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Assessment of TransGrid's revised capital expenditure for Project EnergyConnect

Final report prepared for TransGrid

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Disclaimer

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1. Introduction

1.1 Project context

Project EnergyConnect (PEC) is a proposed new interconnector between New South Wales (NSW) and South Australia (SA) that is being developed jointly by TransGrid (for the investment within NSW) and ElectraNet (for the investment within SA).

PEC was accepted by the Australian Energy Regulator (AER) as a contingent project in TransGrid's regulatory determination for the current regulatory control period.[1] Since then, a Regulatory Investment Test for Transmission (RIT-T) has been completed and the AER has determined that the preferred option identified in the RIT-T satisfies the RIT-T.

To proceed with PEC, TransGrid lodged a contingent project application (CPA) with the AER on 29 June 2020 and an updated CPA on the 30 September 2020 to vary its current regulatory determination. TransGrid's capex forecast in its updated CPA was based on the Best and Final Offer (BAFO) from the preferred bidder ('the Contractor'). This BAFO capex forecast was $1,910.9 million ($2017-18), including equity raising costs, to construct the NSW component of PEC.

The AER released a preliminary position on TransGrid's CPA for PEC on 18 December 2020.[2] The AER's key preliminary positions include: [3]

- the project trigger required for TransGrid to lodge a CPA has not occurred because the AER is not satisfied that the TransGrid board has committed to the project; and
- the AER's view of the prudent and efficient capex for delivering the NSW proportion of PEC is $1,695.7 million ($2017-18), which is 10 per cent less than TransGrid's BAFO capex forecast.

TransGrid is now submitting a revised capex forecast for the NSW portion of PEC to the AER ('Revised capex application'). This revised forecast reflects TransGrid's consideration of the issues raised in the AER's preliminary position, as well as more recent information since TransGrid's BAFO forecast was submitted.

1.2 The scope of our engagement

TransGrid has engaged us to assess whether the changes it has made to its capex forecast for PEC result in proposed capex that is prudent and efficient, in line with the requirements in the National Electricity Rules (NER).

In preparing this report we have had regard to:

- TransGrid's PEC CPA revised capex application report; and
- reports prepared by Jones Lang LaSalle (JLL) and WSP responding to the AER's preliminary position.

We understand that these reports are being provided to the AER by TransGrid in support of its revised capex application.

The remainder of this report is set out as follows:

[1] AER, *TransGrid transmission determination 2018 to 2023 | Attachment 6 – Capital expenditure*, Final decision, May 2018, pp 137-138.

[2] AER, *preliminary position, TransGrid Contingent Project, Project EnergyConnect*, 18 December 2020

[3] *Ibid.*, pp 2-3

- section 2 summarises the AER's preliminary position and the subsequent changes TransGrid has made to its capex forecast for PEC in its revised capex application;
- section 3 sets out how TransGrid's tendered works capex forecast has changed and our assessment of this revised capex forecast;
- section 4 describes TransGrid's revised capex forecast for environmental offset costs and our observations on the revised capex forecast;
- section 5 sets out TransGrid's revised capex forecast for biodiversity risk costs and our comments on the revised capex forecast, as well as the impact of excluding this expenditure from the operation of the AER's Capital Expenditure Sharing Scheme (CESS);
- section 6 discusses TransGrid's revised capex for property and land acquisition costs and our assessment of this revised forecast; and
- section 7 summarises our conclusions on whether TransGrid's revised capex forecast is prudent and efficient.

2. The AER's preliminary position and TransGrid's revised capex forecast

2.1 The AER's preliminary position

The AER's preliminary position is that the prudent and efficient capex for delivering the NSW proportion of PEC is $1,695.7 million ($2017-18), which is 10 per cent less than TransGrid's BAFO capex forecast.

The differences between TransGrid's BAFO capex forecast and the AER's preliminary position are summarised in the table below.

Table 1: Difference between TransGrid's BAFO capex forecast and the AER's preliminary position[4]

