There was no consultation with the TAC or ETWG, nor any statement in the CPA of the level of cost accuracy on the AACE scale to be achieved at the end of early works.

¹ AER "Guidance Note – Regulation of actionable ISP projects" March 2021 see pp 5-8 <https://www.aer.gov.au/networks-pipelines/guidelines-schemes-models-reviews/regulation-of-large-transmission-projects/final-decision>

² Ibid p. 7

³ See https://web.aacei.org/docs/default-source/toc/toc_96r-18.pdf

We wanted to understand what consumers we getting for their \$322m – or more accurately, what level of residual risk would remain when Transgrid came forward with its Stage 2 CPA to construct the project. This is the risk that costs would increase subsequent to the estimate at the end of early works that could also mean that:

- Were the costs more accurate, the project would not have passed the AEMO ISP feedback loop, and
- an inaccurate claim of positive net benefits at Stage 2 CPA.

(ii) The level of accuracy in the capex estimate that will result from the proposed expenditure of \$322m in the early works CPA.

We do not think that the AER can make a fully informed decision in the long term interests of consumers on whether the asked for \$322m for early works is prudent and efficient without having a clear view on what level of cost accuracy Transgrid is committing to produce.

Cost accuracy is important to consumers because the more accurate an estimate is, the more confidence consumers have that the residual risks consumers face will be small and that the project will meet the net benefits test under the rules. Given consumers will be paying for this asset for the next 60 years, we need to have confidence that the capex that goes into Transgrid’s RAB will be prudent and efficient for a project that we are confident has net benefits.

We expect that Transgrid also has a strong incentive to achieve a high level of cost accuracy because of a combination of the need to minimise its own risk of cost overrun (on the assumption that a post construction cost pass through is allocated 70/30 under CESS) and for reputational purposes.

Transgrid’s PACR cost estimate in July 2021 of \$3.226b was an AACE Class 4 estimate (-30% to +50% accuracy range). This was nearly 250% increase on the PADR (January 2020) estimate of \$1.35b. Lines and substations increased 230% from \$1,030m to \$2,380m and biodiversity costs increased nearly 300% from \$320m to \$935m.

In recent discussions Transgrid has informed the EUAA that their aim at the end of early works is to get a combination of Class 2 (-15% to +20% for a minimum 40% of total capex based on PACR proportions) and Class 3 (-20% to +30% for a maximum 60% of total capex based on PACR proportions). We understand that the information provided to the EUAA will be made available to the AER for publication on the AER website.

While the AER’s Guideline does not specify an expected cost class, we argue that only a full Class 2 or better achieves an outcome in the long term interests of consumers. We argue this on the basis of what is common in the private sector and what is needed to give consumers confidence that the level or residual risk they will bear post project CPA2 approval is acceptable.

When the AER approves the CPA2 consumers are being asked to pay certain costs and receive uncertain benefits.

Given the high risk of significant cost increases post PACR, we examined the PACR CBA for the preferred Option 3C which has net benefits of \$491m. This number is dominated by Transgrid’s inclusion of competition benefits - a benefit category explicitly excluded by AEMO from the 2022 ISP because of the great uncertainty in measurement.

Exclude competition benefits and the net benefits fall significantly to \$39m in a class 4 capex of \$3.226b i.e. ~1% of capex. Yet Class 4 capex can increase up to 50%.

The EUAA is not against building HumeLink. We are for consumers only bearing the efficient level of costs in the RAB. This level is that at which benefits equal costs with costs and benefits both measured to a high degree of certainty:

- costs that will not, post construction, exceed the benefits. We consider that we will have that comfort only with a Class 2 or better estimate. We do not have that confidence with a Class 3 estimate that can still increase 30%.
- benefits that do not include categories like competition benefits that are very difficult to measure and where consumers are taking significant risk on whether the benefits will be realised at some time over the coming decades.

If Governments want HumeLink to be built then they, not electricity consumers, should fund the level of costs above the level of benefits excluding competition benefits. After all HumeLink is mainly being built to transport power from Snowy 2.0, a project wholly owned by the Federal Government. It was no surprise that Snowy Hydro was one of only two (the other being Hydro Tasmania) of the 12 submissions (including Powerlink) to AEMO that supported including competition benefits in the 2022 ISP. We would argue that Humelink is prime candidate for the Government funding under the Rewiring the Nation Fund⁴.

