



FINAL DECISION
Powerlink transmission
determination
2017–22

Attachment 6 – Capital
expenditure

April 2017

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Note

This attachment forms part of the AER's final decision on Powerlink's transmission determination for 2017–22. It should be read with all other parts of the final decision.

This final decision consists of an Overview and 11 attachments. As many issues were settled at the draft decision stage or required only minor updates we have not prepared final decision attachments for:

- Regulatory depreciation
- Operating expenditure; and
- Corporate income tax.

The AER's final decision on these matters is set out in the Overview. For ease of reference the remaining attachments have been numbered consistently with the attachment numbering in our draft decision.

The final decision includes the following documents:

Overview

Attachment 1 – Maximum allowed revenue

Attachment 2 – Regulatory asset base

Attachment 3 – Rate of return

Attachment 4 – Value of imputation credits

Attachment 6 – Capital expenditure

Attachment 9 – Efficiency benefit sharing scheme

Attachment 10 – Capital expenditure sharing scheme

Attachment 11 – Service target performance incentive scheme

Attachment 12 – Pricing methodology

Attachment 13 – Pass through events

Attachment 14 – Negotiated services

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Shortened forms

Shortened form	Extended form
AARR	aggregate annual revenue requirement
AEMC	Australian Energy Market Commission
AEMO	Australian Energy Market Operator
AER	Australian Energy Regulator
ASRR	annual service revenue requirement
augex	augmentation expenditure
capex	capital expenditure
CCP	Consumer Challenge Panel
CESS	capital expenditure sharing scheme
CPI	consumer price index
DMIA	demand management innovation allowance
DRP	debt risk premium
EBSS	efficiency benefit sharing scheme
ERP	equity risk premium
MAR	maximum allowed revenue
MRP	market risk premium
NEL	national electricity law
NEM	national electricity market
NEO	national electricity objective
NER	national electricity rules
NSP	network service provider
NTSC	negotiated transmission service criteria
opex	operating expenditure
PPI	partial performance indicators
PTRM	post-tax revenue model
RAB	regulatory asset base
RBA	Reserve Bank of Australia
repex	replacement expenditure
RFM	roll forward model
RIN	regulatory information notice

Shortened form	Extended form
RPP	revenue and pricing principles
SLCAPM	Sharpe-Lintner capital asset pricing model
STPIS	service target performance incentive scheme
TNSP	transmission network service provider
TUoS	transmission use of system
WACC	weighted average cost of capital

6 Capital expenditure

Capital expenditure (capex) refers to the capital expenses incurred in the provision of prescribed transmission services. The return on and of forecast capex are two of the building blocks that form part of Powerlink's total revenue requirement.¹

This attachment sets out our final decision on Powerlink's proposed total forecast capex for the 2017–22 regulatory control period. Further detailed analysis is in the following appendices:

- Appendix A - Demand
- Appendix B - Contingent projects
- Appendix C - Ex post review: 2014–15 capex

6.1 Final decision

We are satisfied that a substantial part of Powerlink's proposed total forecast capex of \$888.9 million (\$2016–17) for the 2017–22 regulatory control period reasonably reflects the capex criteria. However, we have concerns with certain aspects of its forecast replacement capex. Therefore, we have substituted Powerlink's forecast with our estimate of total forecast capex for the 2017–22 regulatory control period. We are satisfied that our substitute estimate of \$835.5 million reasonably reflects the capex criteria. Table 6.1 sets out our final decision. Unless otherwise stated, all dollar values in this attachment are in \$2016–17. The difference between our final decision and Powerlink's revised proposal is due to our findings that Powerlink's replacement expenditure (replex) forecast is not prudent and efficient.

Table 6.1 Final decision on Powerlink's total forecast capex (\$2016–17, million)

	2017–18	2018–19	2019–20	2020–21	2021–22	Total
Powerlink's revised proposal	172.1	174.1	178.6	186.9	177.1	888.9
AER final decision	164.3	164.9	168.0	174.8	163.5	835.5
Total adjustment	-7.8	-9.2	-10.6	-12.1	-13.6	-53.4
Total adjustment (%)	-4.6%	-5.3%	-5.9%	-6.5%	-7.7%	-6.0%

Source: Powerlink, *Revised regulatory proposal*, 1 December 2016, p. 45; and AER analysis.

Note: Numbers may not add up due to rounding.

Powerlink's revised capex proposal consists of \$772.4 million for non-load driven capex, \$10.8 million for augmentation capex and \$105.8 million for non-network capex.

¹ NER, cl. 6A.5.4(a).

In our substitute estimate, we include Powerlink's forecast for augmentation and non-network capex, but have substituted our own estimate for non-load driven capex.

Powerlink's non-load driven capex forecast consists of asset replacement (\$728.0 million), security and compliance (\$18.8 million), and other non-load driven capex (\$25.6 million). In its revised proposal Powerlink applied updated inputs to its asset replacement forecasting methodology to reflect its current asset management strategy, reducing its forecast replacement expenditure by \$66.3 million. It also reduced its other non-load driven capex by \$4.5 million.

Powerlink forecast the bulk of its asset replacement capex using a top-down approach that uses a modified version of the AER's repex model. This model relies on using asset age as a proxy for the many factors that influence individual asset replacements. Powerlink has calibrated its repex model using actual asset replacement volumes from 2010 to 2015, but adjusted to ensure that any assets replaced for reasons other than poor condition were removed from the modelling calibration.

As we stated in our draft decision, we consider that Powerlink's forecasting methodology is generally reasonable. However, we still have concerns with how Powerlink has implemented its approach in terms of the mean asset replacement lives used to forecast asset replacement requirements for transmission towers. This has led to our alternate estimate of Powerlink's non-load driven capex of \$719.0 million.

Powerlink also proposed seven contingent projects in its revised proposal. We do not accept Powerlink's Southern Galilee Basin project because we do not consider that the load growth that Powerlink forecast for this project will eventuate. We accept the remaining six projects, including the newly proposed Queensland component of the Queensland to South Australia Interconnection project, but require Powerlink to make some amendments to the trigger events for these projects.

A summary of our reasons and findings that we present in this attachment is set out in Table 6.2.

Table 6.2 Summary of AER reasons and findings

Issue	Reasons and findings
Total capex forecast	<p>Powerlink proposed a total capex forecast of \$888.9 million (\$2016–17) in its revised proposal. While we are satisfied that a substantial part of this forecast reasonably reflects the capex criteria, we have concerns with certain aspects of its forecast replacement expenditure for transmission towers. Therefore, we are not satisfied that the total capex forecast reasonably reflects the capex criteria.</p> <p>We are satisfied our substitute estimate of \$835.5 million (\$2016–17) reasonably reflects the capex criteria. Our substitute estimate is 6 per cent lower than Powerlink's proposal.</p> <p>The reasons for this final decision are summarised in this table and detailed in the remainder of this attachment.</p>
Forecasting methodology, key assumptions and past capex performance	<p>Our concerns involve some aspects of Powerlink's forecasting methodology and key assumptions which are material to our view that we are not satisfied that Powerlink's proposed total forecast capex reasonably reflects the capex criteria.</p> <p>Powerlink's capex forecasting methodology primarily relies on a top-down approach to forecast asset replacement requirements using a modified version of the AER's repex</p>

	<p>model. This model relies on using asset age as a proxy for the many factors that influence individual asset replacements. Powerlink has calibrated the repex model inputs based on its actual asset replacement expenditure in the period from 2010 to 2015, adjusted to ensure that any assets replaced for reasons other than poor condition were removed from the modelling calibration.</p> <p>In preparing its revised proposal, Powerlink has made a number of adjustments to its repex modelling inputs which have, in each case, resulted in increases to the mean asset replacement lives used to forecast repex quantities in the 2017–22 regulatory control period compared to its initial proposal. This has provided some further assurance that Powerlink’s approach is now more likely to result in a prudent and efficient expenditure forecast. For example, in relation to the substation switchgear and secondary systems asset categories, we are satisfied that the inputs to Powerlink’s repex modelling for these assets are now reasonably likely to result in a prudent and efficient expenditure forecast.</p> <p>However, in relation to the transmission tower asset categories, we are not satisfied that Powerlink’s inclusion of historical tower maintenance quantities (typically accounted for as opex) in the repex model calibration quantities is likely to result in a forecast of required capex that meets the capex objectives.</p> <p>We are therefore not satisfied that the inputs and assumptions which underpin Powerlink’s use of the repex model are likely to result in a capex forecast which reasonably reflects the efficient costs that a prudent operator would require to achieve the capex objectives.</p>
Asset replacement (reinvestment)	<p>We do not accept Powerlink’s forecast repex of \$728.0 million (\$2016–17). In particular, we are not satisfied that Powerlink’s assumptions of forecast asset replacement lives for transmission towers reflected in its repex modelling are realistic and likely to result in a forecast of asset replacement capex requirements which is prudent and efficient and reflects the capex objectives.</p> <p>We have included in our substitute estimate of overall total capex an amount of \$674.6 million (\$2016–17) for asset replacement (reinvestment) capex.</p>
Security and compliance	<p>We accept Powerlink’s forecast of \$18.8 million (\$2016–17) for security and compliance non-load driven capex. We consider that Powerlink’s forecasting methodology based on trend analysis adjusted to account for non-recurrent and abnormal items is appropriate for this category of capex.</p>
Other non-load driven capex	<p>We accept Powerlink’s forecast of \$25.6 million (\$2016–17) for other non-load driven capex. We consider that Powerlink’s forecasting methodology based on trend analysis adjusted to account for non-recurrent and abnormal items is appropriate for this category of capex. Powerlink’s revised estimate of costs for the Wide Area Network stage two deployment project is likely to be prudent and efficient and reasonably reflects the level of capex required to achieve the capex objectives.</p>
Augmentation	<p>In the revised proposal, Powerlink accepted our draft decision for augex. Therefore, our draft decision to accept \$10.8 million (\$2016–17) for augmentation expenditure (augex) remains for this decision.</p>
Non-network capex	<p>Powerlink proposed \$105.8 million (\$2016–17) for non-network capex, including \$60.5 million for ICT and \$24.5 million for commercial buildings.</p> <p>We accept Powerlink’s forecast for non-network capex on the basis that this reasonably reflects the required expenditure for this category.</p>
Contingent projects	<p>Powerlink proposed \$562.8 million for seven contingent projects. We do not accept the Southern Galilee Basin project. We accept the remaining six projects as contingent projects (totalling \$445.9 million) but require Powerlink to amend the trigger events proposed for these projects.</p>

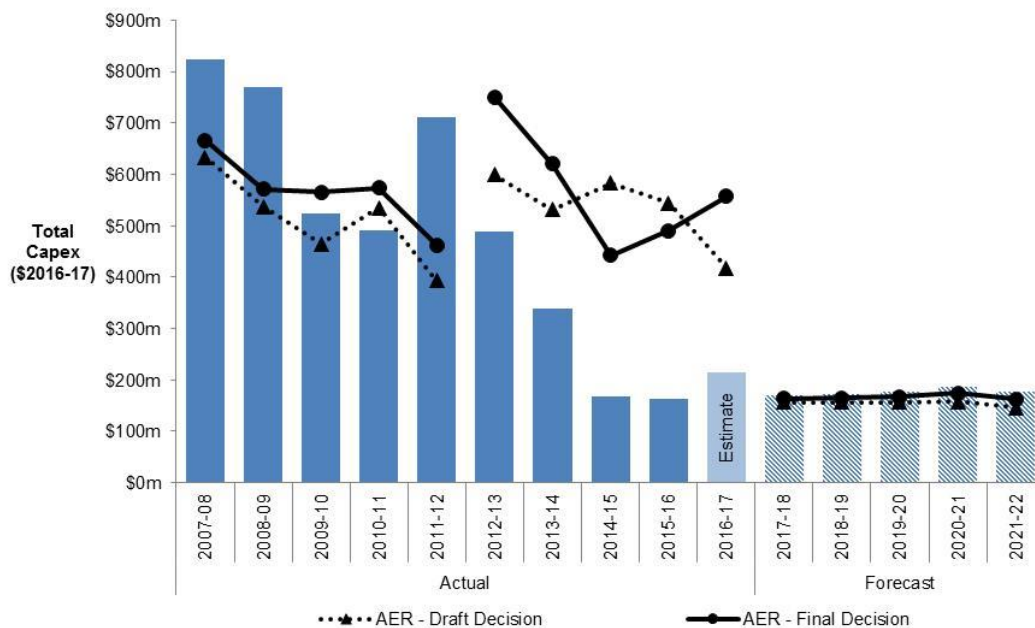
Source: AER analysis.

6.2 Powerlink’s revised proposal

In its revised proposal, Powerlink proposed total forecast capex of \$888.9 million (\$2016–17) for the 2017–22 regulatory control period. This is 15 per cent higher than our draft decision, and seven per cent lower than Powerlink's initial revenue proposal.

Figure 6.1 shows the difference between Powerlink's revised proposal and our draft and final decisions for the 2017–22 period, as well as the actual capex that Powerlink spent during previous regulatory control periods.

Figure 6.1 Powerlink's total actual and forecast capex



Source: AER analysis.

