



FINAL DECISION

Directlink

Transmission Determination

2020 to 2025

Attachment 5

Capital expenditure

June 2020

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Inquiries about this publication should be addressed to:

Australian Energy Regulator
GPO Box 520
Melbourne Vic 3001

Tel: 1300 585 165

Email: AERInquiry@aer.gov.au

AER reference: 62730

Note

This attachment forms part of the AER's final decision on Directlink's 2020–25 transmission determination. It should be read with all other parts of the final decision.

The final decision includes the following attachments:

Overview

Directlink transmission determination 2020–25

Attachment 1 – Maximum allowed revenue

Attachment 2 – Regulatory asset base

Attachment 4 – Regulatory depreciation

Attachment 5 – Capital expenditure

Attachment 6 – Operating expenditure

Attachment 7 – Corporate income tax

Attachment A – Pricing methodology

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5 Capital expenditure

Capital expenditure (capex) refers to the investment made in the transmission network to provide prescribed transmission services. This investment mostly relates to assets with long lives (30-50 years is typical) and these costs are recovered over several regulatory periods.

On an annual basis, the financing and depreciation costs associated with these assets are recovered (return of and on capital) as part of the building blocks that form Directlink's total revenue requirement.¹

This attachment sets out our final decision on Directlink's transmission capex forecast. Our final decision is based on our analysis of Directlink's revised proposal, information we have received from Directlink as well as submissions we have received regarding Directlink's proposal and our draft decision.

5.1 Final decision

We are satisfied that Directlink's total capex forecast of \$25.8 million (\$2019–20) reasonably reflects the capex criteria set out in the NER.² In modelling this final decision, we have updated the estimate of forecast inflation used by Directlink in its capex model for the 2020–25 regulatory control period.³ This results in a total capex forecast of \$25.7 million (\$2019–20), which we consider reasonably reflects the capex criteria set out in the NER. Table 5.1 outlines our final decision.

Table 5.1 Final decision on Directlink's total forecast transmission capex (\$million 2019–20)

	2020–21	2021–22	2022–23	2023–24	2024–25	Total
Directlink's revised proposal	4.9	6.6	5.4	5.0	3.9	25.8
AER final decision	4.9	6.6	5.4	5.0	3.9	25.7

Source: AER analysis.

Note: Numbers may not add up due to rounding.

Table 5.2 summarises our findings and the reasons for our final decision. Our decision relates to Directlink's total forecast capex for the 2020–2025 regulatory control period. We do not approve a particular category of capex or specific projects, but rather an overall amount. However, as part of our assessment, we necessarily review categories of expenditure and particular projects in order to test whether Directlink's proposed total forecast capex reasonably reflects the capex criteria.

¹ NER, cl. 6A.5.4(a).

² NER, cl. 6A.6.7(c).

³ Using the trimmed mean inflation forecasts from the RBA's Statement on Monetary Policy of 8 May 2020, consistent with other elements of this determination where our estimate of expected inflation is applied.