In summary, we support Transgrid’s application if it means they present an AACE Class 2 cost estimate at the end of the early works. We would support the AER allowing an amount higher than \$322m were it considered prudent and efficient to obtain a Class 2 cost estimate.

Consumer Engagement Expected under the AER Guideline has not been met by Transgrid

The AER Guideline sets out a range of expectations on Transgrid to undertake extensive early engagement. The Guideline says⁵:

“We consider it is important that the TNSP consults with stakeholders in preparing a CPA for actionable ISP projects. Meaningful high quality early engagement, particularly with local community and consumer representatives, can:

- Improve stakeholder and community understanding of the project's costs and risks. Given many actionable ISP projects are significant in size and potentially complex, more stakeholders and communities may be impacted. As such, stakeholders may need more time and opportunities to ask questions about, and understand, these projects compared to 'business as usual' transmission projects.
- Provide greater opportunity for the project solution to be designed with the benefit of local community input, particularly where local communities and/or individuals are impacted.

⁴ See https://alp.org.au/policies/rewiring_the_nation#:~:text=Labor's%20Rewiring%20the%20Nation%20will,signed%20off%20by%20all%20governments.

⁵ Op cit p. 5

- Facilitate understanding of any community concerns, particularly of any impacted stakeholders around the route selection. This helps the TNSP proactively identify and manage risk.
- Provide the TNSP with the opportunity to address or manage concerns raised and demonstrate how it has considered feedback.”

The comments here relate to Transgrid’s engagement with the TAC. Throughout 2021 the TAC sought more detailed briefings on HumeLink (and other ISP projects) as part of the 2023-28 revenue reset. This was not forthcoming to any level of detail. Perhaps that was contributed to by the TAC structure. As we said in our submission on the Transgrid 2023-28 revenue proposal⁶:

“It is important to recognise that the TAC is not a consumer panel, being made up of a number of stakeholder groups including consumers, generators, developers and more recently academics and a selection of industry association representatives. These groups do not always agree and at times consumer advocates believe that views being expressed by some of these representatives does not benefit the long-term interests of consumers nor do they represent consumer preferences.”

We expressed concern that Transgrid hardly engaged at all on ISP contingent projects which would drive the revenue and pricing in 2023-28. We went on to say, regarding HumeLink⁷:

“Unfortunately, when questions were raised by consumer representatives, they were more often than not “parked” and not dealt with in any meaningful way... TAC members have been left underwhelmed by the engagement on key projects such ... Humelink... Many TAC members felt this was a significant oversight.”

The CPA mentions the establishment of the ETWG in response to feedback from TAC members. EUAA is a member of this group. But this committee has the same broad membership as the TAC with members including Snowy Hydro. The ETWG met once prior to the CPA submission and has met once since. Discussion of HumeLink has not been at the detailed level expected by the AER. The one issue we highlight here in our reset submission is the expectation that Transgrid would indicate:

“... the level of accuracy, or uncertainty, of the forecast costs for the project, noting that the Association for the Advancement of Cost Engineering's (AACE) cost estimate classification system provides a useful and consistent framework.”

There was no consultation with the TAC or ETWG, nor any statement in the CPA, of the level of cost accuracy on the AACE scale to be achieved at the end of early works. To Transgrid’s credit it has provided significant information to the EUAA as we have prepared this submission. This information has been provided to the AER and is expected to be published on the AER website in the near future. We draw on this information in the next section.

⁶ See p. 1 https://www.aer.gov.au/system/files/Energy%20Users%20Association%20of%20Australia%20%28EUAA%29%20-%20Submission%20on%20AER%20Issues%20Paper%20%26%20Transgrid%202023-28%20revenue%20proposal%20-%20May%202022_Redacted.pdf

⁷ Ibid p.4
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The level of accuracy in the capex estimate that will result from the proposed expenditure of \$322m in the early works CPA should be at AACE Class 2.

(a) Why is the level of cost accuracy important?

The EUAA material cost rule change currently before the AEMC⁸ highlighted the need to have accurate cost estimates at the CPA stage for two reasons:

1. To be used in AEMO’s feedback loop to check that the project is still part of the optimal development path (ODP), and
2. To be used in assessing, at the end of the early works, whether the project still meets the identified need, is the preferred option and has net benefits under the RiT-T; this is designed to assist consumers to understand the level of residual risk they will be asked to bear if the project is approved at the CPA 2 stage.