Cost item	AER's assessment	Reduction ($millions, 2017-18)
Tendered works – Route deviations	TransGrid's BAFO capex forecast includes an allowance for 20 km of additional route. The AER believes that TransGrid has already sought to mitigate the risk of route deviations through avoiding Darlington Point and aligning the route with existing easements where possible. Given this, the AER believes that TransGrid has overestimated the likelihood that the allowance will be required. The AER has assumed that the likelihood of the route deviations being required is 35%, which is consistent with ElectraNet's approach to this risk.	From $30 m to $21.2 m, or a reduction of $8.8 m[5]
Tendered works – Environmental impact statement approval delay	The AER considers that it is reasonable to have an allowance for a delay in the Environmental Impact Statement (EIS) approval process above the minimum approval times. However, the AER considers that a probabilistic approach should be applied and has applied a likelihood of 75% that such a delay occurs.	From $11.9 m to $8.9 m, or a reduction of $3 m
Tendered works – COVID 19	The AER considers that it is reasonable to include an allowance for a COVID-19 event, which could delay the project schedule. However, the AER considers that a probabilistic approach should be applied and has applied a likelihood of 75% that such a delay occurs.	From $8 m to $6 m, or a reduction of $2 m
Tendered works – Extreme weather event	TransGrid has estimated these costs by making an allowance for a 1 in 100 year flood event that would increase the costs of construction. The AER contends that TransGrid's approach assumes that there are nine chances (one for each segment of the line), and so overestimates the likelihood that this risk would occur. The AER considers that floods on each segment of the line are not independent events, and so TransGrid has overestimated the probability that a 1 in 100 year event would occur.	From $10.7 m to $1.2 m, or a reduction of $9.5 m
Negotiation margin for land and easement acquisition	TransGrid has assumed a [redacted]% negotiation margin ($30 m) for land and easement acquisitions in its BAFO forecast. The AER contends this is an overestimate as TransGrid is currently achieving a margin of around 7 per cent on its existing acquisitions and TransGrid has already undertaken activity to reduce the need for a margin, including selecting a proposed corridor running parallel to existing assets and avoiding Darlington Point. The AER believes an allowance of $6 m is sufficient and aligns with the average margin achieved by TransGrid to date.	From $29.9 m to $5.9 m, or a reduction of $24 m
Environmental offset costs and biodiversity risks	TransGrid's BAFO capex forecast includes $127.4 million for its environmental offset costs and a contingency of $38.2 million for additional biodiversity risk costs. The AER's preliminary position is that $26 million is a reasonable allowance for environmental offset costs based on updated clearance impacts for the Western section and the costs of BSA agreements TransGrid has already negotiated. The AER also does not consider it reasonable for TransGrid to have an additional allowance for biodiversity risk as the full clearance scenario has not been proposed by TransGrid in its EIS or other documents.	From $165.6 m to $26.4 m, or a reduction of $139.2 m

[4] AER, *preliminary position, TransGrid Contingent Project, Project EnergyConnect*, 18 December 2020

[5] The AER states that it reduced TransGrid's allowance from $32.6 million to $11.4 million. TransGrid has indicted that these are nominal values and translates into a reduction from 30 million to $8 million in $2017-18.

2.2 Summary of the changes TransGrid has made in its revised capex application

TransGrid is submitting a revised capex forecast to the AER. This revised forecast reflects TransGrid's consideration of the issues raised in the AER's preliminary position, as well as more recent information since TransGrid's BAFO forecast was submitted.

The areas that have been revised in TransGrid's revised capex application compared to its September 2020 BAFO capex forecast are:

- for tendered works, TransGrid has:
  - updated its capex forecast for route deviations based on actual and potential deviations to date; and
  - accepted the AER's preliminary position for other construction costs and adjusted its capex forecast accordingly;
- for environmental offset costs, TransGrid has:
  - revised its environmental offset costs to reflect updated advice from WSP, its accredited assessor, which incorporates outcomes from the Biodiversity Development Assessment Report (BDAR) assessment for the Western section and additional field surveys for the Eastern section of PEC;
- for biodiversity risks costs, TransGrid has proposed two capex forecasts depending on whether the CESS applies to the environmental offset costs associated with PEC:
  - if the CESS applies, TransGrid has proposed a revised biodiversity risk cost to reflect updated advice from WSP, which has considered the risk of not being able to identify and establish Biodiversity Stewardship Agreements (BSAs) for the Eastern section of PEC; and
  - if the AER decides to exclude these costs from the CESS, TransGrid has proposed to accept the AER's preliminary position and not include an allowance for biodiversity risk costs in its capex forecast;
- for property and easements, TransGrid has:
  - proposed a negotiation margin for property and easement acquisitions of 33 per cent, which is just above the mid-point between AER's preliminary position and updated advice from its property advisors, JLL, who support maintaining a [redacted] per cent negotiation margin; and
  - removed certain easement costs that would be avoided if the potential route deviation into Wagga Wagga goes ahead.

3. Tendered works

3.1 Route deviations

3.1.1 TransGrid's revised capex forecast

In its BAFO forecast, TransGrid had included a 20 km allowance for potential route deviations. TransGrid considered that this was a necessary allowance as it may need to alter or refine its route to improve the constructability of the project or minimise community opposition, and the environment and property impacts of the project. TransGrid's BAFO capex forecast for route deviations was $30 million ($2017-18). [6]

In its preliminary position, the AER considered that TransGrid has overestimated the likelihood that a route deviation would be required. The AER pointed out that the revised route for PEC avoided Darlington Point and aligns with existing transmission easements for half the corridor. The AER believes that this should reduce the likelihood that route deviations are required.

The AER considers that there is a 35 per cent likelihood that route deviations will be required, noting that this is consistent with ElectraNet's approach to estimating route deviation risk. The AER applied this likelihood and estimated that a reasonable allowance to cover this risk is $8.8 million ($2017-18). [7]

TransGrid's revised capex forecast for route deviation comprises:

- $5.6 million ($2017-18) for line deviations already identified;
- $9.1 million ($2017-18) for expected line deviations in the Wagga Wagga area (or $7.5 million once avoided easement costs are included); and
- $12.1 million ($2017-18) to cover expected deviations on other sections of PEC.

In total, TransGrid's revised capex forecast for route deviations is $26.8 million ($2017-18), or $25.2 million ($2017-18) once avoided easement costs are included.

The table below summaries how TransGrid has calculated each of the costs.

