Energy Infrastructure Investments

Directlink Joint Venture

Revised Transmission Determination Proposal

Effective

July 2020 to June 2025

Contents

Tables

Figures

Attachments

Attachment	Description
3.1	Gilbert & Tobin – End of life costs
3.2	End of Life costs
3.3	GHD – End of life costs
3.4	Forecast operating expenditure model
4.1	Forecast capital expenditure model
4.2	Refurbishment business case
4.3	PwC – Capitalisation of reset costs
4.4	Cable modification business case
5.1	Transmission roll forward model
8.1	Post tax revenue model
9.1	Pricing methodology
10.1	EBSS model
10.2	CESS model
12.1	Director's statement

Glossary

Term	Definition
AARR	Aggregate Annual Revenue Requirement
ABS	Australian Bureau of Statistics
AC	Alternating Current
ACCC	Australian Competition and Consumer Commission
AEMC	Australian Energy Market Commission
AEMO	Australian Energy Market Operator
AER	Australian Energy Regulator
AWOTE	Average Weekly Ordinary Time Earnings
CESS	Capital expenditure sharing scheme
CGS	Commonwealth Government Securities
DC	Direct Current
DNSP	Distribution Network Service Provider
DRP	Debt Risk Premium
EBSS	Efficiency Benefit Sharing Scheme
EGWWS	Electricity, Gas, Water and Waste Services
EII	Energy Infrastructure Investments
HVDC	High Voltage Direct Current
LPI	Labour Price Index
MAR	Maximum Allowed Revenue
NEM	National Electricity Market
NEO	National Electricity Objective
NER	National Electricity Rules
NPV	Net Present Value
Proposal	Directlink Revenue Proposal
PTRM	AER Post Tax Revenue Model
RAB	Regulatory Asset Base
RIT	Regulatory Investment Test

RFM	(Asset Base) Roll Forward Model
Rules	National Electricity Rules
STPIS	Service Target Performance Incentive Scheme
TNSP	Transmission Network Service Provider
WACC	Weighted Average Cost of Capital

Executive Summary

Directlink is an electricity transmission interconnector that operates between New South Wales and Queensland.

It provides significant benefits to the consumers of electricity in New South Wales and Queensland by enabling AEMO to transfer electricity between the states when prices differ.

EnergyEdge estimates the value of the wholesale market cost savings derived from Directlink in calendar years 2016 to 2018 at $1.1 billion.

Directlink's revised Transmission Determination proposal covers the period from 1 July 2020 to 30 June 2025.

Directlink accepts large elements of the AER's draft determination which in turn accepted large elements of the Directlink Transmission determination proposal.

Directlink's proposed Revenue is similar to what it earnt in the current period and what the AER decided in its draft determination.

Directlink's revised proposal reflects feedback it got from its stakeholders over the period of its stakeholder engagement program.

Directlink's revised proposal is seeking revenue of $82 million for the five years.

1 Benefits provided by Directlink

The most important benefit Directlink provides is it introduces another point of competition into the wholesale markets in Queensland and New South Wales.

Directlink makes a considerable contribution to lowering customers' bills. EnergyEdge valued this contribution at $1.19 billion over the three year period (Calendar years 2016-2018). This is compared to a cost to consumers of approximately $42m over the same time period. A benefit 28 times the cost to customers.

Directlink does this by being dispatched by AEMO at times when there are wholesale market price differences between Queensland and New South Wales. The greatest benefit is when the Queensland-New South Wales Interconnector is constrained or at capacity.

In addition to its capacity there are additional benefits provided by Directlink, due to it being a different technology than the major transmission networks. A High Voltage Direct Current interconnector inherently has stable power characteristics – stable frequency and voltage.

This provides means the HVDC interconnector represents a point of stability within the broader transmission network, it does not contribute to changes in power characteristics.

Directlink is also located between two growing population centres Gold Coasyt/Tweed heads and Byron Bay. This provides an alternate source of power than that provided by Powerlink to the Gold Coast and Transgrid to Byron adding to the reliability of power experienced by these locations.

For regulatory purposes there has been no value applied to these characteristics. In part this reflects that in the historically stable national network these characteristics had a relatively low value but as national networks become more volatile this capability has increasing value to customers, particularly in South East Queensland and North East NSW.

2 Consumer engagement

Directlink has focused on its stakeholder engagement approach and has engaged GHD to assist with design and implementation of this program.

2.1 Pre-Draft Determination engagement

Directlink commenced its stakeholder engagement in July 2018.

The first stage of the engagement process was to seek stakeholder feedback on Directlink and understand what stakeholders were looking for in terms of Directlink engagement going forward.

This process was completed in November 2018. Directlink then approached stakeholders offering one on one briefings as to the content of the Directlink proposal. This was undertaken in December 2018 and January 2019. There was limited time to reflect this feedback in the transmission determination proposal. Directlink has, however, reflected stakeholder views in the Directlink asset management plan and this revised proposal.

Following the submission of the transmission determination proposal Directlink conducted workshops in Brisbane, Sydney and Melbourne. In these workshops Directlink outlined the benefits of Directlink, the contents of our proposal and sought feedback on future engagement.

The key feedback from our Key Stakeholder Panel was:

- Support for Directlink undertaking stakeholder engagement;
- Concern about the cost of electricity to customers;
- Support for the role that Directlink performs in lowering costs to customers;
- Emphasis on the need for timely engagement;
- Importance of a flexible approach to engagement.

Stakeholders raised concerns that Directlink did not consult broadly prior to the submission of the revised proposal and only gave limited time for consideration of issues prior to the first consultation. Directlink has acted upon that feedback in the subsequent consultations.

This is demonstrated by:

- Directlink had a follow up session in July to discuss with interested stakeholders the allowance for end of life costs that it was proposing and provided additional information and sought feedback from stakeholders.
- Feedback on subsequent engagements has been supportive of the transparent and open manner in which Directlink has approached stakeholder engagement and supportive of moves by Directlink to make its stakeholder engagement more flexible and accessible for stakeholders.

Directlink acknowledges that its broader stakeholder engagement process has been a learning experience but has been encouraged by the engagement of its Key Stakeholder Panel in participating as Directlink refines and evolves its approach to stakeholder engagement.

2.2 Post Draft Determination engagement

Since the publication of the draft determination Directlink has contacted its Key Stakeholder Panel to undertake further engagement. Participants were offered a range of options for engaging with Directlink. The two most popular were either one on one discussions or online feedback.

To support both approaches Directlink prepared and circulated an update information pack for stakeholders that included the AER's draft determination and Directlink's considerations to support development of its Asset Management Plan and Revised Proposal.

Feedback from stakeholders was used to develop the Asset Management Plan. The feedback was also provided to the EII Board at its consideration of the Asset Management Plan.

The key points that Directlink took away from this most recent round of engagement were:

- Support for the transparent approach to engagement that Directlink were undertaking;
- A flexible approach to engagement was helpful to the Key Stakeholder Panel;
- Directlink should continue attempts to reach out to a broader group of representatives;
- Support for ongoing consideration of the major projects and support for reductions in the forecast capital expenditure.

Our engagement since the draft determination has focused on those areas of difference with the AER's draft determination and ongoing refinement to stakeholder engagement:

- Revised Proposal allowance for end of life costs;
- Revised Proposal timing differences with forecast capital expenditure;
- Revised Proposal forecast operating expenditure;
- Updating on Directlink performance.

2.3 Key actions in response to stakeholder feedback

Directlink discussed all major differences between the draft determination and this revised proposal with its key stakeholder panel, outlining why the change arose or was necessary. No significant concerns were expressed around individual projects. Stakeholders emphasised that it was important that

Directlink manage its costs for the benefit of consumers concerned about the cost of electricity.