Powerlink accepted some aspects of the AER's draft decision and adjusted its approach in other areas, which is reflected in a reduction in its revised proposal compared to its initial proposal. Matters raised by us in our draft decision and addressed by Powerlink in its revised proposal included:

- AER's capex assessment approach
- Adjustment to reinvestment capex expenditure
- Benchmark asset lives
- Other category expenditure (WAN stage two project); and
- Contingent projects.

6.3 Assessment approach

We must determine whether Powerlink's proposal reasonably reflects the capex criteria set out in the NER.² We use various assessment techniques, both qualitative and quantitative, to assess the different elements of Powerlink's proposal. We also use these techniques to develop our alternative estimate of the total forecast capex, which we use to test Powerlink's total forecast capex.

If we are satisfied that Powerlink's proposal reasonably reflects the capex criteria in meeting the capex objectives, we accept it.³ If we are not satisfied, the NER requires us to put in place a substitute estimate which we are satisfied reasonably reflects the capex criteria.⁴ Where we have done this, our substitute estimate is based on our alternative estimate.

To assess Powerlink's proposed forecast capex, we have used the following techniques: economic benchmarking, trend analysis, methodology review and predictive modelling.

Our assessment approach is outlined in more detail in the draft decision.⁵ In particular, we have used methodology review to consider whether Powerlink's methodology is a sound basis for developing expenditure forecasts that reasonably reflect the capex criteria.⁶

6.4 Reasons for final decision

In this final decision, we are not satisfied Powerlink's total forecast capex reasonably reflects the capex criteria. We compared Powerlink's revised capex forecast to the alternative capex forecast we constructed using the approach outlined below. Powerlink's revised proposal is materially higher than ours. We are satisfied that our alternative estimate reasonably reflects the capex criteria.

Table 6.3 sets out the capex amounts by driver that we included in our alternative estimate of Powerlink's total forecast capex for the 2017–22 regulatory control period.

² NER, cl. 6A.6.7(c).

³ NER, cl. 6A.6.7(a).

⁴ NER, cl. 6A.14.1(2)(ii).

⁵ AER, Draft decision, *Powerlink transmission determination 2017-18 to 2021-22: Attachment 6 - Capital expenditure*, July 2016, pp. 6-14 to 6-20, 6-31 to 6-33.

⁶ AER, *Expenditure Forecasting Assessment Guideline*, December 2013.

Table 6.3 Final decision assessment of required capex by capex driver 2017–22 (\$2016-17, million)

Category	2017–18	2018–19	2019–20	2020–21	2021–22	Total
Augmentation	0.3	2.6	0.3	-	-	3.1
Easements	2.6	1.5	3.2	0.3	-	7.7
Replacement	135.3	133.5	131.9	138.0	135.9	674.6
Security and compliance	3.7	3.7	3.8	3.8	3.8	18.8
Other non-load driven	4.0	4.0	4.0	7.8	5.8	25.6
Non-network	18.3	19.6	24.9	25.0	18.0	105.8
Total capex	164.3	164.9	168.0	174.8	163.5	835.5

Source: AER analysis.

Note: Numbers may not add up due to rounding.

Our alternative estimate of \$835.5 million is \$53.4 million lower than Powerlink's forecast of \$888.9 million. This reflects a reduction in repex driven by different assumptions of expected asset replacement lives for transmission towers.

6.4.1 Forecast load-driven capex

In our draft decision, we accepted the \$10.8 million (\$2016–17) proposed for load driven capex (or augex) on the basis that it was significantly less than the historical levels of augex and reflects the relatively flat demand trend in the current period.⁷

In the revised proposal, Powerlink accepted our draft decision for load driven capex. Powerlink submitted that it reviewed the load driven capex forecast in light of the most recent 2016 demand forecasts and was satisfied that no change in forecast load driven capex is required in the revised revenue proposal.⁸ As such, our final decision on Powerlink's forecast load driven capex remains the same as our draft decision.

Our consideration of Powerlink's forecast contingent projects is discussed in appendix B.

6.4.2 Forecast non-load driven capex

Powerlink's non-load driven capex primarily reflects asset replacement expenditure (repex) as well as minor expenditure related to security and compliance and other network capex needs.

⁷ AER, *Draft Decision, Powerlink transmission determination 2017–18 to 2021–22*, Attachment 6 –Capital Expenditure, September 2016, p. 6–35.

⁸ Powerlink, *Revised revenue proposal 2017–22*, December 2016, p. 26.

6.4.2.1 Position

We do not accept Powerlink's revised proposal for non-load driven capex of \$772.4 million (\$2016–17). We have instead included in our alternative estimate of overall total capex an amount of \$719.0 million (\$2016–17) for non-load driven capex. This is 7 per cent lower than Powerlink's revised proposal and 15 per cent lower than its initial proposal, but 9 per cent higher than our draft decision.

We are satisfied that this amount reasonably reflects the capex criteria. In coming to this view, we applied:

- trend analysis, comparing past trends in total actual and forecast capex for the proposed non-load driven capex programs;⁹ and
- a methodology review of Powerlink's expenditure forecasting methodology, including key inputs and assumptions.

Table 6.4 summarises Powerlink's revised proposal and our alternative estimate for non-load driven capex.

Table 6.4 Final decision on Powerlink's total forecast non-load driven capex (\$2016–17, million)

	2017–18	2018–19	2019–20	2020–21	2021–22	Total
Powerlink's revised proposal	150.9	150.4	150.3	161.6	159.2	772.4
AER final decision	143.1	141.3	139.7	149.5	145.5	719.0
Total adjustment	-7.8	-9.2	-10.6	-12.1	-13.6	-53.4
Total adjustment (%)	-5.2%	-6.1%	-7.1%	-7.5%	-8.6%	-6.9%

Source: AER analysis.

Note: Numbers may not add up due to rounding.

6.4.2.2 Powerlink's revised revenue proposal

Powerlink did not accept our draft decision on non-load driven capex. Powerlink's revised forecast of non-load driven capex is \$772.4 million (\$2016-17), an increase of \$113.7 million from our draft decision. However, Powerlink made a number of amendments to its forecast repex and other non-load driven capex categories which resulted in a reduction in forecast total non-load driven capex of \$70.8 million from its initial proposal. In summary, in its revised proposal for non-load driven capex Powerlink:

⁹ NER, cl. 6.5.7(e)(5).

- continued to apply its hybrid forecasting methodology, using a mix of both bottom-up and top-down forecasting methods, including using the AER's repex model to forecast a significant proportion of capex requirements
- did not accept our draft decision on forecast repex on the basis that our assessment approach and conclusions result in mean replacement lives for assets that are unrealistic
- applied updated inputs to its asset replacement forecasting methodology to reflect current asset management strategies and forecast plans, reducing forecast repex by \$66.3 million (\$2016-17); and
- provided for an alternative technical solution for its Wide Area Network (WAN) stage two deployment project, reducing the forecast for other non-load driven capex by \$4.5 million (\$2016-17).

6.4.2.3 AER findings and conclusions on non-load driven capex

Replacement capex

In our draft decision, we noted that Powerlink's 2017–22 revenue proposal represented the first time that a transmission network service provider had used a version of the AER's repex model to forecast a significant proportion of its capex requirements. In doing so, Powerlink applied a range of modelling approaches, data inputs and assumptions to arrive at a capex forecast which it considered reasonably reflected a prudent and efficient forecast of required capex.

Our expenditure forecasting assessment guideline recognises that a range of different estimating techniques may be employed to develop an expenditure forecast.¹⁰ Our concern in the draft decision and again in this final decision is to ensure that the forecasting techniques employed provide a reasonable assessment of Powerlink's prudent and efficient future capex requirements.¹¹

In coming to this final decision, we have reviewed Powerlink's expenditure forecasting methodology for non-load driven capex, including key input assumptions, to assess whether the resulting capex forecast reasonably reflects the capex criteria. We have again drawn on the engineering and technical expertise of our consultants, EMCa, as well as the information provided in Powerlink's revised revenue proposal and submissions from stakeholders.

In its revised proposal, Powerlink identified a number of concerns with aspects of our draft decision and the advice provided to us by EMCa which informed elements of that decision. Specifically, Powerlink submitted that:

¹⁰ AER, *Better regulation: Expenditure forecast assessment guideline for electricity transmission*, November 2013.

¹¹ NER, cl. 6A.6.7(c).

- the AER's trend analysis appeared to focus primarily on the level of expenditure rather than the quantity of asset reinvestments. Given Powerlink's forecasting methodology is based on a forecast of required quantities of reinvestment, Powerlink was concerned that a focus on historical expenditure would not account for the changing nature of replacement solutions in an environment of little or no demand growth.¹²
- the AER and EMCa did not appear to have given full consideration to the adjustments made to historical replacement volumes by Powerlink in calibrating the repex model, and did not present evidence to support a conclusion that the adjustments made by Powerlink were insufficient to provide a reasonable forecast.¹³
- the methodology used by EMCa and relied upon by the AER to assess mean replacement lives was incorrect, and the quantum of the AER's adjustment to mean replacement lives was excessive and not supported by data provided by Powerlink.¹⁴
- it is not clear that the offsetting 15 per cent allowance for increased capitalised refurbishment and life extension works provided in the draft decision could be usefully applied as Powerlink:
 - is already planning life extension activities for the majority of transmission tower reinvestments; and
 - already uses operating expenditure to conduct preventative and corrective maintenance where it is economic to do so.¹⁵

While noting these concerns with our draft decision, Powerlink also reviewed the full range of inputs to its capex forecasting methodology to ensure the resulting forecasts reflect current asset management strategies and plans. The updates made by Powerlink to its repex model inputs reduced Powerlink's capex as forecast by the repex model by \$70.1 million (\$2016-17) from its initial proposal. The changes made by Powerlink include:¹⁶

- updating its repex calibration model input data to correct a mismatch between the starting asset age profile and the calibration quantities, and recategorise a transmission line built section from the high corrosion zone to the moderate corrosion zone. This had the effect of materially increasing the mean replacement life for towers in the high corrosion zone from 40.3 years to 45.0 years.
- removing from the repex calibration model some asset replacement quantities associated with historical power station switchyard replacement projects where the solution implemented varied substantially from the original substation configuration.

¹² Powerlink, *Revised revenue proposal 2017–22*, December 2016, pp. 30-33.

¹³ Powerlink, *Revised revenue proposal 2017–22*, December 2016, pp. 29-30 and 33-34.

¹⁴ Powerlink, *Revised revenue proposal 2017–22*, December 2016, pp. 34-36.

¹⁵ Powerlink, *Revised revenue proposal 2017–22*, December 2016, p. 36.

¹⁶ Powerlink, *Revised revenue proposal 2017–22*, December 2016, pp. 44-46.

This had the effect of increasing the mean replacement lives for substation switchgear and secondary systems by approximately one year.

- ensuring that its revised capex forecasts are consistent with the most recent National Transmission Network Development Plan, which did not identify any emerging reliability limitations on major transmission flow paths in Queensland.

Powerlink concluded that it considers the revised mean replacement lives in its repex model are reasonable and that its use of the repex model has been calibrated and adjusted in such a way that the historical replacement quantities represent a prudent and efficient quantity of reinvestment, and hence provide the basis for a reasonable forecast of future reinvestment quantities.

To assist in our review of Powerlink's revised proposal, we sought further advice from our engineering consultant EMCa. Specifically, given that Powerlink had amended the inputs to its repex model and increased the mean replacement lives of some assets from its initial proposal, we sought EMCa's advice on the reasonableness of Powerlink's revised repex forecast including the calibration of Powerlink's repex model and changes to its modelling inputs.¹⁷

In summary, EMCa advised that:

- Powerlink had generally not provided information to directly address the issues identified in EMCa's previous report regarding the quality of the justification for the scope and timing of proposed work in its replacement forecast. Instead, Powerlink has focussed on describing the adjustments it has made to its repex model as its top-down forecasting methodology.¹⁸
- Powerlink made further reductions to its historical replacement quantities for assets identified as having no enduring need, or which were replaced in response to a non-condition driver, which are consistent with the approach that EMCa considered to be appropriate in its initial report.¹⁹
- Powerlink also made a number of adjustments to its asset age profiles in the asset classes reviewed. The additional changes are likely to produce a reasonable asset age profile for the purposes of Powerlink's repex modelling.²⁰
- Generally, Powerlink has used a reasonable process to calibrate replacement quantities and adjust its reported RIN quantities of replacements to account for assets with no enduring need, no future capex requirement or with non-condition drivers.²¹

¹⁷ EMCa, *Review of Powerlink's replacement capital expenditure*, March 2017.

¹⁸ EMCa, *Review of Powerlink's replacement capital expenditure*, March 2017, p. 9.

¹⁹ EMCa, *Review of Powerlink's replacement capital expenditure*, March 2017, p. ii.

²⁰ EMCa, *Review of Powerlink's replacement capital expenditure*, March 2017, p. ii.

²¹ EMCa, *Review of Powerlink's replacement capital expenditure*, March 2017, p. 16.