Table 2: Summary of TransGrid's revised capex for route deviations

Cost category	Description
Line deviations identified so far	Since September 2020, TransGrid has investigated additional route alignment options for the 97.6 km section between Dinawan and Lockhart. TransGrid identified the preferred option by considering multiple factors, including cost, constructability and stakeholder, property and environmental impacts of each options. The preferred route alignment involves an additional 4.64 km of transmission line and is estimated to cost an additional $5.6 million ($2017-18) based on budget proposals received from the Contractor to undertake this work.
Expected Wagga Wagga line deviation	TransGrid believes there is significant uncertainty surrounding the last 8 km between Dinawan and Wagga Wagga. That is, TransGrid may need to develop an alternative solution if there are any heritage or environmental issues, or to mitigate community opposition. TransGrid's revised capex forecast has been calculated based on the following assumptions: • there is a 35% likelihood that this risk will occur, which is consistent with the AER's preliminary positionpreliminary position;

[6] The AER states TransGrid's proposed capex as $32.6 million. TransGrid has indicated that this translates into a $30 million in $2017-18.

[7] The AER states that it reduced TransGrid's allowance to $11.4 million. TransGrid has indicted that these are nominal values and is $8 million in $2017-18.

	• the most likely/cheapest alternative solution is to rebuild existing infrastructure to accommodate PEC, which is estimated to cost $26.1 million ($2017-18); and • the most likely/cheapest alternative solution would reduce TransGrid's easement acquisition costs by $4.8 million ($2017-18).
Line deviations for remaining section of PEC	The deviations identified so far are confined within a 97.6 km section between Dinawan and Lockhart. TransGrid has made the following assumptions to estimate the line deviations required for other sections of PEC in NSW: • there is a 35% likelihood that this risk will occur, which is consistent with the AER's preliminary position; • an assumed cost of deviation of $5.6 million per 97.6 km of transmission line ($2017-18), based on TransGrid's experience with deviations between Dinawan and Lockhart; and • estimated line length of 596.4 km for the other sections of PEC in NSW – calculated as 694 km for the total length of PEC in NSW minus the 97.6 km section between Dinawan and Lockhart.

3.1.2 Our observations

We make the following observations on TransGrid's revised capex forecast for line deviations:

- TransGrid's forecast now incorporates route deviations which have been confirmed as necessary since the time of its BAFO capex forecast;
- the potential reasons for deviations, including costs, constructability, stakeholder, environmental, and property considerations (and the consequent risks of delays to the project), appear to be reasonable and valid – it follows that the route deviations identified by TransGrid are likely to be prudent, even though they involve building additional transmission line length and so will incur a higher cost;
- where relevant, TransGrid has assumed that the likelihood that a deviation will be needed is 35 per cent, which is consistent with the AER's preliminary position; and
- the costing assumptions TransGrid has adopted are either based on a budget proposal from the Contractor or represent the cheapest alternative option identified. Such an approach is likely to lead to an efficient cost estimate, although we are not able to verify the processes that were adopted in each case and therefore whether the proposed cost is efficient.

Based on the above, we consider TransGrid's approach in developing its revised capex forecast for route deviations is reasonable and the amount is likely to be prudent and efficient, but we are not able to verify the costing assumptions which underpin this amount.

3.2 Other construction costs

The AER's preliminary position has also reduced the forecast capex for COVID-19 events, extreme weather events and EIS delays, compared with those put forward by TransGrid in its BAFO forecast, on the basis that these are risk events, and therefore an appropriate likelihood assumption should be applied to the estimated costs.

We note that TransGrid has accepted the AER's preliminary position in relation to these costs and revised its forecast capex accordingly. Given this, we have not further assessed the reasonableness of the estimates for these three cost categories.

4. Environmental offset costs

4.1 Overview of TransGrid's capex forecasts and the AER's preliminary position

4.1.1 How the estimate of the environmental credit obligation for PEC has changed over time

The *NSW Biodiversity Conservation Act 2016* and the *Commonwealth Environmental and Biodiversity Conservation Act 1999* requires TransGrid to 'offset' the effect that PEC will have on biodiversity.

The Acts require TransGrid to submit a Biodiversity Development Assessment report (BDAR) to the Department of Planning, Industry and Environment (DPIE) and the Biodiversity Conservation Division (BCD). The BDAR must be developed by an accredited assessor and set out:

- the steps TransGrid has taken to avoid and minimise PEC's impacts on biodiversity; and
- the number and type of ecosystem and species credits required to offset the residual impact of the project on biodiversity ('credit obligation'), which must be calculated using the biodiversity assessment method (BAM).

DPIE and BCD will then determine whether to approve PEC and the conditions of approval, including the credit obligation associated with the project. TransGrid can only commence with PEC once it has met its credit obligation.

TransGrid is progressing the BDAR and EIS process separately for the Western and Eastern portions of PEC:

- the BDAR for the Western region is close to completion and BCD has already provided some feedback on the draft BDAR – as such the BDAR, and so credit obligation, for the Western region is close to final; and
- the BDAR for the Eastern region is still under preparation, and so estimates of the credit obligation are necessarily preliminary.