Table 5.2 Summary of AER reasons and findings

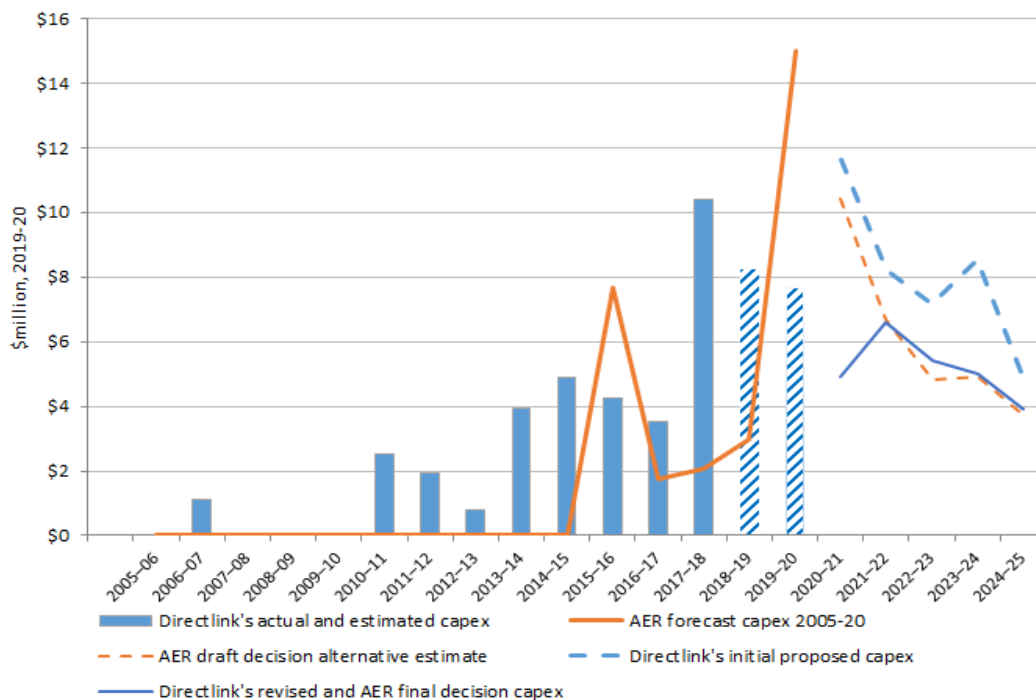
Issue	Reasons and findings
Total capex forecast	<p>Directlink proposed a total capex forecast of \$25.8 million (\$2019-20) in its revised proposal. Directlink has justified that this forecast reasonably reflects the capex criteria.</p> <p>The reasons for this decision are summarised in this table and detailed in section 5.2.</p>
Forecasting methodology, key assumptions and past capex performance	<p>Directlink's capex forecast is based on maintaining the maximum capability of the link with a high degree of reliability whilst ensuring that regulatory, statutory and legislative requirements are met. Directlink submitted business cases for most projects that support its capex program. We consider that Directlink's capex program is prudent and justified with respect to the need to maintain reliability and meet regulatory obligations.</p> <p>Directlink's capex business cases provide details in respect of the need for each project, evaluation of alternatives, estimated cost and scope, timing and justification. We consider this approach acceptable given the smaller scale of Directlink's assets and nature of its network operations. We have undertaken detailed reviews of Directlink's asset management practices and specific capex projects.</p> <p>Directlink's revised proposed forecast capex is 16 per cent (\$4.8 million) lower than our draft decision capex and 36 per cent lower (\$14.7 million) than Directlink's initial proposed capex. Directlink's revised proposed forecast capex is also 24 per cent (\$8.3 million) lower than the 2015–20 regulatory control period. Much of Directlink's proposed capex program reflects the variable nature of Directlink's capex requirements as a single asset (as opposed to larger TNSPs with more evenly spread recurrent capex on a broader portfolio of assets). A significant part of the forecast (\$15.6 million or 60 per cent) is for replacement of obsolete Insulated Gate Bi-polar Transistors (IGBTs).</p>
Forecast capex	<p>Based on the information before us we accept Directlink's proposed forecast capex. In modelling this final decision, we have updated the inflation forecast used by Directlink in its capex model. This adjustment results in a forecast net capex amount of \$25.7 million (\$2019-20) and consider that this forecast amount is required to achieve the capex criteria and objective.</p> <p>Directlink accepted our draft decision on a number of projects including the Rail Trail and the installation of a Variable Speed Drive. Directlink also changed the timing of when a number of projects will be undertaken. These projects included the replacement of fibre optic cables, refurbishment and replacement of equipment and the insulated gate bipolar transistors asset replacement contract. Directlink modified the scope and related capex for the cable modification and noise monitoring equipment projects. Directlink amended its revised proposal opex to include an allowance for end of life costs (restoration and rectification) which had been included in Directlink's initial revenue proposal as capex.</p> <p>Consistent with our draft decision, we consider that \$0.4 million in capex that Directlink had proposed for the stakeholder component of its regulatory reset expenditure is likely to be in the nature of opex rather than capex from a regulatory perspective. Nonetheless, inclusion of this component in Directlink's capex forecast does not materially affect Directlink's total forecast capex, which overall we consider is likely to reasonably reflect the capex criteria.</p> <p>We consider Directlink's estimate of required capex in the 2020–25 regulatory control period is sufficient to maintain the reliability and availability of Directlink.</p>
Real cost escalation	<p>Directlink did not propose any real cost escalation to capital expenditure beyond adjustments for consumer price inflation. Directlink did not propose any step changes in input costs for capital expenditure.</p>

Source: AER analysis.