In response to support for wider stakeholder engagement Directlink has contacted a number of potential stakeholders. We welcome the participation of consumer representatives, relevant local and state governments and other energy market stakeholders on our Key Stakeholder Panel.

In response to concerns raised by stakeholders about the cost of electricity Directlink has found some modest reductions in its forecast capital expenditure and is proposing a forecast of capital expenditure below that set out in the AER's Draft Determination as part of our focus on continued evaluation of future projects and the focus on reducing costs to customers.

In response to requests for more detail in relation to the allowance for end of life costs, Directlink has put together an explanation of its approach – see attachment 3.2 and section 3.2.1.

In response to a desire for a flexible approach to engagement Directlink will offer the same approaches to engagement in the future to that it offered in the most recent round of engagement. As always Directlink is open to suggestions from stakeholders on this aspect.

3 Forecast operating expenditure

3.1 AER's draft determination for forecast operating expenditure

The box below sets out the AER's draft determination

Figure 3-1 – AER's draft determination on forecast operating expenditure

> Our draft decision is to include total forecast opex of $23.5 million ($2019–20) in Directlink's revenue for the 2020–25 regulatory control period.

3.2 Directlink's revised proposal

In the draft determination the AER rejected the capital expenditure associated with an allowance for the end of life costs (restoration and rectification). In part this was based on the AER's concerns as to whether this was expenditure in accordance with the National Electricity Rules. The AER had a particular concern in relation to the requirements of schedule S6A to include the expenditure in the Regulatory Asset Base.

In response to the AER's concerns Directlink engaged Gilbert & Tobin to provide a legal opinion on the operation of the National Electricity Rules and the ability to establish a capital allowance to recover end of life costs. The advice is attached (Attachment 3.1).

The key passages of the legal advice are set out below

Figure 3-2 – Legal advice on allowance for end of life costs

> "an allowance for operating expenditure may be made under the NER in advance of the regulatory obligation crystallising – the NER do not prevent an allowance being made for the anticipated future costs of a known regulatory obligation;"
>
> "if Directlink had sought to classify the allowance as capital expenditure, it is not clear how this allowance could have been rolled into the regulatory asset base (RAB) at the end of the regulatory control period. However this issue no longer arises, as Directlink now proposes to treat the allowance as operating expenditure;"

If capital expenditure cannot be added to the regulatory asset base it cannot be recovered through revenue. This would undermine the purpose of the allowance to create the means to pay end of life costs by recovering them from the customers who receive the transmission service.

3.2.1 *End of life cost allowance*

Consistent with the concerns raised by the AER in its draft determination, Directlink has amended its revised proposal forecast operating expenditure to include the allowance for end of life costs.

Treating the allowance as operating expenditure is consistent the National Electricity Rules and also consistent with the treatment of these costs in other regulated industries, such as ports.

At a high level the allowance will be calculated to establish an annual operating expenditure amount that over the life of Directlink will collect the amount of end of life costs:

- the end of life costs have been estimated by GHD;
- The calculation will take into account interest earnt;
- Directlink is expected to finish operation in financial year 2042.

More detail on the mechanics of the operation of the end of life cost allowance proposal is set out in the attached document "End of life cost allowance". (Attachment 3.2)

Estimate of end of life costs

GHD have taken an approach of utilising their expert knowledge of the engineering required to remove Directlink equipment to determine a unit cost for an activity then multiplying it by the volume of work.

It has divided Directlink into the following elements:

- Above ground cable;
- Below ground cable;
- HVAC cable;
- Converter station materials.

It has then measured the distance of above and below ground cables and done an engineering estimate of the volume of material at the converter stations.

GHD then has calculated a unit rate for the removal of this material and restoration of the location in order to determine the total cost of removal and restoration.

This determines it has a cost estimate as set out in the table below:

Table 3-1 – GHD calculation of end of life costs

	Cost ($m)
Underground Cable	2.65
Above Ground Cable	9.32
HVAC Cable	1.45
Converter Station	1.58
Total	15.00

More detail is available in GHD's attached report (attachment 3.3).

Subtracted from this total is the value that Directlink may obtain for the sale of the land it owns. Land valuation experts value this land at $825,000.

This derives a value of end of life costs to be recovered of $14,175,000 ($ real 2020).

Calculation of the annual allowance

Directlink has based the calculation of the annual allowance on the Queensland Competition Authority's approach on the Dalrymple Bay Coal Terminal Management's 2015 draft access undertaking.

As set out in the quote below consistent with calculations of annualised costs the Queensland Competition Authority utilised an annuity formula to calculate the annual allowance.

Figure 3-3 – QCA calculation of annual allowance

> The annual allowance represented the fixed annuity payment required to accumulate the expected future rehabilitation costs [1]

Consistent with the treatment of end of life costs in other fully regulated industries the calculation will be reviewed at each transmission reset to update as necessary any inputs.

Subsequent periods will take into account any money collected in previous Transmission Determination periods. For a fuller explanation of the formula see attachment 3.2.

[1] P 138, QCA, DBCT Management's 2015 draft access undertaking, November 2016.

Ensuring funds are available for end of life costs

The AER noted concerns with regards to how the money would be used and available at the end of asset life.

Figure 3-4 – AER concerns with future allowance

> further consideration and explanation of how the proposed land restoration funds are recovered, accrued, managed and expended over time would be beneficial.[2]

In terms of management of the funds the inclusion of the allowance in the revenue determination will trigger the recognition of the allowance and the future obligation for statutory recording purposes.

Broadly, from a statutory accounting perspective, the end of life costs for property plant and equipment would be booked as a "Make Good" provision. An amount will be debited to restitution expense and credited to the provision each year and so the provision will accumulate over time.

At the end of each reporting period, the provision should be reviewed and adjusted, if materially necessary, to reflect the current best estimate.

In turn the statutory accounting obligations trigger the obligations that exist in the corporate law around director's duties and the obligations with regards to corporate solvency that protect the value of these future obligations.

Discount Rate

The discount rate used will need to reflect the nature of the obligation posed on Directlink.

If Directlink is expected to guarantee the availability of the money, then it will have to set aside the amount collected each year and hold it in a form that has very limited likelihood of the risk of losses so that the money is guaranteed to be available in the future. That is, holding the money in the form of a bank account or low risk investment such as a government bond. Then a discount rate reflecting the nature of that investment should be set.

However, if similar to the Queensland Competition Authority, the AER determines this amount should be allowed and the decision on how to set aside that money for the future cost is left to the business, it is more appropriate

[2] P20, AER Attachment 5, Draft Determination

that similar to the Dalrymple Bay Coal Terminal decision the Weighted Average Cost of Capital be used.

Stakeholder feedback expressed concerns about ensuring that the money was there when called upon which suggests the former. Therefore, Directlink has used the risk free rate as the discount factor consistent with the former view of what should happen with the allowance for end of life costs received each year.

Why not delay?

There are a number of reasons why it is better to set aside an amount for end of life costs now rather than wait until closer to the occasion on which they will be incurred.

It is more consistent with the National Electricity Objective which is:

Figure 3-5 – National Electricity Objective

> The objective of this Law is to promote efficient investment in, and efficient operation and use of, electricity services for the long term interests of consumers of electricity with respect to—
>
> (a) price, quality, safety, reliability and security of supply of electricity; and
>
> (b) the reliability, safety and security of the national electricity system.

It is efficient that expenditure incurred on investment in and operation of a network on behalf of customers is attributed to those customers. This will lead to more efficient investment and operation of the asset over time. The cost profile will better fit the benefit profile. It removes incentives to inefficiently delay or bring forward expenditure.

Further it is consistent with the National Electricity Objective and Rules that the compounding effect of interest is used to lower the overall cost to consumers.

The impact of uncertainty of the final cost can be addressed at each subsequent transmission determination. This means the benefit of waiting is limited.