We expect that Transgrid also has a strong incentive to achieve a high level of cost accuracy because of a combination of the need to minimise its own risk of cost overrun (on the assumption that a post construction cost pass through is allocated 70/30 under CESS) and for reputational purposes.

ISP Feedback loop

Our discussions with various stakeholders in the course of preparing this submission has highlighted a misunderstanding of the how the regulatory framework works for ISP projects. Some stakeholders are under the misapprehension that the feedback loop also answers the question on whether the project has net benefits. It does not.

As the AEMC notes in its Consultation Paper for the Transmission Planning and Investment Review⁹ (p.82):

“While this is an important safety net, the feedback loop does not seek to answer the same question as the RiT-T: namely, what is the option that achieves the identified need in the most efficient way (or “maximises the present value of net economic benefit”)? Rather, the feedback loop focuses on the upper bound of acceptable costs, while the RiT-T seeks to identify the lower bound or least cost option that will meet the identified need. As such, both have a role to play in protecting consumer interests.”

The ISP Decision Rules the Draft ISP for HumeLink are¹⁰:

⁸ See https://www.aemc.gov.au/rule-changes/material-change-network-infrastructure-project-costs?utm_medium=email&utm_campaign=AEMC-Update-14-April-2022&utm_content=aemc.gov.au%2Frule-changes%2Fmaterial-change-network-infrastructure-project-costs&utm_source=cust49597.au.v6send.net

⁹ See https://www.aemc.gov.au/sites/default/files/documents/consultation_paper_-_transmission_planning_and_investment_review_1.pdf

¹⁰ See p. 66 <https://aemo.com.au/-/media/files/major-publications/isp/2022/draft-2022-integrated-system-plan.pdf?la=en>

- **Decision rules** are as follows:

After completion of Stage 1 (early works), the HumeLink project is to progress to Stage 2 (implementation) unless any of the following occur:

(a) there are new commitments that increase the likelihood that either:

- (i) material volumes of existing dispatchable capacity are retained in New South Wales; or
- (ii) material volumes of new dispatchable capacity are developed in New South Wales beyond what is currently assumed in the Step Change scenario, or

(b) the total project cost (including the cost of completed early works) has materially increased from the current cost estimate of \$3.3 billion.

The more accurate the capex estimate, the more confidence consumers will have that AEMO's decision on whether the project is still part of the ODP is robust and that the residual risk consumers will bear (post construction cost pass through and net benefit uncertainty) is reasonable.

Net benefits

The more accurate the estimate, the more confidence consumers can place in Transgrid's revised CBA and net benefit calculation. The experience of Project Energy Connect was that:

- costs increase substantially as project scope is defined
- had a more accurate cost estimate been used in the AER's 5.16.6 review, the project would have had substantial negative net benefits.

There is significant evidence that costs are increasing substantially for all major projects including ISP projects. Infrastructure Australia's recent report highlighted the supply chain constraints¹¹. The experience with AusNet Services on the Western Victoria Network Project is showing firsthand the schedule and cost impacts of seeking social licence¹².

The updated CBA issued with revised PACR in December 2021¹³, showed that net benefits for the preferred option 3C disappear at a 24% increase over \$3.3b. The PACR (July 2021) cost estimate of \$3.3b was a nearly 250% increase on the PADR (January 2020) estimate of \$1.35b. Lines and substations increased 230% from \$1,030m to \$2,380m and biodiversity costs increased nearly 300% from \$320m to \$935m.

The preferred Option 3C in the PACR had net benefits of \$491m with 92% of that being due to competition benefits. These are the potential benefits when a transmission connection reduces the market power of existing generator(s) which results in lower prices and increased consumer demand. Chapter 5 of the National Electricity Rules¹⁴ allows these benefits to be included in the RiT-T (proponent's discretion) and in the ISP (at AEMO's discretion).