WSP, an accredited assessor, is preparing the BDARs for PEC on behalf of TransGrid. WSP has also provided advice to TransGrid on the expected credit obligation and associated costs. We understand that the credit obligation and associated costs can change significantly over time due to a number of factors, such as accuracy of desktop information on which initial estimates are typically based, changes to the biodiversity scheme policy, market fluctuations in credit prices and the availability of suitable 'like for like' offset areas required to establish biodiversity stewardship agreements (BSAs).

Notwithstanding this, we note that WSP has provided estimates of the likely credit obligation and associated costs for PEC at several points during the progression of the PEC project. The table below provides a summary of how WSP's estimates have changed over time and the basis for the change.

Table 3: How the estimated environmental credit obligation has changed over time

Date of WSP advice	Basis for estimate and estimated credits
November 2019	WSP estimated that the number of ecosystem credits required for PEC would be 19,848 in the lower scenario, 24,811 in the mid-range scenario, and 29,773 in the upper scenario. This estimate was developed based on an initial desktop assessment and preliminary clearing assumptions.
September 2020	WSP estimated that 29,380 ecosystem credits would be required. This estimate was based on refined clearing assumptions and detailed field validated mapping of biodiversity values for areas of potential impact on the Western section and portions of the Eastern section.
October 2020	WSP estimated that 31,144 ecosystem credits would be required for the draft BDAR, which was submitted to the DPIE and BCD.
Revised capex application	WSP's most recent estimate is that 38,782 ecosystem credits will be required. The required credits for the Western section have been revised based on feedback from BCD on the draft BDAR. The required credits for the Eastern section have also been revised using the most recent information on tower designs/route alignment and field survey data.

4.1.2 TransGrid's BAFO forecast

TransGrid's BAFO capex forecast for environmental offset costs was $127.4 million ($2017-18) to meet the estimated credit lability of 29,380 ecosystem credits plus species offset credits. TransGrid's BAFO capex forecast was based on the advice and credit estimates from WSP provided in September 2020. This estimated reflected the proposed route alignment, which avoids Darlington Point.

4.1.3 The AER's preliminary position

The AER's preliminary position reduced TransGrid's BAFO capex forecast by $101.9 million ($2017-18), or 79 per cent, to $26.4 million ($2017-18). The AER considered this appropriate because, in its view:

- the credit obligation would be lower than TransGrid's estimate – the AER reviewed the draft BDAR for the Western section submitted to BCD in October 2020 and concluded that the expected credit obligation is lower than WSP's lower scenario in its November 2019 report; and
- TransGrid could meet its credit obligation through one biodiversity stewardship agreement (BSA) – in particular, the AER noted that one of the BSAs TransGrid had already negotiated is expected to generate 48,000 ecosystem credits and species credits.

In addition, the AER considered that TransGrid had already sought to minimise the environmental and biodiversity impact of PEC by:

- proposing a revised route and using existing infrastructure corridors where possible – the AER expects that this would minimise the project's environmental impacts; and
- avoiding the use of guyed towers, which have a larger footprint and so higher environmental impact.

The AER's preliminary position paper also points to specific provision for transmission lines in the NSW offsets policy framework, which allows for calculation of partial vegetation retention within impact zones.

4.1.4 TransGrid's revised capex forecast

TransGrid's revised capex estimate is based on:

- WSP's most recent estimate of the credit obligation for PEC, which incorporates revised estimates for the:
  - Western region, which have been updated based on feedback from DPIE and BCD on the BDAR; and
  - Eastern region, which have been updated based on additional field data and project alignment;

- a biodiversity offset strategy that seeks to minimise TransGrid's cost of meeting the credit obligation for PEC – in practice, this involves meeting credit obligations through BSAs, with residual obligations met through payments into the biodiversity conservation fund (BCF).

TransGrid's revised capex forecast for environmental offset costs is $148.2 million ($2017-18). This comprises:

- $80.1 million ($2017-18) to cover the costs of acquiring BSAs;
- $46.2 million ($2017-18) for payments into the BCF to cover residual ecosystem credit liabilities; and
- $21.9 million ($2017-18) for payments into the BCF to cover species credit obligation.

4.2 Our assessment of the revised environmental offset costs

As noted in our previous report, we do not have the relevant expertise to independently validate the reasonableness of TransGrid's or WSP's approach to calculating environmental offset costs.

We note that WSP has provided a report to TransGrid that directly addresses the points raised by the AER in its preliminary position. In particular, WSP notes that:

- the AER appears to have misinterpreted the draft BDAR submitted to DPIE – the draft BDAR suggests that the number of credits required for the Western section is 8,845, which is 25 per cent above those estimated in WSP's September 2020 report;
- TransGrid will not be able to meet its entire credit obligation through a single BSA – rather it is expected that TransGrid will enter into multiple BSAs, with residual obligations offset through payments into the BCF; and
- WSP's credit obligation revised estimate already factors in the proposed route alignment and tower design, including:
  - the revised route, most notably, the avoidance of Darlington Point;
  - the fact that 71 per cent of the route uses existing infrastructure corridors;
  - the use, or otherwise, of guyed towers; and
  - the NSW offsets policy framework.