The foregone benefit of not availing Directlink (and therefore customers) of the benefit of compounding interest is significant. The cost/benefit of taking this approach is obviously and demonstrably in favour of setting up the allowance now. The benefit of delay will be measured in tens of thousands of dollars but the cost will be measured in hundreds of thousands of dollars.

Directlink is assuming in this revised proposal that the amount collected under the allowance is relevant information to be reported annually to the AER under the AER's information powers under 6A.17.1(d)(3) or the NER.

The consistency of this expenditure with the requirements of the National Electricity Rules is set out in the advice from Gilbert & Tobin in attachment 3.1

3.2.1.1 Stakeholder engagement

Directlink engaged with its key stakeholders on the allowance of end of life costs. The feedback was:

- support for charging end of life costs to customers who benefit from the existence of Directlink;
- request for more detail in relation to how the allowance would work;
- support a mechanism based on approaches undertaken in other regulated industries;
- Support engaging an expert for determining end of life costs.

In response to the request for more detail Directlink prepared the document in attachment 3.2 and circulated it to interested stakeholders.

3.2.2 Directlink's revised proposal;

The outcome of the inclusion of the end of life cost allowance in forecast operating expenditure is set out in Table 3-2 below.

Table 3-2 – Forecast operating expenditure ($m real 2020)

	2020/21	2021/22	2022/23	2023/24	2024/25	Total
Baseline operating expenditure	4.5	4.6	4.6	4.7	4.7	23.1
End of life costs	1.0	0.9	0.9	0.9	0.9	4.6
Revised proposal operating expenditure	5.5	5.5	5.5	5.6	5.6	27.7

The calculation of the forecast operating cost is set out in the forecast operating model (attachment 3.4).

The difference between the Revised Proposal and the Draft Determination is the inclusion of the end of life costs.

4 Forecast capital expenditure

4.1 AER Draft Determination

The AER summarised its draft determination with regard to Directlink's forecast capital expenditure. This summary is set out in the box below.

Figure 4-1 – AER's draft determination on forecast capital expenditure

Table 5-1 Draft decision on Directlink's total forecast transmission capex ($million 2019–20)

	2019–20	2020–21	2021–22	2022–23	2023–24	Total
Directlink's proposal	11.5	8.2	7.2	8.5	4.9	40.5
AER draft decision	10.4	6.7	4.8	4.9	3.8	30.6
Difference	-1.1	-1.5	-2.4	-3.6	-1.1	-9.9
Percentage difference (%)	-9.6%	-18.3%	-33.3%	-42.5%	-22.4%	-24.4%

Directlink is proposing less forecast capital expenditure than the AER approved in its draft determination.

4.2 Directlink Revised Proposal

Table 4-1 – Forecast capital expenditure ($m real 2020)

	2020/21	2021/22	2022/23	2023/24	2024/25	Total
Draft Decision approved capital expenditure	10.4	6.7	4.8	4.9	3.8	30.6
Revised proposal capital expenditure	4.9	6.6	5.4	5.0	3.9	25.8
Difference	-5.5	-0.1	0.6	0.1	0.2	-4.8

All forecast capital expenditure is set out in the attached capital expenditure model (Attachment 4.1)

4.3 Stakeholder engagement

Directlink has discussed its proposals contained in this chapter with its Key Stakeholder Panel. Their feedback was:

- Encourage Directlink to focus on limiting costs;
- Concern that Directlink's forecast regulatory asset base continues to grow.

Directlink remains focused on minimising its capital expenditure.

Directlink noted that the increase in regulatory asset base is driven by two large projects in the current and next transmission determination periods. The replacement of the control and protection system in the current period ($11.2m) and the need to replace IGBTs in the next transmission determination period ($3.3m per year). It is Directlink's expectation that these factors are temporary in nature and that long term capital expenditure will fall in future periods.

Directlink notes that the other factor that is strongly influencing the path of the regulatory asset base is the AER's decision to index for inflation.

4.4 Accepted AER's draft decision on projects

4.4.1 Rail Trail

Directlink included in its proposal an amount of forecast capital expenditure associated with safety measures related to the creation of the Northern Rivers Rail Trail. In the proposal we noted that the Commonwealth and NSW governments had committed money to the project.

Directlink provided a high level estimate of these costs based on the preliminary nature of the consideration of the Rail Trail at the time of our proposal.

Shortly after the proposal was due the Tweed Shire Council was to go to tender for aspects of the Rail Trail construction.

Ongoing consultation with the Tweed Shire Council indicated that there were a number of steps that were required to happen prior to the Rail Trail being constructed, in particular, there would need to be legislation to transfer the responsibility for management of the land to the Tweed Shire Council for it to be able to begin the construction of the Rail Trail.

It was Directlink's expectation that in the 10 months between submission of the proposal and the submission of the revised proposal that the necessary preconditions would be met and the Tweed Shire Council would be in a position to have the designs for the rail trail. However, this has not been the case. As a result Directlink agrees with the AER's draft decision that this project is not sufficiently crystalized to satisfy the requirements of the National Electricity Rules.

This project, and associated expenditure forecast, has been removed from the revised proposal.

4.4.2 *Variable Speed Drives*

The AER rejected the installation of variable speed drives based on the information that Directlink provided in the proposal and subsequent information requests. No additional information exists to that submitted to the AER.

This project, and associated expenditure forecast, has been removed from the revised proposal.

4.5 Changes in project timing since proposal

This section refers to projects that were contained in the AER's draft determination. The projects remain the same but the time when the project will be undertaken has changed.

4.5.1 *Fibre Optic Cables*

As noted in the Directlink transmission determination proposal ABB informed Directlink in October 2018 that no new Generation One IGBTs would be produced from that date.

The consequences of this were still being analysed at the time of the proposal. However, one consequence of this was it made the preservation of the existing IGBTs a much higher priority.

As noted in the proposal Directlink had observed a direct relationship between failures of the fibre optic cables (sometimes called lightguides) and the IGBT connected to the cable.

Directlink had also tested the fibre optic cables and found that a greater proportion than identified in the last transmission determination were showing signs of deterioration. This was the basis of the forecast project approved by the AER to accelerate the replacement of fibre optic cables.

The obsolescence of the IGBTs has dramatically increased the priority of replacing the fibre optic cables to preserve any remaining IGBTs. As a result Directlink has accelerated the program of replacement and expects to finish the project in this financial year.

Directlink was forecasting this project to cost $3.6m. However, cost differentials mean that the forecast material cost is $2.3. There will be additional cost for installation but the expected forecast cost is less than $3.6m.

4.5.2 *Refurbishment/Replacement Capital expenditure*

Directlink continually balances the resource requirements of the suite of projects that it is undertaking. This means that the acceleration of the fibre optic cable replacement meant delays to some other projects.

Refurbishment/Replacement capex is the replacement or refurbishment of key equipment in accordance with manufacturer recommendations. There is a risk from delaying this work in that it could result in breakdowns of this equipment. However, this risk is lower than the risk posed by a failure of Generation One IGBTs.

This project comprises replacement or overhaul of the following equipment:

- Reactor Cooling Fan Electric Motors;
- Valve Cooling System Pumps;
- Valve Cooling System Electric Motors;
- Cooling Tower Electric Motors;
- Motor Control Centre Motor Start Contactors;
- Motor Control Centre Control Relays;
- Motor Control Centre Switches;
- Dehumidifiers.

The decision on whether to replace or refurbish will be undertaken on a case by case basis depending on the cost of the alternative approaches and whether life expectancy differs between them.

In the absence of this replacement/refurbishment this equipment will fail with the reliability risk on Directlink. This means the expenditure is consistent with NER 6A.6.7(a)(3).

Directlink has supported the inclusion of this forecast capital expenditure in the attached business case (see attachment 4.2).