¹¹ Infrastructure Australia "Market capacity for electricity transmission and distribution projects" October 2021

<https://www.infrastructureaustralia.gov.au/sites/default/files/2021-10/Market%20Capacity%20for%20Electricity%20Infrastructure%2020211013.pdf>

¹² Despite completing its PACR in July 2019, AusNet Services is unable to give a date for commencement of construction given the lack of social licence. <https://www.westvictnp.com.au/about/>

¹³ See <https://www.transgrid.com.au/media/0ezampbw/humelink-rit-t-pacr-addendum.pdf>

¹⁴ See <https://energy-rules.aemc.gov.au/ner/390>

The AER’s RiT-T Guidelines¹⁵ provides two methodologies. Difficulties in measurement have meant that the benefit category has not been included prior to Transgrid’s inclusion in the HumeLink PACR. In the PADR Transgrid discussed the relevance of including competition benefits to the choice of preferred option¹⁶:

“Competition benefits are only required to be assessed in the RIT-T where it is expected to be material in the context of the RIT-T (i.e., where it is expected to affect the identified preferred option). The PSCR noted that competition benefits may be important for this RIT-T, and that TransGrid would undertake a ‘fit for purpose’ assessment to see whether such benefits are likely to vary materially between options. However, in light of the core NPV results, we do not now expect that any competition benefits would be material in terms of identifying the preferred option for this RIT-T.”

This suggests that inclusion of competition benefits is only used if required to select the preferred option. The following table has been provided by Transgrid and summaries the December 2021 revised PACR CBA results. Given Option 3C has \$81m additional benefits above Option 2C, it suggests that competition benefits are not required for the task of confirming the preferred option. Competition benefits are almost the same for both Option 2C and Option 3C.

| PV, \$millions | Option 1C- new | Option 2C | Option 3C |
|---|----------------|-----------|-----------|
| Total net benefits, with competition benefits | 335 | 399 | 491 |
| Total net benefits, without competition benefits | (11) | (44) | 39 |
| Gross benefits | 1,778 | 2,174 | 2,196 |
| Competition benefits | 346 | 443 | 451 |

Following publication of the HumeLink PACR, AEMO engaged on and the then specifically rejected¹⁷ the inclusion of this benefit category in the 2022 ISP. Only two (including Snowy Hydro) of the 12 submissions supported inclusion. Ten submissions from consumers, generators and Powerlink did not support inclusion.

The Table shows that excluding competition benefits from Option 3C reduces net benefits to \$39m. This is ~1% of a Class 4 PACR capex estimate that could increase up to 50%. So only a slight increase in capex wipes out the net benefits without inclusion of competition benefits. Class 3 cost estimates that can increase up to 30% are still not accurate enough to give consumers confidence that a \$3.3b (at least) project will be robust to still have net benefits at the end of construction without including competition benefits.

In the course of preparing this submission we sought advice from the AER on whether it would recognise the inclusion of competition benefits in the revised CBA submitted as part of the CPA2. We are concerned that, given inclusion is at the proponent’s discretion, Transgrid will be able to use competition benefits to get the project over

¹⁵ See <https://www.aer.gov.au/system/files/AER%20-%20Regulatory%20investment%20test%20for%20transmission%20application%20guidelines%20-%202025%20August%202020.pdf>

¹⁶ See p. 18 <https://www.transgrid.com.au/media/xrzd0jv4/transgrid-hume-link-padr-amended.pdf>

¹⁷ See <https://aemo.com.au/consultations/current-and-closed-consultations/competition-benefits-in-the-isp>

the net benefits line. We would encourage the AER to thoroughly analyse any claim for competition benefits in CPA 2 and decline their inclusion in the event that the level of uncertainty is similar to that highlighted in the AEMO consultation.

We conclude that a Class 2 cost estimate is required at the end of CPA1 to give consumers confidence to accept the level of residual risk post CPA2 that are being asked to bear. This level of accuracy is in line with what happens in our members’ organisations when approving major project capex. Investment decisions are made using Class 1 or 2 cost estimates. This level of accuracy is driven by the same factors mentioned above – to minimise overrun cost risk and to provide confidence that the project is NPV positive for shareholders. The private sector is unforgiving on executives seen as responsible for major cost overruns¹⁸.

(b) What have Transgrid said on the level of cost accuracy?

The CPA says that the proposed expenditure is designed to (p.1):

- “determine the prudent and efficient construction cost for Stage 2 (project implementation) by refining the Project scope through innovation and cost-effective design
- identify, explore and manage the project risks. This will allow us to mitigate and/or diversify the Project’s risks so that residual risk costs included in our Stage 2 Application (which will include the bulk of the Project’s costs) are as low as possible, and
- progress activities on the critical path and undertake engagement to retain our social licence in order to achieve AEMO’s target delivery date of 2026-27 (i.e. ‘as soon as practicable’)

We will seek to ensure that the Project is delivered at the lowest sustainable cost to maximise benefits to customers.”