5.2 Directlink's revised proposal

In its revised proposal, Directlink proposed total forecast capex of \$25.8 million (\$2019–20) for the 2020–25 regulatory control period.⁴ The proposed capex is \$8.3 million (or 24 per cent) lower than the actual/estimated capex over the 2015–20 regulatory control period.⁵ Figure 5.1 outlines Directlink's historical capex trend, its revised proposed forecast for the 2020–25 regulatory control period, and our draft decision.

Figure 5.1 Directlink's historical vs forecast capex (\$2019–20, million)



Source: Directlink, *Revised revenue proposal 2020–25*, 10 December 2019, p. 12; AER analysis.

Directlink submitted that it is a single asset with stochastic capital expenditure requirements rather than a mature "steady state" system with recurrent capital expenditure programs. Therefore, Directlink is likely to experience significant year-to-year variations in capex. Directlink also considered this explains any significant variations in its forecast capital expenditure from historical capital expenditure.⁶ Directlink expects that long term capital expenditure will fall in future periods.⁷

⁴ Directlink, *Revised revenue proposal 2020–25*, 10 December 2019, p. 12.

⁵ Directlink, *Revised revenue proposal 2020–25*, 10 December 2019, p. 12 and AER analysis.

⁶ Directlink, *Revenue proposal 2020–25*, 31 January 2019, p. 53.

⁷ Directlink, *Revised revenue proposal 2020–25*, 10 December 2019, p. 13.

Directlink's proposed replacement of obsolete IGBTs makes up 60 per cent or \$15.6 million of its capex program. The next most material project proposed by Directlink was optic fibres replacement capex of \$2.3 million.

Directlink did not propose any real cost escalation to capex beyond adjustments for inflation in its revised proposal. This is consistent with our recent decisions for NSPs where we have allowed zero real cost escalation for materials costs for forecast capex.

Projects considered in the AER's draft decision that Directlink accepted

Our draft decision excluded a number of proposed projects from our substitute estimate of total capex because we were not satisfied that they reasonably reflected the capex criteria. In its revised proposal, Directlink accepted our draft decision for two of these projects:⁸

- \$4.0 million to underground part of its cables in response to the proposed Northern Rivers Rail Trail construction activity and operation; and
- \$3.1 million to replace the phase reactors with the installation of a Variable Speed Drive on the cooling fans.

Rail Trail

Directlink included in its initial proposal an amount of forecast capital expenditure associated with safety measures related to the creation of the Northern Rivers Rail Trail. Directlink submitted that this was a high level estimate based on the preliminary nature of the consideration of the Rail Trail at the time of the proposal.⁹

In its revised proposal, Directlink submitted that 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.¹⁰

It was Directlink's expectation that in the 10 months between submission of its initial and revised proposals that the necessary preconditions would be met and the Tweed Shire Council would be in a position to provide designs for the Rail Trail. Directlink submitted, however, that this has not been the case. Consequently, Directlink accepted our draft decision that this project is not sufficiently certain to satisfy the requirements of the NER. Directlink therefore removed the expenditure associated with this project from its revised proposal.¹¹

⁸ Directlink, *Revised revenue proposal 2020–25*, 10 December 2019, pp. 13–14.

⁹ Directlink, *Revised revenue proposal 2020–25*, 10 December 2019, p. 13.

¹⁰ Directlink, *Revised revenue proposal 2020–25*, 10 December 2019, p. 13.

¹¹ Directlink, *Revised revenue proposal 2020–25*, 10 December 2019, p. 13.