- In relation to substation primary plant, secondary systems and communications assets:²²
 - Powerlink made a number of adjustments to its historic quantities of replacement activity compared to those reported in its initial proposal.
 - Powerlink's adjustments to historical replacement quantities since its initial proposal have resulted in increases in the modelled mean replacement lives for substation primary plant sub-categories of between 0.5 and 1.0 years, and for secondary systems of 0.4 years.
 - Powerlink has now taken reasonable steps to correct its reported RIN quantities of replacement activity and, consequently, to correct this input to its repex modelling.
 - The adjustments made by Powerlink in its revised repex model are now reasonably likely to result in a prudent and efficient expenditure forecast.
- In relation to transmission tower assets:²³
 - the calibration quantity for transmission towers used in Powerlink's repex model includes 92 transmission towers associated with maintenance interventions (recognised as opex)
 - including maintenance activity that is occurring at a different mean asset life to the mean replacement life associated with tower refits biases the tower population to a younger mean replacement life
 - as a result, the inclusion of the maintenance intervention activity in the calibration volume results in a mean replacement life that, when applied to both tower section rebuild and refit activities, increases the repex model expenditure forecast by \$72.9 million over the regulatory control period
 - Powerlink reduced its repex model expenditure forecast by \$19 million over the regulatory control period for opex maintenance interventions
 - Powerlink's adjustment of \$19 million to remove the costs of ongoing maintenance work (opex) from the repex model forecast understates the effect of including the maintenance interventions in the calibration quantities as it is based on a flat annual rate of maintenance activity whereas the forecast replacement quantity is increasing over time
 - removing the maintenance volumes increases the mean replacement lives derived from the calibration model for corrosion zone B by approximately 6.8 years (to 78.2 years), corrosion zone C by 3.2 years (to 61.1 years), and by 0.8 years (to 45.8 years) in corrosion zone DEF
 - the resultant mean replacement lives, with these further changes applied, would be reasonable

²² EMCa, *Review of Powerlink's replacement capital expenditure*, March 2017, pp. ii-iii.

²³ EMCa, *Review of Powerlink's replacement capital expenditure*, March 2017, pp. ii, 11-14 and 16-17.

- where the maintenance volumes are removed from the calibration quantity, and thereby from the derivation of mean replacement lives and the capital expenditure forecast, the corresponding maintenance adjustment (\$19.0 million) proposed by Powerlink should also be removed.
- In relation to the offsetting 15 per cent allowance for increased capitalised refurbishment and life extension works:²⁴
 - notwithstanding the advice from Powerlink that life extension strategies and early intervention programs already form part of its asset management planning, additional economically prudent life extension opportunities are likely to exist
 - however, Powerlink has not demonstrated that it would reasonably apply the allowance to achieve the NER and capital objectives to the nominated asset categories
 - in the absence of compelling information from Powerlink to retain the allowance, the allowance should be removed from the forecast.

Based on EMCa's advice and our own analysis of Powerlink's revised proposal, we consider that the adjustments that Powerlink has made to its repex modelling inputs following our draft decision have resulted in inputs which are generally more likely to produce a reasonable forecast of repex requirements. However, as discussed further below, we have increased the proposed mean asset lives for transmission tower assets.

In our draft decision, we recognised that Powerlink had made adjustments to the repex model input data, for example to exclude historical asset replacement quantities not driven by asset condition, and assets for which there is no enduring need. However, we were not satisfied that these adjustments fully accounted for the issues with Powerlink's historical asset maintenance and replacement policies and practices identified by EMCa, or for the full impact that changes in policy and practice will have on actual work undertaken in the future.²⁵

In preparing its revised proposal, Powerlink made a number of further adjustments to its repex modelling inputs which have, in each case, resulted in increases to the mean asset replacement lives used to forecast repex quantities in the 2017–22 regulatory control period. The magnitude of these increases is less than we applied in our draft decision. However, the nature of the further adjustments applied and the additional detail and explanation of the approach used to adjust historical replacement quantities which Powerlink has provided in its revised proposal has provided further assurance that Powerlink's approach is now more likely to result in a prudent and efficient expenditure forecast.

²⁴ EMCa, *Review of Powerlink's replacement capital expenditure*, March 2017, p. 29.

²⁵ AER, *Draft Decision, Powerlink transmission determination 2017–18 to 2021–22: Attachment 6 – Capital Expenditure*, September 2016, p. 6–35.

Specifically, in relation to the substation switchgear and secondary systems asset categories, we note EMCa's advice that Powerlink has now taken reasonable steps to correct its reported RIN quantities of replacement activity, such that the inputs to its repex modelling for these assets are now reasonably likely to result in a prudent and efficient expenditure forecast. For example, Powerlink removed asset replacements at the Swanbank and Gladstone power station switchyards from the calibration period quantities. In both cases, the asset replacement solution implemented differed significantly from the original asset configuration.²⁶ Given Powerlink does not expect similar circumstances to recur in the 2017–22 regulatory control period, it is appropriate to remove these quantities from the repex calibration model. On this basis, we are now satisfied that Powerlink's revised forecast of replacement quantities and expenditure for those assets is likely to reasonably reflect the efficient costs that a prudent operator would require for replacement of these asset types in the 2017–22 regulatory control period.

In relation to the transmission tower asset categories, we recognise that Powerlink's revised proposal reflected further adjustments to its repex modelling inputs which increased the mean asset replacement life used to forecast replacement quantities for towers in the high corrosion zone (zone DEF) by 4.7 years.²⁷ Powerlink's revised mean asset replacement life for towers in this zone is significantly closer to the mean replacement life we assumed in our draft decision.

However, based on EMCa's advice and our own analysis, we are not satisfied that Powerlink's inclusion of historical tower maintenance intervention activities, which are typically accounted for as opex, in the repex model calibration quantities is likely to result in a forecast of required capex that meets the capex objectives. This is because Powerlink's approach has the effect of reducing the mean replacement life of assets in the calibration period which, when applied in the forecast period, significantly increases the forecast replacement quantities and therefore the forecast capex. While Powerlink has attempted to account for this through a \$19.0 million reduction to the modelled repex, we consider that this adjustment does not fully account for the effect of including the opex maintenance quantities in the repex calibration model. In our view, an alternative approach which excludes both the tower maintenance quantities from the repex model calibration process and the offsetting \$19.0 million adjustment to modelled repex is likely to result in an estimate of forecast capex which reasonably reflects the capex criteria.

The effect of excluding the opex maintenance intervention quantities from the repex model calibration data is to increase the mean replacement lives derived from the calibration model for towers in corrosion zone B by approximately 6.8 years (to 78.2 years), corrosion zone C by 3.2 years (to 61.1 years), and corrosion zone DEF by

²⁶ Powerlink, *Revised revenue proposal 2017–22*, December 2016, p. 46; and Powerlink, *Response to information request IR#022*, 6 February 2017, pp. 4–5.

²⁷ Powerlink, *Revised revenue proposal 2017–22*, December 2016, p. 46; and Powerlink, *Response to information request IR#022*, 6 February 2017, p. 4.

0.8 years (to 45.8 years). We have applied these adjusted mean asset replacement lives for towers in modelling our alternative estimate of repex for the 2017–22 regulatory control period.

Our substitute asset replacement lives are set out in Table 6.5 below.

Table 6.5 Powerlink and the AER's forecast average asset replacement lives (years)

Primary asset category	Sub-category	Powerlink initial proposal asset replacement lives	AER draft decision asset replacement lives	Powerlink revised proposal replacement lives	AER final decision asset replacement lives
Towers	Corrosion zone DEF	40.3	46.6	45.0	45.8
	Corrosion zone C	57.9	65.5	57.9	61.1
	Corrosion zone B	71.4	79.9	71.4	78.2
Primary substation equipment	Circuit breakers	34.2	40.2	35.2	35.2
	Isolators/earth switches	39.8	45.8	40.6	40.6
	Voltage transformers	34.6	40.6	35.1	35.1
	Current transformers	33.2	39.2	34.2	34.2
Secondary systems and telecommunications	Secondary systems (bay and non-bay)	20.2	24.7	20.6	20.6
	Telecommunications	10.7	10.7	10.7	10.7
Buildings and infrastructure	Substation buildings	34.3	34.3	34.3	34.3
	Communications buildings	42.3	42.3	42.3	42.3
	Site infrastructure	50.6	50.6	50.6	50.6

Source: EMCa, Review of Powerlink's replacement capital expenditure, March 2017, p. ii and AER analysis.

The extended asset replacement lives for towers set out in Table 6.5, when applied as inputs to Powerlink's repex model, have the effect of deferring the profile of asset replacements forecast by the model and reducing forecast capex in the 2017–22 regulatory control period. The total reduction in forecast repex resulting from the application of our adjusted mean replacement lives is \$53.4 million (\$2016-17) in the 2017-22 regulatory control period.

In our draft decision, while we extended the asset replacement lives used as inputs to Powerlink's repex modelling, we also provided additional expenditure equivalent to 15 per cent of Powerlink's initial modelled repex to allow for a prudent increase in preventative and corrective asset reinvestment capex in the 2017–22 regulatory control period. This allowance was made in the context of the significant extension in mean asset replacement lives envisaged in that decision.

For this final decision, we note Powerlink's view that it does not consider that such an allowance for increased preventative and corrective reinvestment capex could be usefully applied as it:

- is already planning life extension activities for the majority of transmission tower reinvestments; and
- already uses operating expenditure to conduct preventative and corrective maintenance where it is economic to do so.

We also note that the increases in mean asset replacement lives applied in this decision are substantially smaller than those applied in our draft decision for most asset categories. In this context, we consider that there is no longer a need or justification for applying this offsetting allowance to provide for increased capitalised maintenance activities in the 2017-22 regulatory control period. This conclusion is supported by advice from EMCa. We have therefore not included any additional allowance of this nature in our estimate of the forecast capex required to meet the capex objectives.

Other non-load driven capex

Powerlink's revised proposal included forecast other non-load driven capex of \$25.6 million (\$2016–17) for the 2017–22 regulatory control period, a reduction of \$4.5 million from its initial proposal.

In our draft decision, we noted that Powerlink had forecast the majority of capex in this category using trend modelling, on the basis that there is a recurring level of expenditure in this category that is necessary for the ongoing provision of prescribed transmission services. We were satisfied that Powerlink's trend based forecasting methodology for this category was reasonable and likely to produce a forecast of capex requirements which reflects the capex criteria.²⁸ However, in addition to the trend based forecast of recurrent capex in this category, Powerlink applied a step change for a specific additional project: the Wide Area Network (WAN) stage two deployment project. The WAN stage two project provided for the extension of Powerlink's existing WAN capability across a further 34 sites across the network at a cost of \$10.1 million (\$2016–17).²⁹

We examined the documentation submitted by Powerlink in support of the WAN stage two project, to assess the justification for the proposed step change expenditure for this project. We were not satisfied that Powerlink's project documentation addressed key factors which we consider would typically be evident in documentation used to justify the prudence and efficiency of a proposed capex project. The absence of detail evaluating the costs, benefits and risks of alternative options for this project was

²⁸ AER, *Powerlink transmission determination 2017-18 to 2021-22: Attachment 6 - Capital expenditure*, September 2016, p. 6-56 to 6-57.

²⁹ Powerlink, *CP.02553 Wide Area Network Deployment Stage 2*, 31 August 2015, p. 3.

concerning, such that we were not satisfied that the forecast capex for the WAN stage two deployment was prudent and efficient or necessarily required to achieve the capex objectives.³⁰ We undertook to review any updated or additional supporting information relating to this project submitted by Powerlink as part of its revised revenue proposal in making our final decision on Powerlink's other non-load driven capex.³¹

The members of the Consumer Challenge Panel (CCP) for Powerlink each submitted an individual report on our draft decision and Powerlink's revised proposal.³²

CCP member Hugh Grant submitted that it was inappropriate for the AER to include the WAN stage two project expenditure in its capex allowance despite identifying shortcomings with Powerlink's proposal. Hugh Grant submitted that the AER should have excluded Powerlink's proposed expenditure for the WAN stage two project from its draft capex allowance. Further, based on a review of the additional information provided by Powerlink regarding this project in the revised proposal, Hugh Grant submitted that the AER should not include the proposed expenditure for that project in its final capex determination.³³

In its revised proposal, Powerlink reduced the forecast capex for the WAN stage two project by \$4.5 million (\$2016-17) or 45 per cent. This reflected an amended project scope based on an alternative technical solution which reduced the cost and deferred the timing of the WAN stage two deployment until obsolescence of the existing equipment triggers the need for the project.³⁴ Powerlink also provided an updated project implementation strategy and cost estimates.³⁵

In our view, the reduced project scope and cost, and the further information provided by Powerlink substantially address the concerns regarding this project we outlined in our draft decision. Specifically, the additional documentation provided by Powerlink sets out:

- evidence as to the nature of asset obsolescence driving the project scope³⁶
- evidence that a range of alternative options, including a 'do nothing' option, has been considered³⁷
- evidence of a risk assessment as part of the options analysis process³⁸

³⁰ NER, cl. 6A.6.7(c).

³¹ AER, *Powerlink transmission determination 2017-18 to 2021-22: Attachment 6 - Capital expenditure*, September 2016, p. 6-58 to 6-59.