Table 4-2 – Refurbishment/Replacement forecast capital expenditure ($m real 2020)

Project	2020/21	2021/22	2022/23	2023/24	2024/25	Total
Refurbishment	0.4	0.4	0.1	0.0	-	1.0

4.5.3 *Insulated Gate Bipolar Transistors*

Directlink has postponed the commencement date for the Asset Replacement Contract until 1 January 2021. This should provide sufficient time to undertake the Regulatory Information Test – Transmission and negotiate, if

necessary, the terms of the contract with ABB prior to commencement. This expenditure serves the same purpose as outlined in the transmission determination proposal and is consistent with the obligations of the NER.

While this is a delay to the proposed commencement date and increases the risk that Directlink may have to shut down a system due to the loss of IGBTs, it is the most realistic timeline given resource constraints and the obligations of the replacement capex RIT-T.

The forecast capital expenditure in the revised proposal recognises this six month delay in commencement.

Table 4-3 – IGBTs forecast capital expenditure ($m real 2020)

Project	2020/21	2021/22	2022/23	2023/24	2024/25	Total
IGBTs	1.7	3.5	3.5	3.5	3.5	15.6

4.6 Changes to AER's draft Determination

4.6.1 *Transmission Determination capital expenditure*

In the draft determination the AER rejected Directlink's approach to treating transmission determination costs as capital expenditure.

AER's draft determination

Figure 4-2 – AER's draft determination on the transmission determination capital expenditure

> In our view, these costs are unlikely to attract any future economic benefits and are better recognised as opex rather than capex, consistent with the accounting standard AASB 116 Property, Plant and Equipment. However, we have not instead included Directlink's proposed regulatory costs in our opex forecast as a step change, consistent with our previous decisions

Directlink's revised proposal

Directlink rejects the AER's draft determination with regards to transmission determination costs.

Transmission determination costs are highly volatile reflecting the frequent changes to the NER, National Electricity Law and AER requirements.

In the proposal Directlink used a representative year to forecast transmission determination costs for the next transmission determination period. However,

this may have led to confusion and the AER characterising these costs as recurrent.

Directlink has used incurred and budgeted costs for the current transmission determination as the basis to forecast transmission determination costs in this revised proposal.

Table 4-4 – Transmission Determination capital expenditure ($ nominal)

Project	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Stakeholder engagement costs						
Newgate				51,679	-	51,679
GHD				10,974	54,026	65,000
Other Transmission Determination costs						
Other Transmission Determination costs				179,464	80,000	259,464
Total Transmission Determination costs	-	-	-	242,117	134,026	376,143

Transmission Determination expenditure is directly associated with Directlink being able to demonstrate the compliance with the obligations of the National Electricity Rules, in particular to demonstrate compliance and consistency with rule 6A.6.6 and 6A.6.7. As the forecast is based on historic expenditure then the characterisation of future expenditure is the same as the characterisation of that historic expenditure.

These costs represent the engagement of engineering experts, accounting experts, lawyers and stakeholder engagement experts with a focus on the obligations to determine future revenue for Directlink under the National Electricity Law.

On this basis Directlink rejects that the expenditure can be characterised as "unlikely to attract any future economic benefits". This expenditure is not incurred in the normal operation of the day to day business. Rather, it is expenditure incurred specifically for the purpose of the transmission determination proposal and revised proposal.

This means it is expenditure solely focused on the earning of future revenue for a regulated business. Given the nature of the expenditure the link between that expenditure and the economic benefit is clearly demonstrated.

Further, the attached advice (Attachment 4.3) from PwC assesses the expenditure against the Australian Accounting Standard. The opinion on the

expenditure assesses it against the relevant standard, AASB 138, and the accounting expert concluded this expenditure is capital in nature.

The key statement of the opinion is set out below.

Figure 4-3 – PwC view on transmission determination costs

> In our opinion, the major types of costs incurred by Energy Infrastructure Investments ("EII") to prepare the proposal of its Transmission Determination to the Australian Energy Regulator ("AER") for price determination are directly attributable costs incurred to obtain a legal right which satisfies the definition and recognition criteria in accordance with AASB 138 Intangible assets (AASB 138).
>
> Therefore these costs, where incremental and directly attributable, can be capitalised as the initial cost of an intangible asset being a legal right to charge at agreed prices.

This expenditure is consistent with the long term reliable operation of Directlink and is consistent with NER 6A.6.7(a)(3).

For forecasting Year 1 to Year 3 Directlink used the average of GHD engagement costs for 2018/19 and 2019/20. This balances a highly active stakeholder engagement program in 2019 with a part year engagement for 2018 resulting in an estimate that is likely to reflect future activity and cost. The stakeholder engagement actions undertaken are outlined in chapter 2.

Directlink has excluded the Newgate expenditure from the forecast because a significant part of that engagement was advice on establishing a stakeholder engagement process and is not expected to be reincurred in the future.

Directlink has proposed the following forecast capital expenditure in the revised proposal

Table 4-5 –Transmission Determination capital expenditure ($m real 2020)

Project	2020/21	2021/22	2022/23	2023/24	2024/25	Total
Transmission Determination	0.0	0.0	0.0	0.1	0.1	0.4

Notes on the AER's approach to operating expenditure

The AER undertakes an assessment of the forecast operating expenditure by calculating its own alternate estimate of operating expenditure.

The outcome of this alternate estimate is set out in Table 6-2 of attachment 6 of the Draft Determination. The starting point of this calculation is base operating expenditure. Then the AER proceeds to make adjustments to this base operating expenditure to derive the alternative estimate.

Due to the historic practice by Directlink of recording transmission determination costs as capital expenditure these costs are definitely not in base year operating expenditure. This is consistent with the regulatory accounts provided to the AER where transmission determination costs are included as other capital expenditure.

If the AER rejects, as they did, transmission determination costs from forecast capital expenditure then these costs need to be added to forecast operating expenditure or it amounts to a rejection of these costs in their entirety despite an acceptance that they represent part of the prudent and efficient costs of a regulated business.

4.6.2 *Cable Modification project*

In the transmission determination proposal Directlink identified a project that it had commenced to identify the cause of increasingly significant failures on Directlink's transmission cables.

The work at the time of the proposal had identified that the locations where the cable went from being underground into the galvanised steel tray above ground (the transition) were a particular location for cable failures.

However, work was still being undertaken at the time of the proposal to understand the nature of the problem and potential options to resolve the problem.

Since the time of the draft determination, Amplitude (the technical consultant) has identified the problem and put forward a potential solution.

The problem is in the thermal (temperature) properties of the ground, concrete and galvanised steel tray transitions. The observed faults are consistent with the modelling that indicates the differences in thermal radiation can cause faults when the cable is in operation. The modelling indicates this is due to the thermal radiation exacerbating temperature differences between the inner and outer parts of the insulation through the transition.

The proposed solution includes:

- Install a plastic sunshade over the galvanised steel trays;

- Add a thermal insulating foam layer to block out the heat from the inside of the galvanised steel trays, this is attached to the lid of the galvanised steel trays on the inside;
- Perforate the galvanised steel trays by drilling on the sides of the tray (this is to allow for the heat to escape from the galvanised steel trays);
- Paint the galvanised steel trays to improve heat reflection.

The purpose of these changes is to "smooth" the temperature changes in the cables operating environment over a greater distance at the transition.

There are over 70 transitions that will be subject to the changes.

A revised business case is attached (attachment 4.4)

Table 4-6 – Cable modification capital expenditure ($m real 2020)

Project	2020/21	2021/22	2022/23	2023/24	2024/25	Total
Cable Modification	0.3	0.3	0.3	0.3	-	1.1

In the absence of this expenditure the cables will continue to experience increasing failures affecting the reliability of Directlink. This means the expenditure is consistent with NER 6A.6.7(a)(3).