We make the following observations on TransGrid's revised environment offset costs:

- TransGrid's revised forecast has been developed by an accredited assessor expert, WSP, who has developed its estimates using the New South Wales Government's BAM calculator;
- it is based on most recent estimate of TransGrid's credit obligation, which supersedes the much earlier estimate (November 2019) referenced in the AER's preliminary position, which reflected a desktop study rather than the actual field data that is now available. In particular, the most recent estimate incorporates:
  - the most recent project design and route alignment;
  - the current progress of the BDAR for the Western region, including feedback from BCD; and
  - additional field information and project design for the Eastern region; and
- TransGrid has adopted a biodiversity offset strategy that seeks to minimise the overall costs of meeting its credit obligation – this is expected to involve a mixed BSA and BCF approach, where TransGrid will enter into multiple BSAs and residual obligation will be met through payments into the BCF.

5. Biodiversity offset risk costs

5.1 Overview of TransGrid's capex forecast and the AER's preliminary position

5.1.1 TransGrid's BAFO capex forecast

TransGrid's BAFO capex forecast for biodiversity offset costs was based on a limited clearing scenario, where there is only partial clearing of vegetation. However, the limited clearing scenario assumes that approval from NSW Department of Planning, Industry and Environment (DPIE) is obtained, which will occur at a later stage of the project once there is more clarity on the project's impact on biodiversity and species.

We understand from reviewing the advice from WSP that there is a risk that DPIE will require TransGrid to implement a full clearing scenario, thereby requiring TransGrid to offset more credits than under the limited clearing approach. In its BAFO capex forecast TransGrid included a contingency amount to cover higher than expected biodiversity offset costs based on: [8]

- a 30 per cent likelihood that DPIE will reject TransGrid's proposed approach of limited clearing and require TransGrid to undertake full clearing – this is based on an estimate by WSP that there is a 20 to 40 per cent probability that a full clearing scenario will occur; and
- the maximum biodiversity offset costs under a full clearing scenario of $254.7 million ($2017-18) – this is $127.3 million ($2017-18) higher than the limited clearing scenario.

TransGrid's estimated contingency allowance was therefore $38.2 million ($2017-18), ie, 0.3 multiplied by $127.3 million ($2017-18), the cost difference between the full clearing scenario and limited clearing scenario.

5.1.2 The AER's preliminary position

The AER has not accepted TransGrid's capex forecast for biodiversity offset risks in its preliminary position and did not make any allowance for biodiversity risk costs.

The AER states that: [9]

> The full clearance scenario is not a construction or environmental scenario that has been proposed by TransGrid in its Environmental Impact Statements or its BDAR or engineering documents. This was also not a scenario that WSP assigned any probability to occurring.

5.1.3 TransGrid's revised capex forecast if the CESS applies to environmental offset costs

TransGrid distinguishes in its revised capex forecast for PEC between:

- a capex forecast based on an assumption that the AER applies the CESS incentive mechanism to the environmental offset costs associated with PEC, and which therefore includes a biodiversity risk cost (updated since the earlier BAFO forecast); and
- a capex forecast based on an assumption that the AER decides to exclude the environmental offset costs associated with PEC from the CESS, and which therefore does not include a biodiversity risk cost.

[8] TransGrid, *Supplementary Capex Forecasting Methodology for Project EnergyConnect - BAFO*, Contingent Project Application for Project EnergyConnect, 30 September 2020, section 5.4.

[9] AER, *Preliminary Position, TransGrid Contingent Project, Project EnergyConnect*, 18 December 2020, p24.

In response to the AER's preliminary position, TransGrid asked WSP to reconsider what an appropriate risk cost would be to cover the biodiversity offset risk costs associated with PEC. WSP has noted in its advice that:

- its earlier analysis of biodiversity offset costs already took into account the route alignment, tower designs and NSW offset policy; and
- the clearing requirement for PEC is only one source of risk, other sources of risk include:
  - additional impacts identified by the relevant authority;
  - requirements from the relevant consent authority to change the design of access tracks; and
  - generating fewer than expected certificates from the BSAs, which would increase TransGrid's payment through the BCF.

TransGrid's revised capex forecast for biodiversity offset risk costs is $18.5 million ($2017-18). This is based on advice from WSP and has been calculated as follows:

- there is a 20 per cent probability that TransGrid will not be able to identify and establish BSAs for the Eastern section, which would require TransGrid to rely on payments to the BCF to meet its credit obligations; and
- meeting credit obligations through payments to the BCF would cost TransGrid $187.6 million ($2017-18), which would be $92.5 million ($2017-18) more expensive than TransGrid's proposed strategy of having a mixed BSA and BCF approach.

TransGrid has noted that it considers this to be a conversative estimate as it is calculated based on one risk only and does not include any risk costs for the Western section of PEC.

5.1.4 TransGrid's revised capex forecast if the CESS does not apply to environmental offset costs

If the AER determines that environmental offset costs would be more appropriately excluded from the CESS, TransGrid has proposed to accept the AER's preliminary position and not include an allowance for biodiversity risk costs in its capex forecast. It follows that in this circumstance TransGrid's proposed capex forecast for PEC is $18.5 million ($2017-18) lower.

5.2 Our assessment of the revised biodiversity offset risk costs

We have reviewed TransGrid's approach to calculating the contingency cost allowance for higher than expected biodiversity offset costs. We have assessed:

- what allowance (if any) is made for this risk as part of TransGrid's base cost estimate;
- whether there should be a contingency cost allowance for this risk;
- if so, whether the contingency cost allowance proposed by TransGrid is appropriate; and
- if not, our assessment of why there should not be a contingency cost allowance.