³² Consumer Challenge Panel Sub Panel 4 (CCP4) David Headberry's submission to the AER, Response to the AER Draft Decision and Revised Proposal to Powerlink's electricity transmission network for a revenue reset for the 2017–19 regulatory period, 19 December 2016. CCP4 (Hugh Grant), *Submission to the AER*, 23 December 2016. CCP4 (Jo De Silva), *Submission of Powerlink's revised proposal*, 21 December 2016.

³³ CCP (Hugh Grant), *Submission to the AER*, 23 December 2016, pp. 82-83.

³⁴ Powerlink, *Revised revenue proposal*, December 2016, p. 51.

³⁵ Powerlink, *Appendix 4.04 - Future Wide Area Network Implementation Strategy*, December 2016.

³⁶ Powerlink, *Appendix 4.04 - Future Wide Area Network Implementation Strategy*, December 2016, pp 4-6.

³⁷ Powerlink, *Appendix 4.04 - Future Wide Area Network Implementation Strategy*, December 2016, pp. 6-9.

³⁸ Powerlink, *Appendix 4.04 - Future Wide Area Network Implementation Strategy*, December 2016, pp. 7-9.

- a comparison of costs and benefits for each option considered³⁹; and
- evidence that the preferred option is the lowest cost option for addressing the need.⁴⁰

We note Hugh Grant's submission that, based on a review of the additional information provided by Powerlink regarding this project in the revised proposal, Powerlink has still not demonstrated the need, prudence or efficiency of the proposed project.⁴¹

On balance, based on the information provided in Powerlink's revised proposal, we are satisfied that the reduced scope and cost of the WAN stage two project is likely to be prudent and efficient and reasonably reflects the level of capex required to achieve the capex objectives.⁴² We have therefore made no adjustment to Powerlink's forecast other non-load driven capex in determining our alternative estimate of forecast capex for the 2017–22 regulatory control period.

Summary of non-load driven capex

Based on our findings in this section, we have reduced Powerlink's forecast non-load driven capex by \$53.4 million (\$2016–17). This reduction is due to our conclusions on Powerlink's repex model asset life assumptions.

6.4.3 Interrelationships

There are a number of interrelationships between Powerlink's total forecast capex for the 2017–22 regulatory control period and other components of its transmission determination as shown in Table 6.6. We considered these interrelationships in coming to our final decision on total forecast capex.

Table 6.6 Interrelationships between total forecast capex and other components

Other component	Interrelationships with total forecast capex
Total forecast opex	<p>There are elements of Powerlink's total forecast opex that are related to its total forecast capex. These include the forecast labour price growth that we included in our opex forecast in Attachment 7. This is because the price of labour affects both total forecast capex and total forecast opex.</p> <p>More generally, we note our total opex forecast will provide Powerlink with sufficient opex to maintain the reliability and safety of its network. Although we do not approve opex on specific categories of opex such as maintenance, the total opex we approve will in part influence the repex Powerlink needs to spend during the 2017–22 period.</p> <p>We have reduced Powerlink's forecast repex by extending Powerlink's mean replacement lives of transmission tower assets. However, we have also offset this reduction by removing the repex model adjustment made by Powerlink to account for the reallocation of modelled</p>

³⁹ Powerlink, *Appendix 4.04 - Future Wide Area Network Implementation Strategy*, December 2016, pp. 6-9.

⁴⁰ Powerlink, *Appendix 4.04 - Future Wide Area Network Implementation Strategy*, December 2016, p. 9

⁴¹ CCP (Hugh Grant), *Submission to the AER*, 23 December 2016, pp. 82-83.

⁴² NER, cl. 6A.6.7(c).

Other component	Interrelationships with total forecast capex
	capex for maintenance interventions to opex. We therefore do not consider that any adjustment to forecast opex is required as a result of this draft decision on forecast capex.
Forecast demand	Forecast demand is related to Powerlink's total forecast capex. Growth driven capex, which includes augex and easements capex, is typically triggered by a need to build or upgrade the network to address changes in demand or to comply with quality, reliability and security of supply requirements. Hence, the main driver of growth-related capex is maximum demand and its effect on network utilisation and reliability. Forecast demand also affects the need and timing of asset replacement capex as this affects the risk of unserved energy as a result of asset failure. In circumstances of flat or falling demand, it may be possible to decommission aged assets with replacement, or to re-configure the network to avoid the need to replace specific assets. Hence, maximum demand and its effect on network utilisation and reliability is also a driver of replacement related capex.
Capital Expenditure Sharing Scheme (CESS)	The CESS is related to Powerlink's total forecast capex. In particular, the effective application of the CESS is contingent on the approved total forecast capex being efficient, and that it reasonably reflects the capex criteria. As we note in the capex criteria table below, this is because any efficiency gains or losses are measured against the approved total forecast capex. In addition, we are required to undertake an ex post review of the efficiency and prudence of capex, with the option to exclude any inefficient capex in excess of the approved total forecast capex from Powerlink's regulatory asset base. In particular, the CESS will ensure that Powerlink bears at least 30 per cent of any overspend against the capex allowance. Similarly, if Powerlink can fulfil their objectives without spending the full capex allowance, it will be able to retain 30 per cent of the benefit of this. In addition, if an overspend is found to be inefficient through the ex post review, Powerlink risks having to bear the entire overspend.
Service Target Performance Incentive Scheme (STPIS)	<p>The STPIS is interrelated to Powerlink's total forecast capex, in so far as it is important that it does not include any expenditure for the purposes of improving supply reliability during the 2017–22 regulatory control period. This is because such expenditure should be offset by rewards provided through the application of the STPIS.</p> <p>Further, the forecast capex should be sufficient to allow Powerlink to maintain performance at the targets set under the STPIS. The capex allowance should not be set such that there is an expectation that it will lead to Powerlink systematically under or over performing against its targets.</p>
Contingent projects	<p>Generally, contingent projects are significant network augmentation projects that are reasonably required to be undertaken in order to achieve the capex objectives. However, unlike other proposed capex projects, the need for the project within the regulatory period and the associated costs are not sufficiently certain. Consequently, expenditure for such projects does not form a part of the total forecast capex that we approve in this determination.</p> <p>Powerlink proposed \$562.8 million for seven contingent projects for the 2017–22 period. Powerlink submitted that the proposed projects are for managing the risk of significant network investments which may be triggered by material changes in demand or new connections (including new coal mines and LNG production projects).⁴³</p>

Source: AER analysis

6.4.4 Summary of submissions on Powerlink's revised capex proposal

Table 6.7 provides a summary of stakeholder submissions on Powerlink's revised capex proposal and our response.

⁴³ Powerlink, *Revised regulatory proposal*, December 2016, pp. 46-48.

Table 6.7 Submissions on Powerlink's revised capex proposal and our response

Stakeholder	Issue	Our response
Queensland Farmers Federation (QFF)	<p>The QFF noted that the AER's consultant EMCA did not provide specific figures, leaving it to the AER's discretion on how much to reduce Powerlink's proposed repex. The QFF stated that they would have expected the AER's reduction to be higher than the conservative reduction of 23 per cent.⁴⁴</p> <p>Considers it is important that the RIT-T process for the Queensland to South Australia interconnector contingent project reflects the decisions taken about the strategic direction of the NEM under a broader post-2017 policy framework.⁴⁵</p>	<p>In our Final Decision, we reduced Powerlink's revised proposed repex by 7 per cent. We consider this reduction and providing Powerlink with forecast capex of \$835.5 million reasonably reflects the capex criteria.</p> <p>The purpose of the RIT-T is to identify the credible option that maximises the present value of net economic benefits to all those who produce, consume and transport electricity in the NEM.⁴⁶ Therefore, for us to make a determination that the preferred option satisfies the RIT-T, the preferred option identified by the RIT-T proponents must be the credible option that the RIT-T identifies as maximising the present value of the net economic benefit to all those who produce, consume and transport electricity in the NEM. This requires us to consider the impact of the proposed contingent project on the operation and structure of the NEM.</p>
Cotton Australia (CA)	<p>Supported Powerlink's practice of reviewing an asset's condition rather than replacing an asset on the basis of age.⁴⁷</p> <p>CA has significant concerns regarding the contingency trigger approach for projects as it considers that there are already measures in place within the rules to allow for capex where required. Considers that the RIT-T was introduced as a mechanism to avoid unnecessary capex and should not allow for exclusions of projects from the RIT-T assessment process as proposed by Powerlink.⁴⁸</p> <p>Considers that any decisions on Powerlink's proposed new interconnector and interconnector upgrades should not be pre-empted before the recommendations of the current major reviews on the NEM are determined.⁴⁹</p>	<p>Our assessment of proposed capex must be consistent with the capex criteria of the NER, in particular that the investment be prudent and efficient.</p> <p>We assessed Powerlink's proposed contingent projects according to the RIT-T assessment requirements.</p> <p>We assessed Powerlink's proposed capex program and contingent projects consistent with the current NER and RIT-T process.</p>
CCP member Jo	Noted that although it appears that Powerlink's risk-cost based portfolio	Our assessment of Powerlink's non-load driven capex forecasting methodology is set out in section 6.4.2.

⁴⁴ Queensland Farmers Federation, *Submission on Powerlink Revised Regulatory Proposal 2017–22*, December 2016, p. 3.

⁴⁵ Queensland Farmers Federation, *Submission on Powerlink Revised Regulatory Proposal 2017–22*, December 2016, p. 4.

⁴⁶ NER, clause 5.16.1(b).

⁴⁷ Cotton Australia, *Submission on Powerlink Revised Regulatory Proposal 2017–22*, December 2016, p. 1.

⁴⁸ Cotton Australia, *Submission on Powerlink Revised Regulatory Proposal 2017–22*, December 2016, pp. 2–3.

⁴⁹ Cotton Australia, *Submission on Powerlink Revised Regulatory Proposal 2017–22*, December 2016, p. 3.

Stakeholder	Issue	Our response
De Silva	<p>optimisation methodology has not been applied to the development of its non-load driven expenditure forecasts, the AER should seek clarification about the methodology from Powerlink and determine why the risk-cost based portfolio optimisation methodology was not applied to the expenditure forecast for non-load driven expenditure. Submitted that the AER should seek commitments from Powerlink about future incorporation of this methodology.⁵⁰</p>	
CCP Member David Headberry	<p>Agreed with our minimum trigger requirements for Powerlink's proposed contingent projects.⁵¹</p> <p>Considers that a more mathematical basis should be used to provide guidance on what individual demand initiating projects should be used to develop the expected likelihood of the contingent project.⁵²</p> <p>Proposed additional trigger requirements for proposed contingent projects:⁵³</p> <ul style="list-style-type: none"> the project must have a very high likelihood of proceeding but that its timing in the next period is unknown but should be seen to commence before the fourth year of the regulatory period all unused allowed capex must have been either spent or committed to other projects before any capital is permitted to be allocated to the contingent project <p>Supports the mechanism developed by us for calculating capital contributions for distribution network service providers which provides support that capital contributions should be required to prevent existing customers paying for assets that they</p>	<p>We assessed Powerlink's proposed capex program and contingent projects consistent with the current NER and RIT-T process.</p> <p>Our assessment of Powerlink's proposed contingent projects is set out in appendix B.</p>

⁵⁰ CCP (Jo De Silva), *Submission to the AER, Powerlink Queensland 2018–22 revised revenue proposal*, 22 December 2016, p.1.

⁵¹ CCP (David Headberry), *Submission to the AER, Powerlink Queensland 2018–22 revised revenue proposal*, 21 December 2016, p.11.

⁵² CCP (David Headberry), *Submission to the AER, Powerlink Queensland 2018–22 revised revenue proposal*, 21 December 2016, p.12.

⁵³ CCP (David Headberry), *Submission to the AER, Powerlink Queensland 2018–22 revised revenue proposal*, 21 December 2016, p.14.

Stakeholder	Issue	Our response
	will never use or receive a benefit from. ⁵⁴	
CCP Member Hugh Grant	<p>Claims that Powerlink has systemically materially underestimated the asset lives for all of its modelled asset categories and that this underestimation applies to the proposed asset lives of all asset categories.⁵⁵</p> <p>Identified a number of adjustments necessary to address the major systemic deficiencies with Powerlink's repex forecasts identified by us and our consultant EMCa, including:⁵⁶</p> <ul style="list-style-type: none"> • setting Powerlink's repex allowances on the basis of efficient costs, rather than trending forward Powerlink's inefficient repex policies and practices • applying adjustments to address Powerlink's inadequate asset condition and options assessments • applying adjustments to reflect the implications of Powerlink's excess system capacity and declining asset utilisation levels • applying adjustments to address Powerlink's systemic overestimation of project scopes and to address Powerlink's inadequate adoption of life extension strategies; and • applying adjustments to address Powerlink's overestimation of unit replacement costs. <p>Disagreed with our proposal to provide 15 per cent additional allowances for preventative and corrective asset reinvestment capex as our repex allowance already includes funding for such activities.⁵⁷</p>	<p>We have increased the proposed mean asset lives for transmission tower assets, resulting in a material reduction of forecast repex of \$53.4 million in the 2017–22 regulatory control period.</p> <p>We are satisfied that Powerlink's revised forecast mean asset replacement lives for other asset categories are likely to result in forecast capex which reasonably reflects the capex objectives.</p> <p>We have not applied the additional 15 per cent allowance for preventative and corrective maintenance in this final decision.</p>

⁵⁴ CCP (David Headberry), *Submission to the AER, Powerlink Queensland 2018–22 revised revenue proposal*, 21 December 2016, pp.15-16.