Variable Speed Drives

Our draft decision did not include a proposed project to install variable speed drives, as we were not satisfied that information Directlink provided in its proposal and subsequent information requests justified this project. Directlink's revised proposal did not provide additional information to that submitted in its initial proposal. Directlink has removed this project, and associated expenditure, from its proposed capex program.¹²

Changes in project timing

In its revised proposal, Directlink proposed changes to the timing of a number of projects included in our draft decision.

Insulated Gate Bipolar Transistors (IGBT)

Directlink postponed the commencement date for the IGBT Asset Replacement Contract until 1 January 2021. Directlink considered this should provide sufficient time to undertake the RIT-T and negotiate, if necessary, the terms of the contract with ABB prior to commencement. Directlink submitted that this expenditure serves the same purpose as outlined in its original proposal and is consistent with the obligations of the NER.¹³

Whilst Directlink acknowledged this is a delay to the proposed commencement date, and increases the risk that it may have to shut down a system due to the loss of IGBTs, Directlink considered it is the most realistic timeline given resource constraints and the obligations of the replacement capex RIT-T. Directlink's forecast capital expenditure in the revised proposal recognises this six month delay in the commencement of the contract with ABB. There is a forecast saving in the 2020–25 regulatory control period of \$1.7 million from this delay.¹⁴

Fibre Optic Cables

Directlink submitted that the consequences of ABB not manufacturing new Generation One IGBTs from October 2018 were still being analysed at the time of the initial proposal. This made the preservation of the existing IGBTs a much higher priority. Directlink submitted that 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 at a lower material cost of \$2.3 million compared to the \$3.6 million forecast in its initial proposal.¹⁵

¹² Directlink, *Revised revenue proposal 2020–25*, 10 December 2019, p. 14.

¹³ Directlink, *Revised revenue proposal 2020–25*, 10 December 2019, p. 16.

¹⁴ Directlink, *Revised revenue proposal 2020–25*, 10 December 2019, p. 16.

¹⁵ Directlink, *Revised revenue proposal 2020–25*, 10 December 2019, p. 14.

Refurbishment/Replacement Capital expenditure

Directlink has proposed a project to replace or overhaul a number of cooling related components such as motors and pumps at a forecast cost of \$1 million.¹⁶

Changes to Directlink projects

In its revised proposal, Directlink proposed a number of changes to projects we considered in our draft decision.

Cable Modification project

In its initial proposal, Directlink included a project that it had commenced to identify the cause of increasingly significant failures on its transmission cables. Work at the time of the proposal 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.¹⁷

Since our draft determination, Directlink's technical consultant has identified the problem and put forward a potential solution. The purpose of the proposed solution is to "smooth" the temperature changes in the cables operating environment over a greater distance at the transition. Directlink has identified over 70 transitions that will be subject to the changes. Directlink's revised proposal included \$1.1 million for this project, approximately \$1 million less than the capex proposed in Directlink's initial proposal.¹⁸

Revenue proposal capital expenditure

Directlink submitted in its revised proposal that transmission determination expenditure represents costs related to 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. Directlink considers that such expenditure is solely focused on the earning of future revenue for a regulated business. Directlink submitted that advice from PwC was that assessed against the relevant accounting standard *AASB 138 Intangible assets*, the expenditure is capital in nature. Directlink has forecast capex of \$0.4 million for transmission determination capital expenditure in its revised proposal.¹⁹

Noise Monitoring Equipment

In our draft decision, we did not accept Directlink's proposed noise monitoring equipment capex as we considered there was insufficient evidence that the operation

¹⁶ Directlink, *Revised revenue proposal 2020–25*, 10 December 2019, p. 14.

¹⁷ Directlink, *Revised revenue proposal 2020–25*, 10 December 2019, p. 19.

¹⁸ Directlink, *Revised revenue proposal 2020–25*, 10 December 2019, pp. 19–20.