As we noted above, neither the TAC nor the ETWG was provided with any indication of the level of cost accuracy at the end of early works and the CPA contained no commitment.

The information provided by Transgrid in recent discussions on their cost accuracy objective is presented in the Attachment and summarised in the table below. Based on the capex category proportions in the PACR, a minimum of 40% of the capex will be Class 2 and a maximum of 60% will be Class 3.

| Category Capex | Class 2 | | Class 3/2 | | Total \$m (\$2020) |
|---|-------------|-----------------|-------------|-----------------|--------------------|
| | \$m in PACR | % of PACR capex | \$m in PACR | % of PACR capex | |
| Substations and transmission lines | | | 1,754 | 54 | 1,754 |
| Long lead time equipment | 121 | 4 | | | 121 |

¹⁸ E.g. the cost blowout in Fortescue’s Iron Bridge magnetite project saw the departure of senior executives. <https://www.fmgf.com.au/in-the-news/media-releases/2021/02/16/fortescue-leadership-changes-%E2%80%93-iron-bridge>

| | | | | | |
|---|-------|-----|-------|-----|-------|
| Land acquisition | | | 207 | 6 | 207 |
| Environmental 'offset' costs | 922 | 28 | | | 922 |
| Labour and related costs; indirect costs | 262 | 8 | | | 262 |
| | 1,305 | 40% | 1,961 | 60% | 3,266 |

Transgrid have made it clear in our discussions that they are concerned about rising costs for the reasons cited above. Constructing Project Energy Connect is providing good insights into the Humelink challenges. We gained the impression from our discussions that Transgrid would like to get to Class 2 given the risks they bear from an inaccurate cost estimate. But they see barriers to get to Class 2. The next section suggests some ideas to reduce those barriers to enable a Class 2 to be prepared.

(c) Some suggestions of how the AER should seek a Class 2 estimate from Transgrid

In this section we draw on our members' experience in calculating capex costs and progressing through the project development cycle to FID for major projects to make some suggestions about how the AER might further question Transgrid about its cost estimate accuracy and evaluate the funding required for a full class 2 estimate to include substations/transmission lines and land acquisition.

Fundamentally the level of accuracy depends on the bid documentation, and time and funding available to complete the estimate. We would support the AER providing the prudent and efficient level of early works funding to enable a Class 2 estimate to be achieved. If that is judged to be more than \$322m then we would support additional funding.

Substations/transmission lines

The largest component of Class 3 costs is around substations and transmission lines. Transgrid have advised that this category was \$1,754m of the total PACR cost of \$3.226b and early works will result in a combination of Class 2 and Class 3 cost estimates. No breakdown of the likely Class 2/3 share was provided. Transgrid has advised that:

“...the construction costs could be described as being at the high end of the Class 2 range of the low end of the Class 3 range”

Our members experience in pricing packages for large capital projects is that they do have the ability to seek bids on the basis of a range of risk sharing arrangements. We see no reason why Transgrid cannot do the same, with the SP packages in the ECI process seeking bids on the basis of different risk sharing options that result in a full Class 2 option as well as a Class 2/3 option. We see no reason why the \$121m of long lead time equipment could not be Class 1 given it involves detailed design to get slot reservation to be part of Stage 1. The same conclusion could be made for pre-construction activities given “...they need to be completed in Stage 1 to meet the target delivery date of 2026-27”.

Land acquisition

Land acquisition costs were \$207m in the PACR and Transgrid’s aim is Class 3. The CPA provides some detail of the scope of work for land acquisition:

- Customer consultation is designed to “support us securing access to, and acquiring easements over land.” (p.5)
- Table 7 pp.25-6 refers to a range of activities including:
 - “Determining the compensation to be paid to each landholder
 - Establishing option agreements in order to be able to acquire land in Stage
 - Commencing the compulsory acquisition process in the event amicable agreements cannot be reached with landowner”

With “These activities need to be completed before we can commence construction” and that ‘completing land acquisition related activities in Stage 1 will lower the risk of costs in Stage 2 and help meet the target delivery date of 2026-27”
- Table 7 p.27 under Land and Environment – “land agents and administrative support to lead the engagement with landholders and negotiations to establish options for easements and compulsory acquisitions.”