⁵⁵ CCP (Hugh Grant), *Submission to the AER, Powerlink Queensland 2018–22 revenue proposal*, 23 December 2016, p. 6.

⁵⁶ CCP (Hugh Grant), *Submission to the AER, Powerlink Queensland 2018–22 revenue proposal*, 23 December 2016, p. 6.

⁵⁷ CCP (Hugh Grant), *Submission to the AER, Powerlink Queensland 2018–22 revenue proposal*, 23 December 2016, p. 7.

Stakeholder	Issue	Our response
	<p>Noted that we accepted Powerlink's proposed security and compliance capex and other non-load driven capex despite EMCa outlining a number of concerns with Powerlink's forecasts.⁵⁸</p> <p>Made the following comments about non-system capex:⁵⁹</p> <ul style="list-style-type: none"> • Powerlink's submission did not demonstrate the prudence or efficiency of its proposed ICT projects and programs • the AER has not explained why it considers a reduction of 16 per cent in Powerlink's motor vehicle capex to be appropriate when Powerlink claims that its vehicle fleet has reduced by 29 per cent • we have not performed any actual assessment of the prudence or efficiency of the \$16.1 million "office fitout replacement project" for Powerlink's head office; and • we accepted Powerlink's proposed tools and equipment capex of \$5.0 million by accepting forecasts based on trending forward Powerlink's past expenditure. 	<p>We have accepted Powerlink's revised proposal for proposed security and compliance capex and other non-load driven capex, which reflected a reduction of \$4.5 million from its initial proposal in response to the concerns we raised in our draft decision.</p> <p>Powerlink's non-network capex for the 2017-22 regulatory control period is forecast to be lower than the average expenditure in each of the three preceding regulatory control periods. In particular:</p> <ul style="list-style-type: none"> • forecast five per cent less ICT capex than current regulatory control period. Powerlink's proposed ICT capex is less than other transmission businesses AusNet Services and TransGrid. • Powerlink's proposed motor vehicle capex is low relative to historical levels. A reduction in fleet numbers does not necessarily reflect an equivalent reduction in expenditure given the significant variation in the cost of different fleet assets. • forecast five per cent less buildings and property capex than current regulatory control period and low relative to historical levels. Our decision considered the age of the previous office fit out (more than 15 years) and changes in office functionality and practices. • forecast three per cent less tools and equipment capex than current regulatory control period and is low relative to historical levels. We consider that capex for this category is typically stable over time.

6.5 Consideration of the capex factors

As we discussed in section 6.3, we took the capex factors into consideration when assessing Powerlink's total capex forecast. Table 6.8 summarises how we have taken into account the capex factors.

Where relevant, we also had regard to the capex factors in assessing the forecast capex associated with replex and non-network capex (see appendix B).

⁵⁸ CCP (Hugh Grant), *Submission to the AER, Powerlink Queensland 2018–22 revenue proposal*, 23 December 2016, p. 7.

⁵⁹ CCP (Hugh Grant), *Submission to the AER, Powerlink Queensland 2018–22 revenue proposal*, 23 December 2016, pp. 7-9.

Table 6.8 AER consideration of the capex factors

Capex factor	AER consideration
The most recent annual benchmarking report and benchmarking capex that would be incurred by an efficient distributor over the relevant regulatory control period	We had regard to our most recent benchmarking report in assessing Powerlink's revised proposed total forecast for the 2017–22 regulatory control period. Powerlink's capital productivity remained steady in the most recent year (2014-15), but improved slightly relative to the other large TNSPs (AusNet Services and TransGrid). ⁶⁰
The actual and expected capex of Powerlink during any preceding regulatory control periods	We had regard to Powerlink's actual and expected capex during the 2012–17 regulatory control period and preceding regulatory control periods in assessing its proposed total forecast. This can be seen in our assessment of Powerlink's capex performance. It can also be seen in our assessment of the forecast capex associated with the capex drivers and programs that underlie Powerlink's total forecast capex.
The extent to which the capex forecast includes expenditure to address concerns of electricity consumers as identified by Powerlink in the course of its engagement with electricity consumers	We had regard to the extent to which Powerlink engaged with customers in its approach to forecasting capex. Powerlink established its Customer and Consumer Panel in May 2015 to meet on a quarterly basis to provide a face-to-face forum for stakeholders to provide their input to Powerlink decision making processes and methodologies. ⁶¹ Powerlink continued its program of engagement activities with stakeholders in the preparation of its revised revenue proposal. ⁶²
The relative prices of operating and capital inputs	We had regard to the relative prices of operating and capital inputs in assessing Powerlink's proposed real cost escalation factors. In particular, we have accepted Powerlink's proposed cost escalation for labour as applied to forecast capex.
The substitution possibilities between operating and capital expenditure	We had regard to the substitution possibilities between opex and capex. We considered whether there are more efficient and prudent trade-offs in investing more or less in capital in place of ongoing operations. See our discussion about the interrelationships between Powerlink's total forecast capex and total forecast opex in Table 6.6 above.
Whether the capex forecast is consistent with any incentive scheme or schemes that apply to Powerlink	We had regard to whether Powerlink's proposed total forecast capex is consistent with the CESS and the STPIS. See our discussion about the interrelationships between Powerlink's total forecast capex and the application of the CESS and the STPIS in Table 6.6 above.
The extent to which the capex forecast is referable to arrangements with a person other than the service provider that do not reflect arm's length terms	We had regard to whether any part of Powerlink's proposed total forecast capex or our alternative estimate is referable to arrangements with a person other than Powerlink that do not reflect arm's length terms. Based on the information provided by Powerlink we are satisfied that the capex forecast is based on arrangements that reflect arm's length terms.
Whether the capex forecast includes an amount relating to a project that should more appropriately be included as a contingent project	We had regard to whether any amount of Powerlink's proposed total forecast capex or our alternative estimate relates to a project that should more appropriately be included as a contingent

⁶⁰ AER, *Annual benchmarking report - Transmission network service providers*, November 2016, Figure 5, p. 17.

⁶¹ Powerlink, *Revenue Proposal 2017-22*, January 2016, p.15.

⁶² Powerlink, *Revised Revenue Proposal 2017-22*, December 2016, pp. 3-9.

Capex factor	AER consideration
<p>The most recent National Transmission Network Development Plan (NTNDP), and any submissions made by AEMO, in accordance with the Rules, on the forecast of Powerlink's required capex</p>	<p>project. We did not identify any such amounts that should more appropriately be included as a contingent project.</p> <p>We have taken into account the most recent NTNDP in assessing Powerlink's forecast capex. AEMO did not make a submission on Powerlink's capex proposal in this instance.</p>
<p>The extent to which Powerlink has considered and made provision for efficient and prudent non-network alternatives</p>	<p>We have had regard to the extent to which Powerlink made provision for efficient and prudent non-network alternatives. Powerlink makes provision for non-network alternatives in its asset reinvestment planning. See appendix B.</p>
<p>Any relevant project assessment conclusions report required under clause 5.16 of the NER</p>	<p>We have had regard to the extent to which Powerlink made project assessment conclusions under clause 5.16 of the NER. See appendix B.</p>
<p>Any other factor the AER considers relevant and which the AER has notified Powerlink in writing, prior to the submission of its revenue proposal, is a capex factor</p>	<p>We did not identify any other capex factor that we consider relevant.</p>

Source: AER analysis.

A Demand

In our draft decision, we were satisfied that Powerlink's demand forecast reasonably reflects a realistic expectation of demand over the 2017–22 regulatory control period. We had regard to the fact that Powerlink's demand forecast is above AEMO's 2015 connection point forecast by approximately 2000 MW per annum over the 2017–22 regulatory control period.⁶³ However, the growth trend in Powerlink's demand forecast is below AEMO's growth forecast for the 2017–22 regulatory control period.⁶⁴

Powerlink stated that this difference is driven by different treatments of large direct connect end users. We were broadly satisfied that Powerlink's response adequately explains at least some of the differences between its demand figures and those of AEMO. However, we note that the maximum demand forecast is not a significant driver of Powerlink's capex program for the 2017–22 regulatory control period.⁶⁵

In its revised proposal, Powerlink reiterated its submission that the different treatments of large direct connect end users explain the difference between its forecast and AEMO's. Powerlink submitted that the reason we found its forecast to be about 2000 MW higher than AEMO's forecast is that we have incorrectly compared its maximum demand forecast expressed in non-coincident format with AEMO's coincident maximum demand forecast.⁶⁶

We disagree with Powerlink on this. We used AEMO's connection point forecasts which are expressed in non-coincident format as stated in its 2015 Connection Point report for Queensland.⁶⁷

Powerlink's revised proposal does not raise any further issues with our draft decision in relation to the proposed demand forecast.⁶⁸ As no new issues have been raised, our final decision on Powerlink's demand forecast remains the same as our draft decision.⁶⁹

⁶³ AER, Draft Decision, *Powerlink transmission determination 2017–18 to 2021–22: Attachment 6 –Capital Expenditure*, September 2016, p. 71.

⁶⁴ AER, Draft Decision, *Powerlink transmission determination 2017–18 to 2021–22: Attachment 6 –Capital Expenditure*, September 2016, p. 74.

⁶⁵ AER, Draft Decision, *Powerlink transmission determination 2017–18 to 2021–22: Attachment 6 –Capital Expenditure*, September 2016, p. 74.

⁶⁶ Powerlink, *Revised Revenue Proposal 2018–22*, December 2016, p. 52.

⁶⁷ See AEMO, 2015 AEMO Transmission Connection Point Forecasting Report Queensland, June 2015, p.6.

⁶⁸ Powerlink, *Revised Revenue Proposal 2018–22*, December 2016, p. 52.

⁶⁹ AER, Draft Decision, *Powerlink transmission determination 2017–18 to 2021–22: Attachment 6 –Capital Expenditure*, September 2016, p. 74.

B Contingent projects

Contingent projects are significant network augmentation projects that may be reasonably required to be undertaken in order to achieve the capex objectives. However, unlike other proposed capex projects, the need for the project and the associated costs are not sufficiently certain. Consequently, expenditure for such projects does not form a part of our assessment of the total forecast capex that we approve in this determination. Such projects are linked to unique investment drivers (rather than general investment drivers such as expectations of load growth in a region) and are triggered by a defined 'trigger event'. The occurrence of the trigger event must be probable during the relevant regulatory control period.⁷⁰

If the service provider considers that the trigger event has occurred during the regulatory control period, it may make an application to the AER. At that time, we will assess whether the trigger event has occurred and whether the project meets the threshold. If we were satisfied that the trigger event has occurred and that the project meets the threshold, we would determine the efficient incremental revenue which is likely to be required in each remaining year of the regulatory control period as a result of the contingent project, and amend the revenue determination accordingly.⁷¹

Powerlink's initial revenue proposal included seven proposed contingent projects:

- the North West Surat Basin Area project
- the Central to North Queensland Reinforcement project
- the Southern Galilee Basin project
- the Northern Bowen Basin project
- the Bowen Industrial Estate project
- the QNI upgrade (Queensland component); and the
- Central West to Gladstone area reinforcement project

In our draft decision we did not accept the North West Surat Basin Area project and the Southern Galilee Basin projects. We considered the five remaining proposed projects may be reasonably required to be undertaken in order to achieve the capex objective. However, we considered that the trigger events should be amended in order for us to be satisfied that each trigger event is appropriate.

In its revised revenue proposal, Powerlink

- accepted the AER's draft decision to not approve the North West Surat Basin Area project⁷²

⁷⁰ NER, cl. 6A.8.1(c)(5).

⁷¹ NER, cl. 6A.8.2.

⁷² Powerlink, *Revised Proposal 2018–22*, December 2016, p. 47.

- maintained its proposal for the Southern Galilee Basin project⁷³
- revised its proposal for the Central to North Queensland Reinforcement project by revising the estimated network constraint from 340 MW to 230 MW⁷⁴
- did not amend the trigger events for the Northern Bowen Basin Area Project and the Bowen Industrial Estate project as provided in our draft decision⁷⁵
- provided further comments on the QNI upgrade project and the Central West to Gladstone Area Reinforcement project; and⁷⁶
- proposed an additional project, the Queensland to South Australia Interconnection project (Queensland component).⁷⁷

B.1 Position

We consider that the additional contingent project Powerlink proposed for the Queensland to South Australia Interconnection (Queensland component) should be classified as a contingent project for the 2017–22 regulatory control period.

This project is one of the network options identified by ElectraNet to increase the interconnection between South Australia and the rest of the NEM as a consequence of the system blackout event in South Australia on 28 September 2016. Should this project option proceed, Powerlink will be required to undertake the Queensland component of this project.

However, for the Queensland to South Australia Interconnection Project (Queensland Component), we require additional trigger events to be provided for this project relating to the successful completion of the RIT-T by the participants in this project.