¹⁹ Directlink, *Revised revenue proposal 2020–25*, 10 December 2019, pp. 16–18.

of the Mullumbimby converter station breached the noise limits of the relevant NSW environmental legislation.²⁰

In its revised proposal, Directlink submitted that whilst it can be confident that it is not consistently producing noise levels that could be illegal, it could not address whether it is intermittently producing noise levels in excess of legal obligations. Directlink submitted that the noise complaint noted that the excessive noise was intermittent. Directlink considered that given its exposure to penalties under the relevant legislation it is prudent to invest in equipment that monitors noise levels so that it can assess whether it has a problem, and if so, take remedial action.²¹

In its revised proposal, Directlink submitted that 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. Directlink considers that doing nothing and being found in breach of environmental obligations is not a prudent, or acceptable, outcome for any business. Directlink submitted that recognising the feedback from the AER, it has scaled back its proposed project considerably and proposed a capex of \$0.2 million for noise monitoring equipment.

5.3 AER's assessment approach

We did not change our assessment approach for capex from our draft decision. Attachment 5 (section 5.3) of our draft decision details that approach.²²

5.4 Reasons for final decision

Based on our assessment of the information available, we are satisfied that Directlink's total capex forecast reasonably reflects the capex criteria. Our reasons are discussed below.

5.4.1 Past capex performance

We consider there is limited benefit in comparing Directlink's capex performance with other NSPs as there are no equivalent electricity network assets to provide meaningful comparisons given the nature and small scale of Directlink's operations. We also consider that there is limited benefit in reviewing Directlink's capex on a trend basis over a number of previous periods. There was no allowance for capital expenditure approved for Directlink for the 2006–15 regulatory control period.²³

²⁰ AER, *Draft Decision - Directlink transmission determination 2020 to 2025 – Attachment 5 Capital expenditure*, October 2019, p. 23.

²¹ Directlink, *Revised revenue proposal 2020–25*, 10 December 2019, p. 21.

²² AER, *Directlink 2020–2025, Draft decision – Attachment 5 – Capital expenditure*, October 2019, pp. 9–12.

²³ AER, *Directlink Joint Venturers' Application for Conversion and Revenue Cap Decision*, 3 March 2006, p. v.

One of the capex factors that we are required to have regard is the electricity network provider's actual and expected capex in previous regulatory control periods.²⁴ Directlink's capex proposal in this context appears reasonable when compared with longer-term average historical levels of capex (see Figure 5.1). However, we also consider that Directlink's historical levels of capex may not be a good guide to future investment requirements due to the variable nature of expenditure for a single asset (as opposed to larger TNSPs with more evenly spread recurrent capex relating to a broader portfolio of assets).

5.4.2 Assessment of proposed capital expenditure

Based on our review of Directlink's asset management practices, as well as an economic and technical review of the capex projects proposed by Directlink, we consider that total forecast capex of \$25.7 million (\$2019–20) in the 2020–25 regulatory control period reasonably reflects the capex criteria. This is consistent with Directlink's revised capex forecast. We consider that a total capex allowance of \$25.7 million provides Directlink with a reasonable opportunity to recover at least the efficient costs it incurs in providing direct control network services.²⁵

Our reasons for this decision are set out below.

5.4.2.1 Projects consistent with our draft decision

Directlink accepted our draft decision on forecast capex associated with safety measures related to the creation of the Northern Rivers Rail Trail (reduction of \$4.0 million) and the installation of variable speed drives (reduction of \$2.8 million).

5.4.2.2 Changes in project timing

Directlink changed the timing of the following projects included in our draft decision.

Insulated Gate Bipolar Transistors (IGBT)

We consider that Directlink's proposed postponement of the commencement date for the IGBT Asset Replacement Contract until January 2021 is reasonable. We accept that the six month postponement should provide sufficient time to undertake the RIT-T and negotiate, if necessary, the terms of the contract with ABB. We accept the amended \$15.6 million capex forecast for this project, for the same reasons as set out in our draft decision.²⁶

²⁴ Consistent with NER, cl. 6A.6.7(e)(5).

²⁵ NEL, s. 7A(2).

²⁶ AER, *Draft Decision - Directlink transmission determination 2020 to 2025 – Attachment 5 Capital expenditure*, October 2019, pp. 24–25.

Fibre Optic Cables

We consider it prudent that Directlink prioritise the replacement of fibre optic cables to preserve the remaining Generation One IGBTs given their obsolescence. We accept that the acceleration of the replacement program will bring forward expenditure to the current regulatory control period, and reduce the cost of the program to \$2.3 million for the 2020–25 regulatory control period.