Transgrid has a public policy on land acquisitions¹⁹ consistent with the Land Acquisition (Just Terms Compensation) Act 1991. In our discussions, Transgrid indicated that they have budgeted for achieving 70% of the route through negotiated agreements with the remaining 30% through the compulsory acquisitions process. Transgrid see this as an optimistic/stretch target as they currently only have consent to enter for ~ 60% of the route. If agreement is not reached in the six-month period following the initial offer or letter of intent is issued, Transgrid can take steps towards compulsory acquisition under the Just Terms Act as a final resort. This would occur in parallel to any ongoing negotiations with the land owner.

Transgrid intend to start construction before they have secured all land in order to meet AEMO’s completion date of 2026-27. Voluntary agreements would be completed by mid-2023, compulsory agreements would be started by mid 2023 and completed by mid 2025.

Transgrid have argued that while they have reasonable certainty on easement compensation where option agreements are in place overall, the land and easement acquisition cost is class 3 estimate due to uncertainty arising from:

- the potential route refinement and asset positioning within the corridor
- variable legal and land agent costs, and
- compulsory acquisition costs.

We find this logic difficult to accept. We expect that while construction may begin before all land is acquired, the amount not yet acquired would be relatively small. Otherwise, why begin construction and expose Transgrid to the risk of significant cost increase and delay from a route change? Legal and land agent costs presumably refer to the administrative cost of land acquisition. These would be immaterial in a \$207m (or more) budget and should be at Class 1 (which allows a 15% increase). Given Transgrid can issue the initial offer or letter of intent containing a

¹⁹ See <https://www.transgrid.com.au/media/grzfqes1/landowner-compensation-easement.pdf>
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valuation following the Just Terms legislation, we assume that 'compensation costs' refer to the administrative cost of finalising land purchase/acquisition agreement, not the cost of the land itself. Again, this is not material.

In summary, we think that there is no reason Transgrid cannot know the cost of land acquisition to a Class 2 level even if not all of the land has been actually acquired.

As always we would be happy to discuss any part of this submission.

Kind regards,

A handwritten signature in black ink, appearing to read 'A Richards', written in a cursive style.

Andrew Richards
Chief Executive Officer

Attachment – Level of Cost Accuracy Proposed by Transgrid

| Category capex | Description | Expected Class estimate for Stage 2 CPA | Comments | Expected Class estimate for PACR | PACR Cost | | |
|---------------------|---|---|---|----------------------------------|---------------------------------|---|-------|
| | | | | | Real\$2020 (as per the PACR) | Real\$2018 (as per the Humelink CPA) | Share |
| Direct capex | | | | | | | |
| Procurement | Substations and transmission lines | Class 3/2 | Striving for Class 2 but will be dependent on level of accuracy possible for high risk scope items which are part of the ECI procurement. | Class 4 | 1754 | 1732 | 54% |
| | Long-lead time equipment – Substation transformers and reactors | Class 2 | Options to be exercised to secure slots to maintain program. Further design work to be completed to achieve class 2 accuracy | Class 4 | 121 | 119 | 4% |
| Land acquisitions | Acquisition costs | Class 3 | Class 3 due to the anticipated number of compulsory acquisitions and variability in these numbers. | Class 4 | 207 | 205 | 6% |
| | Environmental 'offset' costs | Class 2 | Class 2 due to timing of and inherent forecasting uncertainties related to how biodiversity offsets will be finalized and implemented. | Class 4 | 922 | 911 | 28% |
| Other Costs | | | | | 0 | 0 | 0% |

| Labour and indirect capex (Development and Approvals) | | | | | | | |
|---|---|---------|---|--|-------------|-------------|-------------|
| Labour and related costs | | | | | | | |
| Project team resources | Labour and corporate support for project management, procurement, land and environmental activities | Class 2 | Class 2 due to potential variability in project team requirements and turnover. | | 262 | 259 | 8% |
| Indirect Costs | | | | | | | |
| Project development | Development, engineering, legal and economic support | Class 2 | Class 2 due to variability in project team support requirements, including variable legal advisory costs. | | | | |
| Land and environment | Fees, labour and indirect costs | Class 2 | Class 2 due to variability in land and easement support requirements based on number of complex and/or compulsory acquisitions. | | | | |
| Procurement | N/A | | Expected direct costs only | | | | |
| Total | | | | | 3266 | 3226 | 100% |