We also require Powerlink to further amend the trigger events for the following contingent projects as a result of the additional information Powerlink submitted on these projects in the revised proposal:⁷⁸

- the Central to North Queensland Reinforcement project
- the Northern Bowen Basin area project
- the Bowen Industrial Estate project
- the QNI upgrade (Queensland component) project; and
- the Central West to Gladstone Area Reinforcement project.

⁷³ Powerlink, *Revised Revenue Proposal 2018–22*, December 2016, p. 47.

⁷⁴ Powerlink, *Revised Revenue Proposal 2018–22, Appendix 4.02, Revised Contingent Project Plan*, December 2016, p.6.

⁷⁵ Powerlink, *Revised Revenue Proposal 2018–22*, December 2016, p. 48.

⁷⁶ Powerlink, *Revised Revenue Proposal 2018–22*, December 2016, p. 48.

⁷⁷ Powerlink, *Revised Revenue Proposal 2018–22*, December 2016, p. 47.

⁷⁸ NER, cl. 6A.8.1(b)(4).

The amendments which we require Powerlink to make to its trigger events are set out in section B.3.

Our position on the Southern Galilee Basin project has not changed from our draft decision. We took into account additional information Powerlink provided regarding recent court decisions relating to the Southern Galilee Basin.⁷⁹ However, we consider the likelihood of this project occurring during the 2017–22 regulatory control period is low. Therefore, we do not accept this project as a contingent project.

Our review of this additional information from Powerlink is set out in section B.3.

B.2 Assessment approach

To assess the information Powerlink submitted in its revised proposal in relation to contingent projects, we applied the same assessment approach set out in our draft decision.⁸⁰ We considered whether:

- the proposed contingent project is reasonably required to be undertaken in order to achieve any of the capex objectives⁸¹
- the proposed contingent project capital expenditure is not otherwise provided for in the capex proposal⁸²
- the proposed contingent project capital expenditure reasonably reflects the capex criteria, taking into account the capex factors⁸³
- the proposed contingent project capital expenditure exceeds the defined threshold,⁸⁴ and
- the trigger events in relation to the proposed contingent project are appropriate.⁸⁵

In our draft decision, we considered the following indicative trigger events are required in order to be satisfied that a project should be included as a contingent project:

1. specific detail about the amount and location of additional load required to trigger the contingent project
2. successful completion of the regulatory investment test for transmission (RIT-T) demonstrating positive net market benefits

⁷⁹ Powerlink, *Revised Revenue Proposal 2018–22*, December 2016, p. 47.

⁸⁰ AER, *Draft Decision Powerlink transmission determination 2017–18 to 2021–22: Attachment 6–Capital Expenditure*, September 2016, p 77.

⁸¹ NER, cl. 6A.8.1(b)(1).

⁸² NER, cl. 6A.8.1(b)(2)(i). Relevantly, a TNSP must include forecast capex in its revenue proposal which it considers is required in order to meet or manage expected demand for prescribed transmission services over the regulatory control period (see NER, cl. 6A.6.7(a)(1)).

⁸³ NER, cl. 6A.8.1(b)(2)(ii).

⁸⁴ NER, cl. 6A.8.1(b)(2)(iii).

⁸⁵ NER, cl. 6A.8.1(b)(4).

3. determination by the AER under clause 5.16.6 of the NER that the proposed investment satisfies the regulatory investment test for transmission (compliance review); and
4. Powerlink Board commitment to proceed with the project prior to submitting an application to the AER seeking an amendment to the revenue determination pursuant to the NER.⁸⁶

We found that Powerlink's contingent projects include some, but not all, of the four triggers required in order for us to be satisfied that a project should be included as a contingent project.

In this final decision, we applied the same assessment criteria to consider the additional information Powerlink submitted on the contingent projects. Our review is set out in section B.3.

We consider that with the exception of the Northern Bowen Basin Area project and the Bowen Industrial Estate project, the four indicative trigger events set out above are required for a project to be included as a contingent project.

In its revised proposal, Powerlink submitted that because the Northern Bowen Basin Area project and the Bowen Industrial Estate project are for reliability corrective action, our proposed trigger event was not appropriate.⁸⁷ Powerlink submitted that the second indicative trigger event should be amended to require the RIT-T to demonstrate a maximising of net market benefits, which may be the least negative benefit where a project is for reliability corrective action.⁸⁸ We agree with Powerlink's submission.

B.2.1 Submissions

Cotton Australia questioned the necessity of contingent projects when the review of capex and the RIT-T process are in place. Cotton Australia did not support the exclusion of contingent projects from these assessments.⁸⁹ Cotton Australia noted that major reviews of the National Electricity Market (NEM) are currently underway. It considered that Powerlink should not be pre-empting the requirements and recommendations stemming from the review through the proposed new interconnector projects.⁹⁰ We include the successful completion of a RIT-T as a necessary trigger event for each of the proposed contingent projects, linking the contingent project to our other assessment processes.

⁸⁶ AER, *Draft Decision Powerlink transmission determination 2017–18 to 2021–22: Attachment 6–Capital Expenditure*, September 2016, p. 79.

⁸⁷ Powerlink, *Revised Revenue Proposal 2018–22*, December 2016, p. 48.

⁸⁸ Powerlink, *Revised Revenue Proposal 2018–22*, December 2016, p. 48.

⁸⁹ Cotton Australia, *Submission: AER draft decision –Powerlink electricity transmission revised revenue proposal 2017–22*, 22 December 2016, p. 2.

⁹⁰ Cotton Australia, *Submission: AER draft decision –Powerlink electricity transmission revised revenue proposal 2017–22*, 22 December 2016, p. 3.

CCP member David Headberry agreed with the four contingent project triggers set out in our draft decision.⁹¹ However, David Headberry considered that two other triggers should be added: (1) that the proposed project must have a very high likelihood of proceeding but its timing in the next period should be seen to commence before the fourth year of the period,⁹² and (2) that all unused allowed capex must have been either spent or committed to other projects before any capital is permitted to be allocated to the contingent project.⁹³ We consider that our current indicative trigger events are sufficient to ensure that the contingent projects will only be undertaken when they are necessary to achieve the capex objectives.

B.3 Reasons for final decision

B.3.1 Central to North Queensland Reinforcement Project

Powerlink revised its proposal for the Central to North Queensland Reinforcement project (\$55.1million).⁹⁴ Powerlink maintains that the Central West and North Queensland zones are areas where significant increases in demand and energy are plausible during the 2017–22 regulatory control period.⁹⁵ However, Powerlink now estimates that the additional load which will trigger the proposed contingent project is approximately 230MW instead of 340MW previously estimated in its initial proposal.⁹⁶

Powerlink's revised proposal did not explain this change in additional load. We sought further information from Powerlink about this.⁹⁷ Powerlink submitted that the shift in additional load trigger from 340MW to 230MW represents a move from the point at which network augmentation was technically most likely (at 340MW) to a point at which overall market benefits may drive the need for augmentation (at 230MW).⁹⁸ Powerlink submitted that the actual quantum of market benefit that will accrue will depend on the additional load, the load factor and other parameters such as the relative operating

⁹¹ Consumer Challenge Panel Sub Panel 4 (CCP4), *David Headberry's submission to the AER, Response to the AER Draft Decision and Revised Proposal to Powerlink's electricity transmission network for a revenue reset for the 2017–19 regulatory period*, 19 December 2016, p.11.

⁹² Consumer Challenge Panel Sub Panel 4 (CCP4), *David Headberry's submission to the AER, Response to the AER Draft Decision and Revised Proposal to Powerlink's electricity transmission network for a revenue reset for the 2017–19 regulatory period*, 19 December 2016, p.14.

⁹³ Consumer Challenge Panel Sub Panel 4 (CCP4), *David Headberry's submission to the AER, Response to the AER Draft Decision and Revised Proposal to Powerlink's electricity transmission network for a revenue reset for the 2017–19 regulatory period*, 19 December 2016, p.14.

⁹⁴ Powerlink, *Revised Revenue Proposal 2018–22, Appendix 4.02, Revised Contingent Project Plan*, December 2016, p.6.

⁹⁵ Powerlink, *Revised Revenue Proposal 2018–22, Appendix 4.02, Revised Contingent Project Plan*, December 2016, p.6.

⁹⁶ Powerlink, *Revised Revenue Proposal 2018–22, Appendix 4.02, Revised Contingent Project Plan*, December 2016, p.6.

⁹⁷ AER, *Information request to Powerlink #025 Contingent Projects*, by email, 15 February 2017.

⁹⁸ Powerlink, *Response to AER information request to Powerlink #025 Contingent Projects*, by email, 22 February 2017, p. 3.

cost of generation in North Queensland compared to the rest of the NEM.⁹⁹ We are satisfied with Powerlink's explanation.

In our draft decision, we requested Powerlink to provide more information regarding the amount and location of additional load required to trigger this project.¹⁰⁰ In the revised proposal, Powerlink submitted new information showing total additional load estimates for the different combinations of the five identified projects.¹⁰¹ Powerlink did not quantify this information. As a result we assumed an individual project probability of 10 per cent, with no interrelationships. We found that with the change in additional load trigger from 340MW to 230MW, the probability of the contingent project occurring has increased. We are satisfied with the new information Powerlink submitted regarding the trigger events for this project.

On this basis, the revised trigger event which we are satisfied meets the NER requirements is as follows:

- Commitment of additional load in excess of 230MW to be connected to the Central West and/or North Queensland zones that requires the dispatch of higher cost generation in northern Queensland to maintain power transfers within limits.

We consider that the above trigger and the three trigger events set out below are required for the reasons set out in the draft decision:¹⁰²

- Successful completion of the RIT-T, including a comprehensive assessment of the credible options, that demonstrates a network investment by Powerlink maximises the positive net market benefits while meeting reliability of supply obligations to the Central West and/or North Queensland zones
- A determination by the AER (under Clause 5.16.6 of the NER) that the proposed investment satisfies the regulatory investment test for transmission; and
- Powerlink Board commitment to proceed with the project subject to the AER amending Powerlink's revenue determination pursuant to the NER.

As explained in section B.2 above, these four trigger events make it clear that should the event occur, they make the undertaking of the proposed contingent project reasonably necessary in order to achieve the capex objectives, specifically to meet or manage expected demand for prescribed transmission services.¹⁰³

⁹⁹ Powerlink, *Response to AER information request to Powerlink #025 Contingent Projects*, by email, 22 February 2017, p. 3.

¹⁰⁰ AER, *Draft Decision Powerlink transmission determination 2017–18 to 2021–22: Attachment 6–Capital Expenditure*, September 2016, p.81.

¹⁰¹ Powerlink, *Revised Revenue Proposal 2018–22, Appendix 4.02, Revised Contingent Project Plan*, December 2016, p.7.

¹⁰² AER, *Draft Decision Powerlink transmission determination 2017–18 to 2021–22: Attachment 6–Capital Expenditure*, September 2016, pp. 79-81.

¹⁰³ NER, cl. 6A.8.1(c)(2).

David Headberry submitted that the costs for this project should be allocated to the actual users that precipitate the need for the upgrade.¹⁰⁴ We have taken this submission into account. We note that one of the trigger events required for this project is the successful completion of the RIT-T. This test will include cost-benefit analysis and market benefit analysis.¹⁰⁵ The issue raised through David Headberry's submission will be one of the factors considered by the RIT-T.

B.3.2 Southern Galilee Basin Project

Powerlink did not accept the AER's draft decision to reject the Southern Galilee Basin Project (\$116.9 million).¹⁰⁶ Powerlink maintained its proposal that the southern area of the Galilee Basin is emerging with significant energy related proposals including multiple coal mines, underground coal gasification and oil and gas exploration.¹⁰⁷

In our draft decision, we considered that environmental concerns around three export coal mines proposed around the southern area of the Galilee Basin means there is financial and timing uncertainty around this proposed contingent project.¹⁰⁸

In the revised proposal, Powerlink noted a recent decision by the Queensland Court of Appeal to reject an appeal of a decision by the Queensland Land Court which determined that one of the three coal mines, the GVK Hancock mine, would not cause an increase in environmentally harmful emissions.¹⁰⁹ Based on this court decision, Powerlink suggested that the coal mine projects around the Galilee Basin will proceed to development, albeit on a delayed timeframe.¹¹⁰

Powerlink has not provided additional information regarding this project. For the reasons set out in our draft decision, we consider that the Southern Galilee Basin Project (\$116.9 million) is not reasonably required to be undertaken during the regulatory period and therefore it is not reasonable to assume that these projects would meet the capex criteria. On this basis, we do not consider that this project satisfies the requirements to be included as a contingent project.

David Headberry submitted that the costs for this project should be allocated to the actual users that precipitate the need for the upgrade.¹¹¹ We note that one of the

¹⁰⁴ Consumer Challenge Panel Sub Panel 4 (CCP4), *David Headberry's submission to the AER, Response to the AER Draft Decision and Revised Proposal to Powerlink's electricity transmission network for a revenue reset for the 2017–19 regulatory period*, 19 December 2016, p.16.

¹⁰⁵ See clause 5.16.1 of the NER (version 89).

¹⁰⁶ Powerlink, *Revised Revenue Proposal 2018–22*, December 2016, p. 47.