We make the following observations:

- there is no allowance made for biodiversity offset cost risk in TransGrid's base cost estimate;
- this risk is uncertain and outside of TransGrid's control - whether TransGrid can enter into BSAs and the amount of credits generated by any BSAs depends on the availability of suitable land and the willingness of landowners to enter into an agreement with TransGrid;
- this appears to be an asymmetric risk – the base cost estimate assumes that TransGrid can enter into suitable BSAs. TransGrid would need to rely more heavily on payments into the BCF if this is not the case, which could substantially increase the costs of meeting its credit obligation; and

- there is no reasonable and efficient way for TransGrid to pass on the risks to the Contractor or cover this risk through insurance.

The above suggests that it is appropriate for TransGrid to have a capex allowance to cover the residual risks of higher than expected biodiversity offset costs. That said, we do not have the relevant expertise to validate the amount estimated by WSP.

5.3 Exclusion of biodiversity offset costs from the CESS

As noted above, the risks associated with outturn biodiversity offset costs, arise from factors that are not within TransGrid's control.

Excluding these costs from the operation of the CESS would significantly reduce the risk TransGrid faces in relation to the outturn level of these costs, particularly as they are expected to be incurred in 2021-22 or 2022-23, which are the last two years of TransGrid's current regulatory period.

5.3.1 The implications of excluding biodiversity offset costs from the CESS

The CESS provides network service providers (NSPs) with a financial incentive to achieve efficient capital expenditure outcomes over the regulatory period – NSPs are penalised under the CESS where they over-spend their capital allowance and are rewarded where they under-spend. More specifically, an NSP retains 30 per cent of any under/over-spend, thereby creating a financial incentive for cost efficiencies. The benefit or cost of the remaining 70 per cent under/over-spend is borne by consumers.

Where the CESS is not applied, incentives for capex efficiencies are determined by:

- the value of capex rolled into the Regulatory Asset Base (RAB) at the end of the regulatory period; and
- any excess/foregone return on capital earned on any under/over spend during the regulatory period, which will depend on when the under/over-spend occurs during the period.

Under the NER, in the absence of an ex-post review of TransGrid's capex, the full amount of the biodiversity offset costs incurred (including any over- or under-spend) will be rolled into TransGrid's RAB at the end of the regulatory period. However, TransGrid would not earn a real return on any under/over-spend incurred in relation to these costs.

If the under/over-spending occurs in the first year of the regulatory period, then the NSP loses out on four years of return on capital on the amount of the under/over-spend. However, if an under/over-spend occurs in the last year of a regulatory period, then the NSP does not loss out on (or benefit from) any 'return on' capital.

We understand that the biodiversity offset costs for PEC are expected to be incurred in the next two financial years. This coincides with the last two years of TransGrid's current regulatory period, and so TransGrid will incur little or no losses or gains from any under/over-spending on biodiversity offset costs compared with those forecast, if the CESS is not applied to this expenditure. It follows that not applying the CESS would effectively mean TransGrid can 'pass through' most of the differences in biodiversity offset costs associated with PEC above or below that allowed for in the AER's CPA determination.

5.3.2 Assessment of excluding biodiversity offset costs from the CESS

There is significant uncertainty regarding the outturn biodiversity offset costs associated with PEC. This is because:

- the credit obligation will be determined by DPIE and BCD; and
- the costs of meeting the credit obligation will depend to a large extent on whether TransGrid can enter into suitable, like-for-like BSAs, and avoid making (more expensive) payments to the BCF. This in turn

will depend on availability of suitable like-for-like BSA sites and the cost at which landowners are willing to enter into agreements.

To a large extent, therefore, the outturn costs associated with biodiversity offsets will be outside of TransGrid's control. The one element which is within TransGrid's control is the negotiation around the costs of land acquisitions, which we discuss further below.

Under the NER, material changes in costs outside of the NSPs control are typically dealt with through the cost pass through provisions. NSPs are able to propose 'nominated cost pass through events' as part of their regulatory proposals for circumstances that meet specified criteria, namely:

- whether the nature or type of event can be clearly identified at the time the determination is made;
- whether a prudent service provider could reasonably prevent an event of that nature or type from occurring or substantially mitigate the cost impact of such an event; and
- whether the relevant service provider could insure against the event.

The incurring of additional biodiversity offset costs for PEC above those allowed for in the AER's CPA determination would appear to be consistent with the application of these principles. In particular, the potential difference between actual and forecast biodiversity offset costs are:

- in excess of $100 million, and so are material;
- not known at the time of submission of the revised capex application, but will become certain as the project proceeds;
- largely determined by external factors, including:
  - the quantum of the credit obligation associated with PEC, which is determined by BCD and DPIE; and
  - the availability of suitable like-for-like BSAs, which is outside of the control of TransGrid and will have a substantive impact on the costs of meeting the credit obligation; and
- not insurable.

Further, the process set out in the NER for determining the approved cost pass through amount would allow the AER to confirm that the outturn biodiversity offset costs were efficient, which would mitigate any concerns regarding TransGrid's incentives to minimise biodiversity offset costs.