4.6.3 Noise Monitoring Equipment

In the draft determination the AER rejected Directlink's proposed noise monitoring equipment and work around the sound dampening for some equipment or fans.

The AER's justification for the rejection of this forecast capital expenditure was that:

Figure 4-4 – AER draft determination on Noise Equipment

> However, based on the Wood Group Report, we consider that the operation of the Mullumbimby converter station does not breach the noise limits of the relevant NSW environmental legislation. We consider that complaints are not of themselves justification for remediation action unless the noise level is outside of statutory limits.

This is not entirely consistent with the findings of the Wood Group report. The Wood Group report indicated that while they were undertaking their assessment the noise levels produced by Directlink were not inconsistent with noise levels in the relevant NSW environmental legislation.

What this means is that Directlink can be confident that it is not consistently producing noise levels that could be illegal. It cannot address whether Directlink is intermittently producing noise levels in excess of legal obligations.

Given the nature of the legislation – it does not set hard and fast rules on what is an acceptable level of industrial noise – then the complaint itself is a prima facie indication that something in the general vicinity of Directlink is producing noise levels in excess of the legally permitted levels.

The noise complaint noted that the excessive noise was intermittent. Given, Directlink's exposure to penalties under the relevant legislation it is prudent to invest in equipment that monitors noise levels so that Directlink can assess whether it has a problem, and if so, take remedial action.

Directlink agrees with the AER that it is normal industry practice to design converter stations to be within statutory noise limits and hence the plant should inherently comply unless something has altered. We note there are two things that have altered since Directlink was first designed and constructed. Firstly, the location and nature of Directlink's neighbours and secondly, the condition of Directlink's sound dampening. Directlink has been operating in a hostile environment for nearly 20 years. We know a number of parts of the noise suppressing equipment have deteriorated. The replacement of some of this equipment was accepted by the AER in its draft determination.

These factors could very well mean that a plant that was designed within the noise standards in 2000 are now operating outside of environmental requirements.

The more expensive alternative, to noise recording equipment, is to have a noise monitoring expert assess performance in multiple operating scenarios and with different pieces of Directlink's equipment operating.

Doing nothing and being found in breach of environmental obligations is not a prudent, or acceptable, outcome for any business.

However, recognising the feedback from the AER, Directlink has scaled back its proposed project considerably. Directlink is confident that this expenditure represents expenditure consistent with the requirements of the National Electricity Rules and NER 6A.6.7(a)(3) as necessary to keep operating consistent with our legal obligations.

Table 4-7 – Noise monitoring equipment capital expenditure ($m real 2020)

Project	2020/21	2021/22	2022/23	2023/24	2024/25	Total
Noise equipment	0.2	-	-	-	-	0.2

5 Asset bases

5.1 Regulatory Asset Base

5.1.1 AER's draft determination

The AER made a number of changes to the Roll Forward model as part of its draft determination. The box below sets out the AER's draft determination

Figure 5-1 – AER's draft determination on the Regulatory Asset Base

Table 2-1 AER's draft decision on Directlink's RAB for the 2015–20 regulatory control period ($million, nominal)

	2015–16	2016–17	2017–18	2018–19	2019–20
Opening RAB	129.4	130.8	130.9	138.2	141.4
Capital expenditure[b]	4.0	3.4	10.2	6.4	7.7
Inflation indexation on opening RAB[c]	2.2	1.9	2.5	2.5	2.8
Less: straight-line depreciation[d]	4.9	5.3	5.4	5.6	5.8
Interim closing RAB	130.8	130.9	138.2	141.4	146.1
Difference between estimated and actual capex in 2014–15					–0.9
Return on difference for 2014–15 capex					–0.2
Closing RAB as at 30 June 2020					**145.1**

5.1.2 Directlink's revised proposal

Directlink has updated the AER's roll forward model for actual capital expenditure for 2018/19 and a revised estimate for 2019/20 capital expenditure. The estimate for capital expenditures is based on actual capital expenditure to the end of October 2019 and a forecast for the remainder of the financial year.

The results of this calculation is set out in Table 5-1.

Table 5-1 – Opening regulatory asset base as at 1 July 2020 ($M, nominal)

	2015/16	2016/17	2017/18	2018/19	2019/20(e)
Opening RAB	129.4	130.8	130.9	138.2	141.4
Capital expenditure	4.0	3.4	10.2	6.4	9.7
Depreciation	-4.9	-5.3	-5.4	-5.6	-5.8
Indexation	2.2	1.9	2.5	2.5	2.8
Adjustment	-	-	-	-	-1.1
Closing RAB	130.8	130.9	138.2	141.4	147.1
Difference between actual and estimated capex in 2014-15					-0.9
Return on the difference in 2014-15 capex					-0.2
Closing RAB					146.0

The impact of these updates is minimal with the revised number broadly the same as the AER's draft determination of $145.1m.

5.2 Tax Asset Base

5.2.1 *AER's draft determination*

The AER made a number of changes to the roll forward model as part of its draft determination. The box below sets out the AER's draft determination

Figure 5-2 – AER's draft determination on the Tax Asset Base

Table 7-3 AER's draft decision on Directlink's TAB roll forward for the 2015–20 regulatory control period ($million, nominal)

	2015–16	2016–17	2017–18	2018–19	2019–20[a]
Opening TAB	99.0	99.2	98.6	104.6	106.4
Capital expenditure[b]	3.9	3.3	10.0	6.2	7.5
Less: tax depreciation	3.7	3.9	4.0	4.4	4.6
Closing TAB	**99.2**	**98.6**	**104.6**	**106.4**	**109.2**

As noted in section 5.1.1, Directlink has updated the AER's roll forward model for actual capital expenditure for 2018/19 and a revised estimate for 2019/20 capital expenditure.

Directlink has also used the AER's roll forward model to calculate the tax asset base. This is set out in Table 5-2.

Table 5-2 – Opening tax asset base as at 1 July 2020 ($M, nominal)

	2015/16	2016/17	2017/18	2018/19	2019/20(e)
Opening TAB	99.0	99.2	98.6	104.6	106.4
Capital Expenditure	3.9	3.3	10.0	6.2	9.5
Depreciation	-3.7	-3.9	-4.0	-4.4	-4.6
Closing TAB	99.2	98.6	104.6	106.4	111.2

The Roll forward model is attachment 5.1 to this revised transmission determination proposal.

6 Depreciation

6.1 Asset classes

6.1.1 *AER's draft determination*

In the draft determination the AER used the following asset classes for the next transmission determination period:

- Transmission Assets;
- Easements;
- Land;
- Buildings;

6.1.2 *Directlink's revised proposal*

In addition to the asset classes used by the AER in the draft determination, Directlink is proposing the addition of one other asset class – Transmission Determination.

The transmission determination asset class represents all those Directlink assets created for the purpose of creation, preparation and submission of the transmission determination proposal and revised transmission determination proposal.

The inclusion of this asset class is to draw the direct relationship between the expenditure incurred and the economic benefit that is provided. That is, the costs are incurred for the purpose of earning revenue and should be depreciated over the period to which that economic benefit applies.

This approach is the same to that utilised in EII's audited statutory accounts for Directlink. The transmission determination costs are an intangible asset which is amortised over the life of the applicable transmission determination period.

6.2 Regulatory Depreciation

The regulatory depreciation in this revised proposal has been calculated using the AER's PTRM reflecting the updated regulatory asset base as of 1 July 2020 (Table 5-1 – Opening regulatory asset base as at 1 July 2020 ($M, nominal)Table 5-1), updated capital expenditure forecasts (Table 4-1), updated inflation forecast (section 7.2) and revised asset classes (above). Directlink propose the depreciation outlined in Table 6-1

Table 6-1 – Depreciation by Asset Class ($m real FY2020)

	2020/21	2021/22	2022/23	2023/24	2024/25	Total
Transmission assets	6.8	7.0	7.3	7.6	7.8	36.6

Transmission Determination Costs	-	0.0	0.0	0.0	0.0	0.1
Easements	0.0	0.0	0.0	0.0	0.0	0.1
Land	-	-	-	-	-	-
Buildings	-	0.0	0.0	0.0	0.0	0.1
Total	6.8	7.1	7.4	7.7	7.9	36.9

The AER's PTRM applies indexation to the regulatory asset base which is subtracted from straight-line depreciation to calculate regulatory depreciation.