¹⁰⁷ Powerlink, *Revised Revenue Proposal 2018–22, Appendix 4.02, Revised Contingent Project Plan*, December 2016, p.10.

¹⁰⁸ AER, *Draft Decision Powerlink transmission determination 2017–18 to 2021–22: Attachment 6–Capital Expenditure*, September 2016, p. 86.

¹⁰⁹ Powerlink, *Revised Revenue Proposal 2018–22*, December 2016, p. 47.

¹¹⁰ Powerlink, *Revised Revenue Proposal 2018–22*, December 2016, p. 47.

¹¹¹ Consumer Challenge Panel Sub Panel 4 (CCP4), *David Headberry's submission to the AER, Response to the AER Draft Decision and Revised Proposal to Powerlink's electricity transmission network for a revenue reset for the 2017–19 regulatory period*, 19 December 2016, p.16.

trigger events required for this project is the successful completion of the RIT-T. This test will include cost-benefit analysis and market benefit analysis.¹¹² The issue raised through David Headberry's submission will be one of the factors considered by the RIT-T.

B.3.3 Northern Bowen Basin Project

Powerlink did not amend the trigger events for the Northern Bowen Basin Project (\$55.7 million).¹¹³ In our draft decision, we considered that in order for us to be fully satisfied that this project should be a contingent project, Powerlink should include an additional project trigger event seeking our determination on whether a preferred project option within a RIT-T satisfies the regulatory investment test for transmission.¹¹⁴ We considered that Powerlink should amend its trigger events to include the following trigger:¹¹⁵

“a determination by the AER (under Clause 5.16.6 of the National Electricity Rules) that the proposed investment satisfies the regulatory investment test for transmission”.

In its revised proposal, Powerlink submitted as additional information, that this proposed contingent project is for reliability corrective action.¹¹⁶ Powerlink asserted that this means this project may result in negative net market benefit or net negative economic cost.¹¹⁷ Powerlink submitted that the RIT-T process (as set out in clause 5.16.6 of the NER) excludes options for reliability corrective action. Powerlink submitted that the additional trigger event we required relating to our determination on the RIT-T cannot be activated for this reason.¹¹⁸

As an alternative to the AER's proposed trigger event, Powerlink proposed to provide the AER with the Project Assessment Conclusions Report as soon as practicable after the expiry of the 30 day dispute period.¹¹⁹ Powerlink submitted that this would allow the AER to consider the application of the RIT-T to the contingent project in advance of Powerlink applying for amendment of the revenue determination for the contingent project under clause 6A.8.2 of the NER¹²⁰

¹¹² See clause 5.16.1 of the NER (version 89).

¹¹³ Powerlink, *Revised Revenue Proposal 2018–22*, December 2016, p. 47.

¹¹⁴ AER, *Draft Decision Powerlink transmission determination 2017–18 to 2021–22: Attachment 6–Capital Expenditure*, September 2016, p. 89.

¹¹⁵ AER, *Draft Decision Powerlink transmission determination 2017–18 to 2021–22: Attachment 6–Capital Expenditure*, September 2016, p. 89.

¹¹⁶ Powerlink, *Revised Revenue Proposal 2018–22*, December 2016, p. 48.

¹¹⁷ Powerlink, *Revised Revenue Proposal 2018–22*, December 2016, p. 48.

¹¹⁸ Powerlink, *Revised Revenue Proposal 2018–22*, December 2016, p. 48.

¹¹⁹ Powerlink, *Revised Revenue Proposal 2018–22*, December 2016, p. 48.

¹²⁰ Powerlink, *Revised Revenue Proposal 2018–22*, December 2016, p. 48.

We consider that Powerlink's proposed alternative trigger event is insufficient to ensure that the criteria raised through the RIT-T process are met.¹²¹ As set out in section B.2 above, we consider the trigger event relating to the successful completion of the RIT-T is necessary in order for us to be satisfied that the project should be included as a contingent project. However, we have amended this trigger to take into account the issues Powerlink raised in relation to not being able to apply the RIT-T process. We consider Powerlink should amend its trigger events to include the following triggers:

1. Commitment of additional load in excess of 30 MW to be supplied from the network between Moranbah and Collinsville 132kV substations, including supply directly from either of these substations
2. Successful completion of the RIT-T, including a comprehensive assessment of the credible options, that demonstrates a network investment by Powerlink maximises the positive net market benefits while meeting reliability of supply obligations to the proposed location where the contingent project applies. For the avoidance of doubt, a preferred option may have a negative net economic benefit where the identified need is for a reliability corrective action
3. Determination by the AER under clause 5.16.6 of the NER that the proposed investment satisfies the regulatory investment test for transmission (compliance review); and
4. Powerlink Board commitment to proceed with the project prior to submitting an application to the AER seeking an amendment to the revenue determination pursuant to the NER.

As explained in section B.2 above, these four trigger events make it clear that should the event occur, they make the undertaking of the proposed contingent project reasonably necessary in order to achieve the capex objectives, specifically to meet or manage expected demand for prescribed transmission services.¹²²

David Headberry submitted that the augmentation costs will provide benefit to those firms that will increase their exports and, possibly, through increased reliability of supply for existing exporters. However, the large majority of other electricity consumers in Queensland will not gain any benefit so should not be required to contribute to the augmentation.¹²³ We note that one of the trigger events required for this project is the successful completion of the RIT-T. This test will include cost-benefit analysis and market benefit analysis.¹²⁴ The issue raised through David Headberry's submission will be one of the factors considered by the RIT-T.

¹²¹ NER, cl. 6A.8.1(c)(2).

¹²² NER, cl. 6A.8.1(c)(2).

¹²³ Consumer Challenge Panel Sub Panel 4 (CCP4), *David Headberry's submission to the AER, Response to the AER Draft Decision and Revised Proposal to Powerlink's electricity transmission network for a revenue reset for the 2017–19 regulatory period*, 19 December 2016, p.16.

¹²⁴ See clause 5.16.1 of the NER (version 89).

B.3.4 Bowen Industrial Estate project

Powerlink did not amend the trigger events for the Bowen Industrial Estate Project (\$42.9 million).¹²⁵ In our draft decision, we considered that in order for us to be fully satisfied that this project should be a contingent project, Powerlink should include an additional project trigger seeking the AER's determination on whether a preferred project option within a RIT-T satisfies the regulatory investment test for transmission.¹²⁶ We considered that Powerlink should amend its trigger events to include the following trigger:¹²⁷

“a determination by the AER (under Clause 5.16.6 of the National Electricity Rules) that the proposed investment satisfies the regulatory investment test for transmission”.

Similar to the Northern Bowen Basin Project, Powerlink submitted that this project is proposed for reliability corrective action which cannot be activated under the RIT-T process (as set out in clause 5.16.6 of the NER) as it excludes reliability corrective actions.¹²⁸ As an alternative to the AER's proposed trigger event, Powerlink also proposed to provide the AER with the Project Assessment Conclusions Report as soon as practicable after the expiry of the 30 day dispute period.¹²⁹ Powerlink submitted that this would allow the AER to consider the application of the RIT-T to the contingent project in advance of Powerlink applying for amendment of the revenue determination for the contingent project under clause 6A.8.2 of the NER.¹³⁰

For the same reasons set out for the Northern Bowen Basin project, in section B.2 above, we consider that Powerlink's proposed alternative trigger event is insufficient to ensure that the criteria raised through the RIT-T process are met.¹³¹ As such, we consider Powerlink should amend its trigger events to include the following triggers:

1. Commitment of additional load in excess of 10 MW to be connected to be supplied from the Bowen North Substation
2. Successful completion of the RIT-T, including a comprehensive assessment of the credible options, that demonstrates a network investment by Powerlink maximises the positive net market benefits while meeting reliability of supply obligations to the proposed location where the contingent project applies. For the avoidance of doubt, a preferred option may have a negative net economic benefit where the identified need is for a reliability corrective action

¹²⁵ Powerlink, *Revised Revenue Proposal 2018–22*, December 2016, p. 47.

¹²⁶ AER, *Draft Decision Powerlink transmission determination 2017–18 to 2021–22: Attachment 6–Capital Expenditure*, September 2016, p. 89.

¹²⁷ AER, *Draft Decision Powerlink transmission determination 2017–18 to 2021–22: Attachment 6–Capital Expenditure*, September 2016, p. 89.

¹²⁸ Powerlink, *Revised Revenue Proposal 2018–22*, December 2016, p. 48.

¹²⁹ Powerlink, *Revised Revenue Proposal 2018–22*, December 2016, p. 48.

¹³⁰ Powerlink, *Revised Revenue Proposal 2018–22*, December 2016, p. 48.

¹³¹ NER, cl. 6A.8.1(c)(2).

3. Determination by the AER under clause 5.16.6 of the NER that the proposed investment satisfies the regulatory investment test for transmission (compliance review); and
4. Powerlink Board commitment to proceed with the project prior to submitting an application to the AER seeking an amendment to the revenue determination pursuant to the NER.

David Headberry submitted that those seeking to increase their exports should fund the expansion. We note that one of the trigger events required for this project is the successful completion of the RIT-T. This test will include cost-benefit analysis and market benefit analysis.¹³² The issue raised through David Headberry's submission will be one of the factors considered by the RIT-T.

B.3.5 QNI Upgrade (Queensland Component)

Powerlink did not amend the trigger events for the proposed Queensland to NSW Interconnector (QNI) project (\$66.7 million). In our draft decision, we considered that the proposed trigger events should be amended to include specific detail about the amount and location of additional load required to trigger this project.¹³³ Powerlink submitted that it is not practical to identify the information requested because there is a large range of possibilities for market developments outside Queensland that could lead to increased congestion across the QNI.¹³⁴ Powerlink considered that turning these possibilities into a trigger event would be difficult. Powerlink noted that the AER has previously accepted the Heywood Interconnector Upgrade contingent project using the same form of trigger events as originally proposed in its initial revenue proposal for the QNI upgrade.¹³⁵ Powerlink provided an additional upgrade option in the revised proposal, which sets out a variation of options 1a and 1b described in its QNI upgrade Project Assessment Conclusions Report (PACR).¹³⁶

For reasons set out in our draft decision, we consider that a trigger regarding additional load should be included in order for the proposed contingent project to meet the NER requirements. Based on the additional information Powerlink provided in the revised proposal, including the submission that it is not possible to provide specific information on the amount and location of the additional load, we consider the following project trigger should be included for this project:

- Increased load flows between NSW and Queensland that require the dispatch of higher cost generation in Queensland to maintain power transfers within limits.

¹³² See clause 5.16.1 of the NER (version 89).

¹³³ AER, *Draft Decision Powerlink transmission determination 2017–18 to 2021–22: Attachment 6–Capital Expenditure*, September 2016, p. 92.

¹³⁴ Powerlink, *Revised Revenue Proposal 2018–22*, December 2016, p. 48.

¹³⁵ Powerlink, *Revised Revenue Proposal 2018–22*, December 2016, p. 48.

¹³⁶ Powerlink, *Revised Revenue Proposal 2018–22, Appendix 4.02, Revised Contingent Project Plan*, December 2016, p.19.

Otherwise, we consider that the three other trigger events set out below are also required for the reasons set out in the draft decision:¹³⁷

- successful completion of the RIT-T, including a comprehensive assessment of the credible options, that demonstrates a network investment by Powerlink maximises the positive net market benefits from increasing the capacity of QNI either northward or southward or in both directions
- a determination by the AER (under Clause 5.16.6 of the National Electricity Rules) that the proposed investment satisfies the regulatory investment test for transmission; and
- Powerlink Board commitment to proceed with the project subject to the AER amending Powerlink's revenue determination pursuant to the Rules.

As explained in section B.2 above, these four trigger events make it clear that should the event occur, they make the undertaking of the proposed contingent project reasonably necessary in order to achieve the capex objectives, specifically to meet or manage expected demand for prescribed transmission services.¹³⁸

David Headberry submitted that with the introduction of the inter-regional transmission use of system approach for allocating costs from exporting regions to importing regions, the proposed project could benefit all Queensland consumers and so the costs could be allocated into shared assets.¹³⁹ We note that one of the trigger events required for this project is the successful completion of the RIT-T. This test will include cost-benefit analysis and market benefit analysis.¹⁴⁰ The issue raised through David Headberry's submission will be one of the factors considered by the RIT-T.

B.3.6 Central West to Gladstone Area Reinforcement project

Powerlink amended the trigger events for the proposed Central West to Gladstone Area Reinforcement project¹⁴¹ (\$105.5 million) to include information requested in our draft decision regarding the amount and location of additional load required to trigger this project.¹⁴² Powerlink's revised trigger event is as follows:

¹³⁷ AER, *Draft Decision Powerlink transmission determination 2017–18 to 2021–22: Attachment 6–Capital Expenditure*, September 2016, pp.79-81.

¹³⁸ NER, cl. 6A.8.1(c)(2).

¹³⁹ Consumer Challenge Panel Sub Panel 4 (CCP4), *David Headberry's submission to the AER, Response to the AER Draft Decision and Revised Proposal to Powerlink's electricity transmission network for a revenue reset for the 2017–19 regulatory period*, 19 December 2016, p.16.

¹⁴⁰ See clause 5.16.1 of the NER (version 89).