Notwithstanding the above, the NER provisions relating to the scope of the AER's decision on a CPA do not appear to allow TransGrid to propose, or the AER to approve, a new nominated cost pass through event.

In this circumstance, we consider that a decision by the AER for the CESS not to apply to biodiversity offset costs would have a similar outcome, given the expected timing of expenditure within the regulatory period. We understand that AER has the discretion under its CESS guideline to exclude elements of an NSP's capex from the calculation of the CESS.

Not applying the CESS to biodiversity offset costs would reduce the penalty if TransGrid is required to spend more on offsets than anticipated, while also reducing any reward it would receive if outturn costs are less than expected.

As mentioned above, if the CESS does not apply to biodiversity offset costs, then TransGrid will not incur any losses or gains if the under/over spend in relation to those costs occurs in the last year of the regulatory period. For costs that are incurred in the penultimate year, TransGrid would receive a modest penalty/reward on any biodiversity offset cost overruns/underspend. Specifically, TransGrid would be deprived of the real return in the final year of the regulatory period on any overspend (or would retain the real return it earned in the event of an underspend) before the expenditure is rolled into the RAB at the start of the following regulatory period.

As noted above, TransGrid does have control over its negotiations with landowners to enter into BSAs, which is one of the factors that will determine biodiversity cost outcomes. Excluding biodiversity offset costs from the CESS may provide limited incentives for TransGrid to achieve prudent and efficient cost outcomes for BSA purchases. However, we understand that TransGrid has suggested it would be willing to appoint an external probity advisor, and/or to allow AER observation of the process for negotiating the cost of the BSA agreements it enters into. This transparency would go some way to mitigating concerns around TransGrid's incentives to achieve efficient cost outcomes in the absence of the application of the CESS to this expenditure, whilst allowing TransGrid to recover the efficient costs associated with the required biodiversity offsets.

By way of summary:

- total outturn biodiversity costs will largely be determined by external factors;
- during a regulatory determination process, these costs would typically be treated as a nominated cost pass through – although we understand that this is not an available option for PEC through the CPA process;
- excluding biodiversity offset costs from the CESS would achieve similar outcomes as a cost pass through, as the expenditure is expected to be incurred in the last two years of the current regulatory period; and
- an external probity process with AER observer status would mitigate concerns around TransGrid's incentives to achieve efficient cost outcomes in the absence of the application of the CESS.

6. Negotiation margin for land and property acquisition

6.1 Overview of TransGrid's capex

6.1.1 TransGrid's BAFO forecast

TransGrid will need to acquire easements and land to complete PEC. TransGrid's BAFO capex forecast assessed the value of easements and land to be acquired at $59.8 million ($2017-18) based on advice from JLL. JLL calculated this based on factors including:

- market value of the land acquired;
- increases or decreases in value of other land adjoining the acquired land owned by claimants; and
- losses attributable to disturbance.

JLL considered the assessed value as the minimum amount that TransGrid should pay landowners under the Land Acquisition (Just Terms Compensation) Act 1991. It follows that the expected amount is higher as some agreements will need to be settled above this minimum amount.

To understand the expected amount that will be required, TransGrid asked JLL to provide advice on what is a reasonable negotiation margin, above the minimum amount. JLL considered that a [redacted] per cent negotiation margin was reasonable for PEC, or $29.9 million ($2017-18).

6.1.2 The AER's preliminary position

In its preliminary position, the AER put forward its view that a reasonable negotiation margin for land and property acquisition for PEC is 10 per cent, leading to an allowance of $5.9 million ($2017-18) rather than the $29.9 million ($2017-18) proposed by TransGrid. The AER's reasoning for this position was:

- TransGrid has already secured easements for up to 20 per cent of the route and the average margin achieved to date is 7 per cent;
- the remaining settlements are considered to be lower risk due to:
  - a significant proportion (71 per cent) of the proposed corridor running parallel to existing 220kV easements, which should minimise the impacts on landowners and their correspondingly likelihood of seeking higher compensation for their land;
  - route changes to avoid regions where there is a 'high risk' of negotiations not being successful and requiring compulsory acquisition – in particular, avoiding extensive irrigation zones and agricultural land near Darlington Point; and
  - changes to the scope for the 220 kV line between Buronga and Red Cliffs to rebuild the existing 220kV line rather than build along existing infrastructure will minimise easement requirements.

6.1.3 TransGrid's revised capex forecast

TransGrid has engaged JLL to review the AER's preliminary position and reconsider what an appropriate negotiation margin should be. JLL's advice is that a [redacted] per cent margin remains appropriate because:

- the negotiation margin has already increased and is expected to increase further in the future – the expected negotiation margin for agreements made, or expected to be agreed where counteroffers have been received, is 63 per cent;

- the remaining settlements are not expected to have lower risks or require a lower negotiation margin - JLL's opinion is that there are factors that indicate that the Eastern section will be require a higher margin than the agreements reached to date for the Western section; and
- there is other qualitative evidence that suggests that a [redacted] per cent margin remains appropriate.

Notwithstanding JLL's updated advice that a negotiation margin of $29.9 million ($2017-18), or [redacted] per cent, remains appropriate, TransGrid's revised capex forecast for the negotiation margin is $19.7 million ($2017-18). TransGrid has stated that it considers this a reasonable compromise between the AER's preliminary position and the updated advice from JLL, as it is just above the mid-point of the two estimates.