Table 6-2 – Forecast depreciation 2020-25 ($M, nominal)

	2020/21	2021/22	2022/23	2023/24	2024/25
Depreciation	-7.0	-7.4	-8.0	-8.4	-8.9
Indexation	3.4	3.5	3.6	3.6	3.6
Regulatory depreciation	-3.6	-4.0	-4.4	-4.8	-5.3

6.3 Remaining Asset lives

The weighted average remaining asset lives are set out in Table 6-3.

Table 6-3 – Weighted average remaining asset lives as at 1 July 2020

Asset class	Useful life
Transmission Assets	21.2
Easements	21.2
Buildings	21.2
Transmission Determination	5.0
Land	n/a

Directlink accepts the AER's draft determination to link the standard and remaining life of the assets in the draft determination in table 4-3.

7 Rate of return, value of imputation credits and expected inflation

7.1 Rate of Return and imputation credits

7.1.1 *AER's draft determination*

The AER's draft determination did not approve Directlink's proposed allowed rate of return. This is not due to any disagreement as to application of the Binding Instrument but solely due to the movement in values for risk free rate and debt over the period between Directlink's submission and AER draft determination.

Figure 7-1 – AER's draft determination on rate of return

Table 3-1 Draft decision on Directlink's rate of return (% nominal)

	Previous Regulatory Period (2015–20)	Directlink's Initial Proposal (2020–25)	AER draft decision (2020–25)	Allowed return over regulatory control period
Nominal risk free rate	2.55%	2.45%	1.32%[a]	
Market risk premium	6.5%	6.1%	6.1%	
Equity beta	0.7	0.6	0.6	
Return on equity (nominal post–tax)	7.1%	6.11%	4.98%	Constant (%)
Return on debt (nominal pre–tax)	4.35%[b]	4.55%	4.47%	Updated annually
Gearing	60%	60%	60%	Constant (60%)
Nominal vanilla WACC	5.45%[b]	5.18%	4.68%	Updated annually for return on debt
Expected inflation	2.55%	2.41%	2.45%	Constant (%)

7.1.2 *Directlink's response*

For the purpose of calculating a maximum allowed revenue for the revised proposal, Directlink has updated the inputs for the calculation of rate of return consistent with the AER's binding rate of return instrument.

Directlink has calculated the rate of return largely in accordance with the December 2018 Rate of Return Instrument. Where market data have been used, these were for a period of 20 trading days to 31 October 2019.

During the period 18 September 2019 to 5 November 2019, the Thomson Reuters service did not publish yields on BBB rated corporate bonds with term to maturity of 10 years. Understanding that the rate of return in this response to the draft decision on the revenue proposal is only a placeholder for the AER's final rate of return determination, Directlink has estimated the rate of return on debt as the average of yields obtained only from Reserve Bank of Australia data, and from the Bloomberg service.

Table 7-1 – Rate of Return

	Draft Determination	Revised Proposal
Nominal risk free rate	1.32%	1.05%
Market risk premium	6.1%	6.1%
Equity beta	0.6	0.6
Return on equity (nominal post–tax)	4.98%	4.71%
Return on debt (nominal pre–tax)	4.47%	4.44%
Gearing	60%	60%
Nominal vanilla WACC	4.68%	4.54%

Directlink notes the AER will update these inputs again before issuing its final determination and these values are expected to change.

Directlink accepts the averaging period outlined in the AER''s draft determination.

7.2 Expected inflation

7.2.1 *AER's draft determination*

The AER has forecast inflation of 2.45% for the period.

7.2.2 *Directlink's response*

Directlink has applied the AER's methodology for inflation but updated to reflect the publication of a new Reserve Bank of Australia Forecast for inflation, contained in the statement of monetary policy, and has calculated a forecast of inflation of 2.34%

8 Maximum allowable revenue

Directlink's Revised Revenue Proposal is derived from the post-tax building block approach outlined in the Rules[3] and the AER's PTRM.[4] The completed PTRM forms Attachment 8.1 to this revenue proposal. The Maximum Allowed Revenue (MAR) and X factor for Directlink are calculated from the PTRM. Future adjustments to the revenue cap are also described.

8.1 Building Block components

The building blocks that formed a part of the revenue calculation are set out below.

8.1.1 Forecast regulatory asset base

AER's draft determination

Chapter 5 described the calculation of the estimated RAB as at 1 July 2020.

The capital expenditure forecast in Chapter 4 and was used to roll forward the regulatory asset base, using the expected regulatory depreciation detailed in this chapter. The regulatory asset base for the next transmission determination period is set out in Table 8-1.

3 *National Electricity Rules*, Part C of Chapter 6A, AEMC.

4 AER, Final decision, Amendment - Electricity transmission network service providers Post-tax revenue model, December 2010.

Table 8-1 – Summary of forecast regulatory asset base ($M, nominal)

	2020/21	2021/22	2022/23	2023/24	2024/25
Opening regulatory asset base	147.1	148.6	151.6	153.1	153.8
plus indexation	3.4	3.5	3.5	3.6	3.6
plus forecast capital expenditure	5.0	7.0	5.9	5.5	4.4
less forecast depreciation	-7.0	-7.4	-7.9	-8.4	-8.9
less forecast disposals	-	-	-	-	-
less forecast redundant assets	-	-	-	-	-
Closing regulatory asset base	148.6	151.6	153.1	153.8	152.9

8.1.2 Return on capital

The return on capital was calculated by applying the post-tax nominal vanilla WACC to the opening regulatory asset base in the respective year.

Directlink has calculated the return on capital using the PTRM. This calculation is summarised in Table 8-2.

Table 8-2 – Summary of return on capital forecast ($M, nominal)

	2020/21	2021/22	2022/23	2023/24	2024/25
Return on capital	6.7	6.6	6.6	6.5	6.4

8.1.3 Return of capital

Chapter 6 describes how Directlink has calculated the return of capital provided by depreciation. The AER's PTRM combines both the straight line depreciation and an adjustment for inflation on the opening RAB. A summary of the regulatory depreciation allowance is given in Table 8-3.

Table 8-3 – Summary of regulatory depreciation ($M, nominal)

	2020/21	2021/22	2022/23	2023/24	2024/25
Forecast straight line depreciation	-7.0	-7.4	-8.0	-8.4	-8.9
Forecast Indexation	3.4	3.5	3.6	3.6	3.6
Forecast Regulatory Depreciation	-3.6	-4.0	-4.4	-4.8	-5.3

8.1.4 Operating expenditure

Table 8-4 sets out Directlink's operating expenditure requirements in each year consistent with chapter 3.

Table 8-4 – Summary of forecast operating expenditure ($M nominal)

	2020/21	2021/22	2022/23	2023/24	2024/25
Forecast Operating Expenditure	5.7	5.9	6.0	6.2	6.3

8.1.5 Tax allowance

The tax allowance is calculated by the AER's PTRM based on the tax asset base outline in section 5.2. The forecast tax allowance is summarised in Table 8-5.

Table 8-5 – Summary of tax allowance 2013-18 ($M nominal)

	2020/21	2021/22	2022/23	2023/24	2024/25
Tax allowance	0.2	0.2	0.1	0.1	0.1

8.2 Maximum Allowable Revenue

The total revenue cap and the MAR for each year of the next transmission determination period is provided below. Based on the building blocks outlined in the previous section, the total revenue cap and maximum allowable unsmoothed revenue requirement is summarised in Table 8-6.