¹⁴¹ Powerlink, *Revised Revenue Proposal 2018–22, Appendix 4.02, Revised Contingent Project Plan*, December 2016, p.23.

¹⁴² AER, *Draft Decision Powerlink transmission determination 2017–18 to 2021–22: Attachment 6–Capital Expenditure*, September 2016, p. 94.

A change in the supply/demand balance in the Gladstone zone where the sum of any additional demand plus any reduction in registered generation capacity exceeds 550 MW.¹⁴³

We consider the revised trigger is consistent with the information previously provided by Powerlink. On this basis, we are satisfied that the revised trigger event meets the NER Requirements.

This trigger, along with the three other trigger events set out below are required for the reasons set out in the draft decision.¹⁴⁴

- a change in the supply/demand balance in the Gladstone zone where the sum of any additional demand plus any reduction in registered generation capacity exceeds 550 MW
- successful completion of the RIT-T demonstrating a network investment by Powerlink maximises the positive net market benefits from increasing the capacity of the 275kV network between the Central West and Gladstone zones
- a determination by the AER (under Clause 5.16.6 of the National Electricity Rules) that the proposed investment satisfies the regulatory investment test for transmission; and
- Powerlink Board commitment to proceed with the project subject to the AER amending Powerlink's revenue determination pursuant to the Rules.

As explained in section B.2 above, these four trigger events make it clear that should the event occur, they make the undertaking of the proposed contingent project reasonably necessary in order to achieve the capex objectives, specifically to meet or manage expected demand for prescribed transmission services.¹⁴⁵

B.3.7 Queensland to South Australia Interconnection Project (Queensland Component)

In the revised proposal, Powerlink proposed a new contingent project, the Queensland to South Australia Interconnection project (Queensland Component). This project is proposed as an option to reduce South Australia's higher electricity base load prices and to provide access to South Australia's excess wind and solar capacities.¹⁴⁶ Powerlink also presented this project as an option to address security of supply

¹⁴³ Powerlink, *Revised Revenue Proposal 2018–22, Appendix 4.02, Revised Contingent Project Plan, December 2016*, p.23.

¹⁴⁴ AER, *Draft Decision Powerlink transmission determination 2017–18 to 2021–22: Attachment 6–Capital Expenditure*, September 2016, pp.79-81.

¹⁴⁵ NER, cl. 6A.8.1(c)(2).

¹⁴⁶ Powerlink, *Revised Revenue Proposal 2018–22, Appendix 4.02, Revised Contingent Project Plan, December 2016*, p. 25.

concerns as a consequence of the system black event that occurred in South Australia on 28 September 2016.¹⁴⁷

Powerlink noted that ElectraNet commenced the RIT-T consultation process on 7 November 2016, to examine options for increasing the interconnection between South Australia and the rest of the NEM by publishing a Project Specification Consultation Report (PSCR).¹⁴⁸ Powerlink submitted that they have with ElectraNet and other NEM TNSPs commenced studies into the network options presented in the PSCR.¹⁴⁹

One of the options considered in the PSCR is establishing a high capacity interconnector between ElectraNet's Davenport Substation and Powerlink's Bulli Creek Substation. This option will require Powerlink to establish the Queensland component of the Queensland to South Australia Interconnector project. This will include Powerlink establishing new 330kV switchbays at Powerlink's Bulli Creek substation and construct approximately 100km of new 330kV double circuit line from Bulli Creek to an area west of Goondiwindi in the Queensland/NSW border. Powerlink estimates this project to cost \$120.0 million.¹⁵⁰

Powerlink proposed the following trigger events for this proposed contingent project:¹⁵¹

- Successful completion of the RIT-T demonstrating a network investment by Powerlink maximises the positive net market benefits from establishing a new high voltage interconnection between Queensland and South Australia
- Determination by the AER under clause 5.16.6 of the NER that the proposed investment satisfies the RIT-T; and
- Powerlink Board commitment to proceed with the project subject to the AER amending Powerlink's revenue determination pursuant to the Rules.

The Queensland Farmers' Federation (QFF) submitted that a review of all viable options to address the issues raised through this proposed project, including demand management alternatives should be undertaken.¹⁵² The QFF noted an independent review of the NEM by Dr Alan Finkel. The QFF suggested that the RIT-T process reflects the decisions taken about the strategic direction of the NEM under a broader post-2017 policy framework. The QFF noted that the South Australian blackout should not be used to make hurried decisions which will impact electricity prices for the life of

¹⁴⁷ Powerlink, *Revised Revenue Proposal 2018–22, Appendix 4.02, Revised Contingent Project Plan*, December 2016, p. 25.

¹⁴⁸ Powerlink, *Revised Revenue Proposal 2018–22, Appendix 4.02, Revised Contingent Project Plan*, December 2016, p. 25.

¹⁴⁹ Powerlink, *Revised Revenue Proposal 2018–22, Appendix 4.02, Revised Contingent Project Plan*, December 2016, p. 25.

¹⁵⁰ Powerlink, *Revised Revenue Proposal 2018–22, Appendix 4.02, Revised Contingent Project Plan*, December 2016, p. 25.

¹⁵¹ Powerlink, *Revised Revenue Proposal 2018–22, Appendix 4.02, Revised Contingent Project Plan*, December 2016, p. 26.

¹⁵² Queensland Farmers' Federation, *Response to Powerlink Queensland Revised Revenue Proposal for the 2017–18 to 2021–22 Regulatory Period (as resubmitted by Powerlink on 1 December 2016)*, 23 December 2016, p.4.

the asset. The QFF recommended a framework for contestable interconnector service provision which will require independent functions to be established for Powerlink to compete fairly.¹⁵³

To further understand the joint planning process for this project, we sought information from Powerlink about how it will undertake this project with TNSPs in Queensland and South Australia.¹⁵⁴ Powerlink submitted that joint planning with other TNSPs has begun, in conjunction with the RIT-T consultation process initiated by ElectraNet.¹⁵⁵

Given ElectraNet has identified this project as a credible option in its PSCR, and planning consultation has begun between Powerlink and other TNSPs, we consider that the Queensland to South Australia Interconnection Project (Queensland component) (\$120.0 million) may be reasonably required to be undertaken in order to achieve the capital expenditure objectives.

However, we consider that the trigger events should be amended in order for us to be satisfied that each trigger event is appropriate. The revised trigger events which we are satisfied meet the NER Requirements are as follows:

1. Successful completion of the RIT-T demonstrating an overall network investment by all parties involved in the interconnector construction that maximises the positive net market benefits from establishing a new high voltage interconnection between Queensland and South Australia
2. Successful completion of the RIT-T demonstrating a network investment by ElectraNet that maximises the positive net market benefits from establishing a new high voltage interconnection between Queensland and South Australia
3. Successful completion of the RIT-T demonstrating a network investment by Powerlink that maximises the positive net market benefits from establishing a new high voltage interconnection between Queensland and South Australia
4. A determination by the AER (under Clause 5.16.6 of the National Electricity Rules) that the proposed investment satisfies the regulatory investment test for transmission; and
5. Powerlink Board commitment to proceed with the project subject to the AER amending Powerlink's revenue determination pursuant to the Rules.

These trigger events make it clear that should the event occur, they make the undertaking of the proposed contingent project reasonably necessary in order to achieve the capex objectives, specifically to meet or manage expected demand for prescribed transmission services.¹⁵⁶

¹⁵³ Queensland Farmers' Federation, *Response to Powerlink Queensland Revised Revenue Proposal for the 2017–18 to 2021–22 Regulatory Period (as resubmitted by Powerlink on 1 December 2016)*, 23 December 2016, p.4.

¹⁵⁴ AER, Powerlink information request #025 -Contingent Projects, email, 15 February 2017.

¹⁵⁵ Powerlink, Response to AER: Powerlink information request #025 -Contingent Projects, email, 22 February 2017.

¹⁵⁶ NER, cl. 6A.8.1(c)(2).

David Headberry submitted that with the introduction of the inter-regional transmission use of system approach for allocating costs from exporting regions to importing regions, the proposed project could benefit all Queensland consumers and so the costs could be allocated into shared assets.¹⁵⁷ We note that one of the trigger events required for this project is the successful completion of the RIT-T. This test will include cost-benefit analysis and market benefit analysis.¹⁵⁸ The issue raised through David Headberry's submission will be one of the factors considered by the RIT-T.

¹⁵⁷ Consumer Challenge Panel Sub Panel 4 (CCP4) David Headberry's submission to the AER, Response to the AER Draft Decision and Revised Proposal to Powerlink's electricity transmission network for a revenue reset for the 2017–19 regulatory period, 19 December 2016, p.17.

¹⁵⁸ See clause 5.16.1 of the NER (version 89).

C Ex post review - 2014–15 capex

We are required to provide a statement on whether roll forward of the regulatory asset base from the previous period contributes to the achievement of the capital expenditure incentive objective.¹⁵⁹ The capital expenditure incentive objective is to ensure that where the regulatory asset base is subject to adjustment in accordance with the NER, only expenditure that reasonably reflects the capex criteria is included in any increase in value of the regulatory asset base.¹⁶⁰

The NER require that the last two years of the previous regulatory control period (for the purposes of this decision, the 2012–17 regulatory control period) are excluded from the ex-post assessment of past capex.¹⁶¹ Further, the NER prescribe that the review period does not include the regulatory year in which the first Capital Expenditure Incentive Guideline was published (2013–14) or any regulatory year that precedes that regulatory year.¹⁶² Accordingly, our ex-post assessment only applies to the 2014–15 regulatory year.

We may exclude capex from being rolled into the RAB in three circumstances:¹⁶³

1. Where the TNSP has spent more than its capex allowance
2. Where the TNSP has incurred capex that represents a margin paid by the TNSP, where the margin refers to arrangements that do not reflect arm's length terms; and
3. Where the TNSP capex includes expenditure that should have been classified as opex as part of a TNSP's capitalisation policy.

C.1 Position

We are satisfied that Powerlink's capital expenditure in the 2014–15 regulatory year should be rolled into the RAB.

C.2 AER approach

We have conducted our assessment of past capex consistent with the approach set out in our Capital Expenditure Incentive Guideline (the Guideline). In our Guideline we outlined a two stage process for undertaking an ex-post assessment of capital expenditure:¹⁶⁴

- Stage one - initial consideration of actual capex performance

¹⁵⁹ NER, cl. 6A.14.2(b).

¹⁶⁰ NER, cl. 6A.5A(a).

¹⁶¹ NER, cl. S6A.2.2A(a).

¹⁶² NER, cl. 11.59.4(a).

¹⁶³ NER, cl. S6A.2.2A.

¹⁶⁴ AER, *Capital Expenditure Incentive Guideline*, November 2013, pp. 19-22.

- Stage two - detailed assessment of drivers of capex and management and planning tools and practices.

The first stage considers whether the TNSP has overspent against its allowance and past capex performance. In accordance with our Guideline, we would only proceed to a more detailed assessment (stage two) if a TNSP had overspent against its allowance, the overspend was significant, and its capex performance in the period of our ex-post assessment suggests that levels of capex may not be efficient or do not compare favourably to other TNSPs.

C.3 AER assessment

We have reviewed Powerlink's capex performance for the 2014–15 regulatory year. This assessment has considered Powerlink's out-turn capex relative to the regulatory allowance given the incentive properties of the regulatory regime for a TNSP to minimise costs.

Powerlink incurred capex below its forecast regulatory allowance in the 2014–15 regulatory year. Therefore, the overspending, requirement for an efficiency review of past capex is not satisfied.¹⁶⁵ Accordingly, this supports the view that this expenditure is consistent with the capital expenditure incentive objective.

We have also had regard to some measures of input cost efficiency as published in our latest annual benchmarking report.¹⁶⁶ We recognise that there is no perfect benchmarking model, and as noted by Powerlink we have been cautious in our initial application of these techniques for assessing the efficiency of expenditure in recent transmission determinations.¹⁶⁷ However, we consider that our benchmarking models are the most robust measures of economic efficiency available and we can use this measure to draw conclusions regarding a TNSP's efficiency over time.

Under the NER, we are able to exclude capex only where a TNSP has overspent its allowance. Powerlink considerably underspent its allowance for 2014–15. However, this does not necessarily mean that the expenditure was prudent and efficient. Powerlink submitted that significant reductions in forecast demand growth led it to cancel or defer large amounts of load driven capex and also to change its planned replacement program.¹⁶⁸ In 2014–15, Powerlink spent less than \$5 million on load driven capex and spent \$100 million less on non-load driven capex than in 2012–13. Therefore, it is clear that Powerlink considered its changing operating environment over the 2012–17 regulatory control period, consistent with a prudent and efficient service provider. This indicates that Powerlink is improving its processes and expenditure practices. On this basis, we consider that the capex for 2014–15 reasonably reflects the capital expenditure incentive criteria.

¹⁶⁵ NER, cl. S6.2.2A(c).

¹⁶⁶ AER, *Annual benchmarking report: Electricity transmission network service providers*, November 2015.

¹⁶⁷ Powerlink, *Revenue Proposal 2017-22*, January 2016, p. 28.

¹⁶⁸ Powerlink, *Revenue Proposal 2017-22*, January 2016, p. 25.