6.2 Our observations

We make the following observations:

- TransGrid's revised capex forecast is close to the mid point between the AER's preliminary position and advice from independent experts, JLL – and appears to reflect what TransGrid considers to be a reasonable compromise, rather than what it expects to be a reasonable estimate of this cost;
- JLL's expected negotiation margin across both agreements made to date and the expected outcome where a counter offer has been received, is [redacted] per cent – this is substantially above the 7 per cent referred to by the AER and reflects the very high counter offers that have been received;
- the expectation that the negotiation margin will increase over time is consistent with the economic theory of the holdout problem – that is, a landowner may strategically 'hold out' for a higher price, even though the price offered by TransGrid is one that is acceptable to the landowner;
- JLL's independent opinion is that settlements for the Eastern section will require a higher margin than the agreements reached to date for the Western section, given the nature of the different landholdings; and
- although TransGrid could undertake compulsory acquisition if the asking price of sellers is too high, it appears prudent to avoid this to the extent possible to avoid delays to the project schedule and minimise community opposition to the project.

Given the above, we believe that a [redacted] per cent negotiation margin (implying a cost of $29.9 million ($2017-18)) is likely to be prudent and efficient as it is supported by JLL's independent advice, is lower than the current expected margin that TransGrid will achieve across agreements made and those outstanding but with a counter offer, and it allows TransGrid to reduce the need for any compulsory acquisitions.

It follows that we consider TransGrid's proposed capex forecast of $19.7 million ($2017-18) for the negotiation margin for land and property acquisitions is likely to be lower than what a prudent and efficient network service provider would incur.

7. Summary of our findings

A summary of our assessment of the prudency and efficiency of TransGrid's revised capex forecast is presented in the table below.

Table 4: Our assessment of key changes between TransGrid's BAFO forecast case and its revised capex application ($2017-18)

Cost category	Change in capex	Basis for TranGrid's revised capex	Our observations
Tendered works – route deviation	From 30 to 26.8, or 25.2 if avoided easement acquisitions are included	TransGrid has revised its capex forecast based on actual and expected deviations for PEC.	TransGrid has adopted the AER's likelihood assumptions and the costing assumptions are sourced from the Contractor or represent the cheapest alternative option. TransGrid's approach to costing route deviations is likely to lead to efficient costings but we have not verified the process adopted. We consider TransGrid's revised capex for route deviations likely to be prudent and efficient.
Other construction costs – COVID-19	From 8 to 6	TransGrid has accepted the AER's preliminary position and revised its capex accordingly.	Given that TransGrid has accepted the AER's preliminary position, we have not assessed this cost category further.
Other construction costs – EIS delays	From 11.9 to 8.9	TransGrid has accepted the AER's preliminary position and revised its capex accordingly.	Given that TransGrid has accepted the AER's preliminary position, we have not assessed this cost category further.
Other construction costs – Extreme weather events	From 10.7 to 1.2	TransGrid has accepted the AER's preliminary position and revised its capex accordingly.	Given that TransGrid has accepted the AER's preliminary position, we have not assessed this cost category further.
Environmental 'offset' costs	From 127.4 to 148.2	TransGrid has revised its capex forecast based on updated advice from WSP, which has incorporated the most recent BDAR estimate for the Western section and additional field surveys for the Eastern section.	We do not have the expertise to independently verify TransGrid's proposed environmental 'offset' costs. However, the material provided by TransGrid and the advice from WSP indicates that its credit obligation reflects the most recent available information and that TransGrid has sought to minimise the costs of meeting its credit obligation by implementing a mixed BSA and BCF approach.
Biodiversity risk costs	From 38.2 to 18.5 (if the CESS applies). No allowance, if offset costs are excluded from the CESS	TransGrid's revised estimate of the biodiversity risk cost is based on WSP's advice on the likelihood that TransGrid would not be able to enter into suitable BSAs for the Eastern section and the additional costs of meeting its obligation through payments to BCF. TransGrid has excluded this risk cost from the capex forecast if the CESS does not apply to offset costs.	It is reasonable for TransGrid to have an allowance for this cost category, as it reflects an asymmetric risk outside of TransGrid's control. Where offset costs are included within the CESS, this risk is material for TransGrid. We note that TransGrid's estimate is based on independent advise from WSP. However, we are unable to verify that the level proposed is prudent and efficient, as this is outside of our area of expertise. Excluding offset costs from the CESS would be a practical means of allowing for a 'true-up' between allowed and actual biodiversity offset costs and would replace the need to include a biodiversity risk cost as part of the capex allowance.
Property and easements – negotiation margin	From 29.9 to 19.7	TransGrid's revised capex forecast is just above the mid-point of advice from JLL and the AER's preliminary position.	Independent advice from JLL suggests that the margin expected to be achieved across both current acquisitions and those where there is a counteroffer is now materially above [redacted] per cent. It is reasonable to expect that margins will increase the longer land owners 'hold out' before settling a negotiation. JLL continues to advise that a negotiation margin of $29.9 million ($2017-18), or [redacted] per cent, remains appropriate Given this, we consider TransGrid's proposed negotiation margin is likely to be lower than the prudent and efficient amount.

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