Table 8-6 – Summary of unsmoothed revenue requirement ($M, nominal)

	2020/21	2021/22	2022/23	2023/24	2024/25	Total
Return on capital	6.7	6.6	6.6	6.5	6.4	32.9
Return of capital	3.6	3.9	4.4	4.8	5.3	22.0
plus operating expenditure	5.7	5.9	6.0	6.2	6.3	30.0
plus EBSS	-0.8	-1.5	-0.6	-0.3	0.1	-3.1
plus net tax allowance	0.2	0.2	0.1	0.1	0.1	0.7
Unsmoothed revenue requirement	15.3	15.1	16.5	17.4	18.3	82.5

8.3 X-Factor smoothed revenue

A net present value (NPV) neutral smoothing process is applied to the building block unsmoothed revenue requirement, while ensuring the expected MAR for the last regulatory year is as close as reasonably possible to the annual building block revenue requirement.

Directlink has used the AER's PTRM to derive the X factors.

The associated X factors are presented in Table 8-7.

Table 8-7 – Smoothed revenue requirement and X factor ($M, nominal)

	2020/21	2021/22	2022/23	2023/24	2024/25	Total
Unsmoothed Revenue	15.3	15.1	16.5	17.4	18.3	82.5
Smoothed Revenue	15.3	15.9	16.5	17.1	17.7	82.5
X factors		-1.45%	-1.45%	-1.45%	-1.45%	

8.4 Revenue cap adjustments

In accordance with the Rules,[5] Directlink's revenue cap determination by the AER is in the CPI-X format, and may be subject to adjustment during the next transmission determination period for the following reasons:

- ***Adjustment for actual CPI*** - Directlink's revenue cap will be calculated each year using the actual CPI;
- ***STPIS*** – Directlink's revenue cap will be adjusted by the impact of the STPIS as discussed in section 10.3;
- ***Pass through*** – Directlink's revenue cap may be adjusted in the event that an eligible pass through amount is approved by the AER.

5 AEMC, National Electricity Rules, Chapter 6A.5.3.

9 Pricing methodology and negotiating framework

9.1 Pricing Methodology

9.1.1 *AER's draft determination*

The box below sets out the AER's draft determination

Figure 9-1 – AER's draft determination on Directlink's pricing methodology

> Our draft decision is to accept Directlink's pricing methodology for the 2020–25 regulatory control period, subject to several editorial amendments. This is because it gives effect to the pricing principles in the national electricity rules (NER) and complies with the information requirements set out in the pricing methodology guidelines

9.1.2 *Directlink's revised proposal*

Directlink has made some minor revisions to the Pricing Methodology to address issues raised by the AER.

The Pricing Methodology is attachment 9.1

10 Incentive Schemes

10.1 Efficiency Benefits Sharing Scheme

Directlink accepts the AER's draft determination with regards to the approach to calculating the Efficiency Benefit Sharing Scheme for the next transmission determination period.

Subject to an update of inflation this means that the forecast operating expenditure for the purposes of the next transmission determination period.

Table 10-1 – Operating expenditure forecast for EBSS ($M, real)

	2020/21	2021/22	2022/23	2023/24	2024/25
Operating Expenditure	5.5	5.5	5.5	5.6	5.6
Debt Raising Costs	0.1	0.1	0.1	0.1	0.1
EBSS target	5.6	5.6	5.6	5.6	5.6

10.2 Capital Efficiency Sharing Scheme

10.2.1 Directlink's revised proposal

Directlink accepts the AER's draft determination on the inclusion of a capital efficiency sharing scheme based on version 1.

10.3 Service Target Performance Incentive Scheme

10.3.1 Directlink's revised proposal

Noting that the Service level components will be updated using 2019 data, Directlink accepts the AER's Draft Determination with regards to the Service Target Performance Incentive Scheme.

11 Current performance

11.1 Operational performance[6]

There has been a modest improvement in the operation of Directlink. In 2018 Directlink provided service to the market at 97.6% of dispatch intervals. This is an improvement on previous years.

Directlink operates in a difficult operating environment with rough terrain and high levels of rainfall contributing to outages. All three of Directlink's cable systems travel the same route. An impact on the route is likely to impact on Directlink's total availability.

Further it is difficult to compare Directlink to other networks due to the point to point nature of the network, rather than a meshed network like other Transmission Networks.

Directlink is currently undertaking work to identify the causes of cable failures. The purpose of this analysis is to prevent Directlink's performance from deteriorating. If, as part of this work or other analysis that Directlink is undertaking, it is able to identify cost effective ways of improving availability it will propose those in future transmission determination periods.

11.2 Historic financial performance

This chapter discusses the historic capital and operating performance of Directlink.

11.2.1 Historic Capital Expenditure

Historic capital expenditure is above the AER's allowance contained in the AER's final determination. While there were timing differences in relation to the control and protection system upgrade, the single biggest factor in the higher actual spend was the need to bring forward the expenditure on fibre optics in order to protect insulated gate bi-polar transistors (see section 4.5.1).

Directlink's historic capital expenditure has been updated for the financial year 2019 actuals and is shown in Table 11-1.

[6] Note this is based on Directlink outage data which may differ with AER data for STPIS purposes due to definitional differences of faults..

Table 11-1 – Comparison of AER allowance and actual capital expenditure in revised proposal ($m nominal)

	2015/16	2016/17	2017/18	2018/19	2019/20 (e)	Total
Total net capex allowance	6.9	1.9	2.0	3.1	15.1	29.0
Total net actual capex	3.9	3.3	10.0	6.2	9.5	33.0
Difference	-3.0	1.4	8.0	3.2	-5.6	3.9

The current transmission determination period capital expenditure by asset class is set out in Table 12-3.

11.2.2 Historic Operating Expenditure

The historic Directlink operating expenditure is set out in Table 11-2. A major component of the operating costs has been competitively outsourced and the actual expenditure remains closely comparable to the AER's forecast in 2015.

Table 11-2 – Historic operating expenditure ($m real FY2020)

	2015/16	2016/17	2017/18	2018/19	2019/20(e)	Total
Operating expenditure allowance	4.1	3.4	3.5	3.4	3.4	17.8
Actual operating expenditure	3.5	3.6	4.0	4.3	4.0	19.4
Difference	-0.6	0.2	0.6	0.9	0.6	1.6

11.2.3 Efficiency benefit sharing scheme

The box below sets out the AER's decision on the Efficiency Benefit Sharing Scheme (EBSS) carryover amounts for the next revenue control period based on performance in the current period.

Figure 11-1 – AER's draft determination on the EBBS

Table 8-1 Draft decision on carryover amounts ($million, 2019–20)

	2015–16	2016–17	2017–18	2018–19	2019–20	Total
Directlink's proposal	–0.7	–0.8	–0.3	–	0.3	–1.5
AER draft decision	–0.6	–1.2	–0.4	–	0.1	–2.0

Directlink has updated this calculation for FY 2019 actuals. This is set out in Table 11-3.

Table 11-3 – Revised proposal carryover amounts ($m nominal)

	2015/16	2016/17	2017/18	2018/19	2019/20(e)	Total
Revised Proposal	-0.6	-1.2	-0.4	0.0	0.3	-1.8
Draft Determination	-0.6	-1.2	-0.4	0.0	0.1	-2.0

12 Legal Requirements

Under the National Electricity Rules there are a number of pieces of information required to be provided in a transmission determination proposal for it to be a complying proposal. That information required that isn't set out in previous chapters is contained below.