Refurbishment/Replacement Capital expenditure

We consider that Directlink’s proposed project to replace or overhaul a number of cooling related components such as motors and pumps at a forecast cost of \$1 million is prudent and efficient. Directlink’s decision to refurbish or replace cooling related components is based on analysis of the cost of the alternative approaches and the relative life expectancies. We consider this cost benefit approach to be reasonable.

5.4.2.3 Changes to Directlink projects

In its revised proposal, Directlink proposed changes to a number of projects we considered in our draft decision.

Cable Modification project

In our draft decision, we accepted that it would be prudent for Directlink to be provided with sufficient funds to support a cable modification program to address increasing failures on its transmission cables, and noted that we would reassess the cable modification program in our final decision when Directlink had further refined the scope and cost of the program.²⁷

Following further advice from its consultant, Directlink has now identified a potential solution for its transmission cable failures. The cost of this solution is \$1.1 million, a reduction from \$2.1 million in Directlink’s initial proposal that did not identify a specific solution.

We consider that since our draft decision Directlink’s consultant has been able to effectively identify the cause of increasingly significant failures on Directlink’s transmission cables. We consider that the potential solution put forward by the consultant is appropriate to address the identified technical issues and we therefore consider the reduced capex proposal of \$1.1 million for this project is likely to be prudent and efficient.

Noise Monitoring Equipment

Directlink revised its proposed capex for noise monitoring equipment, which we did not accept in the draft decision, from \$0.5 million to \$0.2 million. Whilst we consider that

²⁷ AER, *Draft Decision - Directlink transmission determination 2020 to 2025 – Attachment 5 Capital expenditure*, October 2019, p. 29.

the operation of the Mullumbimby converter station is unlikely to breach the noise limits of the relevant NSW environmental legislation, we acknowledge that there may be circumstances where this may occur.

Directlink's lower cost alternative to installing noise recording equipment is to have a noise monitoring expert assess performance in multiple operating scenarios with different pieces of Directlink's equipment operating. We consider such a solution is likely to be prudent and efficient, given the reduction in costs in comparison to Directlink's initial proposal for this project.

Revenue proposal capital expenditure

Directlink submitted that certain costs associated with developing its regulatory proposal are capital in nature. Directlink supported this position with advice provided by PwC assessing the nature of the expenditure against accounting standard *AASB 138 Intangible assets*.²⁸

Consistent with our draft decision, we remain of the view that costs associated with Directlink's regulatory reset are likely to have the characteristics of operating expenditure. We acknowledge PwC's assessment of the nature of this expenditure for accounting purposes under accounting standard *AASB 138 Intangible assets*, though we note that categories of expenditure may be subject to different treatment in a regulatory versus accounting context.

As we previously stated, we do not approve a particular category of capex or specific projects, but rather an overall amount. Excluding the proposed capex for regulatory costs from Directlink's forecast would result in an alternative estimate of total forecast capex of \$25.4 million. This is not materially different to Directlink's revised capex proposal of \$25.8 million (or \$25.7 million (\$2019-20) reflecting our update to the inflation forecast applied by Directlink in its capex model). We are therefore satisfied that Directlink's total capex forecast reasonably reflects the capex criteria set out in the NER.

²⁸ PriceWaterhouseCoopers, *Accounting advice in relation to costs incurred for regulatory approval*, 16 December 2019.

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
augex	augmentation expenditure
capex	capital expenditure
CESS	capital expenditure sharing scheme
CPI	consumer price index
EBSS	efficiency benefit sharing scheme
F&A	framework and approach
MAR	maximum allowed revenue
NEL	national electricity law
NEM	national electricity market
NEO	national electricity objective
NER	national electricity rules
NSP	network service provider
opex	operating expenditure
PTRM	post-tax revenue model
RAB	regulatory asset base
repex	replacement expenditure
RFM	roll forward model
RPP	revenue and pricing principles
STPIS	service target performance incentive scheme
TNSP	transmission network service provider
WACC	weighted average cost of capital