12.1 Revised Revenue proposal and the NEL

The National Electricity rules state:

> *6A.12.3 Submission of revised proposal, framework or pricing methodology*
>
> *(a) In addition to making such other written submissions as it considers appropriate, the Transmission Network Service Provider may, not more than 45 business days after the publication of the draft decision, submit to the AER:*
>
> *(1) a revised Revenue Proposal;*
>
> *(2) a revised proposed negotiating framework; or*
>
> *(3) a revised proposed pricing methodology.*
>
> *(b) A Transmission Network Service Provider may only make the revisions referred to in paragraph (a) so as to incorporate the substance of any changes required by, or to address matters raised in, the draft decision.*

This revised revenue proposal responds to the AER's draft determination issued on 8 October 2019 and expands on those matters raised by the AER in that draft determination.

The revenue proposal covers the 5 years, from 1 July 2020 to 30 June 2025.

This revised revenue proposal has been developed in accordance with Chapter 6A of the National Electricity Rules (Rules)[7].

During the 2020-25 transmission determination period, Directlink will require the investment program outlined in this revised proposal, to continue to reliably perform its role as an interconnection between the Queensland and New South Wales Regions of the National Electricity Market (NEM).

Directlink transmission interconnector is one of a suite of gas and electricity infrastructure assets owned by Energy Infrastructure Investments Pty Limited

[7] Australian Energy Market Commission, National Electricity Rules Version 45, as at 14 July 2011.

(ABN 95 104 348 852). Those infrastructure assets are managed by an APA Group wholly owned subsidiary, APA Operations (EII) Pty Ltd.

This Revenue Proposal for Directlink is submitted by Directlink Transmission Company Pty Limited (ACN 089 875 080 Level 25, 580 George Street, Sydney) on behalf of Energy Infrastructure Investments.

12.2 Directors' statement

In accordance with the National Electricity Rules, this revised proposal contains a certification of the reasonableness of the key assumptions that underlie the capital and operating expenditure forecast by the Directors of Directlink.

The Directors' responsibility statement is included in Attachment 12.2.

Directlink considers that this revenue proposal achieves the capital expenditure objectives set out in Rule 6A.6.7. Directlink also considers that the forecast of required capital expenditure reasonably reflects the efficient costs that would be incurred by a prudent network operator in meeting the capital expenditure objectives.

12.3 National Transmission Network Development Plan

The AEMO 2018 National Transmission Network Development Plan (NTNDP) for the National Electricity Market makes no reference to Directlink.

12.4 Augmentation capital expenditure

No capital expenditure corresponding to augmentations or for projects that have satisfied the RIT has been included.

12.5 Proposed contingent capital expenditure project

Directlink is not proposing any contingent capital expenditure projects.

12.6 Building block approach

The building block formula to be applied in each year of the transmission determination period is:

MAR = return on capital + return of capital + opex + tax

= (WACC × RAB) + D + opex + tax

Where:

MAR = Maximum Allowable Revenue.

WACC = post-tax nominal weighted average cost of capital ("vanilla" WACC).

RAB = Regulatory Asset Base.

D = Regulatory Depreciation.

opex = operating expenditure.

tax = income tax allowance.

The MAR is then smoothed with an X factor, in accordance with the Rules requirements.[8]

The Rules allow for revenue increments and decrements arising from the Efficiency Benefit Sharing Scheme (EBSS).

Any increment or decrement associated with the Service Target Performance Incentive Scheme (STPIS) is not included in this Revenue Proposal, but as a future revenue cap adjustment.

12.7 Forecast Capital Expenditure

Table 12-1 – Forecast Capital Expenditure by Asset Class ($m 2019/20)

	2015/16	2016/17	2017/18	2018/19	2019/20(e)	Total
Transmission Assets	4.6	6.2	5.4	4.8	3.8	24.8
Transmission Determination	0.0	0.0	0.0	0.1	0.1	0.4
Easements	-	-	-	-	-	-
Land	-	-	-	-	-	-
Buildings	0.2	0.4	-	-	-	0.6
Total	4.9	6.6	5.4	5.0	3.9	25.8

8 AEMC, *National Electricity Rules*, Chapter 6A, clause 6A.6.8.

Table 12-2 – Forecast Capital Expenditure by Driver($m 2019/20)

	2015/16	2016/17	2017/18	2018/19	2019/20(e)	Total
Augmentation/Expansion		-	-	-	-	-
Replacement/Refurbishment	4.8	6.2	5.4	4.8	3.8	25.0
Non-network	0.0	0.0	0.0	0.1	0.1	0.4
Total	4.9	6.6	5.4	5.0	3.9	25.8

All capital expenditure will occur on Directlink and is for the purpose of prescribed transmission services.

The method for developing the capital expenditure forecast is set out in the Directlink Transmission Determination Proposal.

No load growth is assumed in this revised proposal.

Key assumptions that underpin the capital expenditure forecast are set out in the Transmission Determination proposal and section 4 of this document.

Forecast capital expenditure is lower than historic capital expenditure because it is based on different projects.

Forecast capital expenditure is replacement in nature and does not open itself to non-network options.

The capitalisation policy was provided as part of the Directlink Transmission Determination proposal. The treatment of Transmission Determination costs is expanded on in section 4.6.1.

12.8 Historic Capital Expenditure

Table 12-3 – Historic Capital expenditure by Asset Class ($m nominal)

	2015/16	2016/17	2017/18	2018/19	2019/20 (e)	Total
Converter Stations	3.9	2.9	9.3	5.7	9.3	31.2
Transmission lines	0.1	0.4	0.7	0.5	0.1	1.8
Easements	-	-	-	-	-	-
Total	3.9	3.3	10.0	6.2	9.5	33.0

Table 12-4 – Historic Capital expenditure by driver ($m nominal)

	2015/16	2016/17	2017/18	2018/19	2019/20 (e)	Total
Augmentation/Expansion	-	-	-	-	-	-
Replacement/Refurbishment	3.9	3.3	10.0	6.0	9.3	32.6
Non-network	-	-	-	0.2	0.1	0.4
Total	3.9	3.3	10.0	6.2	9.5	33.0

12.9 Forecast operating expenditure

Table 12-5 – Forecast operating expenditure by type ($m nominal)

	2020/21	2021/22	2022/23	2023/24	2024/25	Total
Operating and maintenance expenses	3.6	3.7	3.8	3.9	4.0	19.2
Management fees and expenses	0.5	0.5	0.5	0.5	0.5	2.4
Insurance	0.5	0.6	0.6	0.6	0.6	3.0
Tax on property and capital	0.0	0.0	0.0	0.0	0.0	0.0
Accounting/audit fees	0.0	0.0	0.0	0.0	0.0	0.1
Other	0.0	0.0	0.0	0.0	0.0	0.2
End of life costs	1.0	1.0	1.0	1.0	1.0	4.9
Total operating expenditure	5.6	5.8	6.0	6.1	6.3	29.7

Forecast operating expenditure applies to prescribed transmission services.

The methodology, key variables and reasons for difference from historic operating expenditure for the forecast operating expenditure are set out in Directlink's Transmission Determination Proposal and section 3 of this document.

Directlink has not identified any operating expenditure to improve the performance of the network.

Forecast operating expenditure is designed to maintain the operation of Directlink and are not suitable to non network options.

The forecast operating and capital programs take into account the work being undertaken in each area.

12.10 Small Scale Incentive Scheme

No small scale incentive scheme applies to Directlink and it is not proposing one.

12.11 Depreciation

Table 12-6 – Depreciation by driver ($m nominal)

	2020/21	2021/22	2022/23	2023/24	2024/25	Total
Augmentation/Expansion	-	-	-	-	-	-
Replacement/Refurbishment	6.8	7.1	7.4	7.6	7.9	36.8
Non-network	-	0.0	0.0	0.0	0.0	0.1
Total	6.8	7.1	7.4	7.7	7.9	36.9

The amounts, values and other inputs used to calculate Depreciation are set out in the Roll forward model and PTRM that accompany this revised proposal.