



Draft decision

Directlink transmission determination

2015-16 to 2019-20

Attachment 2: Regulatory asset base

November 2014

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Note

This attachment forms part of the AER's draft decision on Directlink's revenue proposal 2015–20. It should be read with other parts of the draft decision.

The draft decision includes the following documents:

Overview

Attachment 1 – maximum allowed revenue

Attachment 2 – regulatory asset base

Attachment 3 – rate of return

Attachment 4 – value of imputation credits

Attachment 5 – regulatory depreciation

Attachment 6 – capital expenditure

Attachment 7 – operating expenditure

Attachment 8 – corporate income tax

Attachment 9 – efficiency benefit sharing scheme

Attachment 10 – capital expenditure sharing scheme

Attachment 11 – service target performance incentive scheme

Attachment 12 – pricing methodology and negotiated services

Attachment 13 – pass through events

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Shortened forms

Shortened form	Extended form
AARR	aggregate annual revenue requirement
AEMC	Australian Energy Market Commission
AEMO	Australian Energy Market Operator
AER	Australian Energy Regulator
ASRR	aggregate service revenue requirement
augex	augmentation expenditure
capex	capital expenditure
CCP	Consumer Challenge Panel
CESS	capital expenditure sharing scheme
CPI	consumer price index
DRP	debt risk premium
EBSS	efficiency benefit sharing scheme
ERP	equity risk premium
MAR	maximum allowed revenue
MRP	market risk premium
NEL	national electricity law
NEM	national electricity market
NEO	national electricity objective
NER	national electricity rules
NSP	network service provider
NTSC	negotiated transmission service criteria

Shortened form	Extended form
opex	operating expenditure
PPI	partial performance indicators
PTRM	post-tax revenue model
RAB	regulatory asset base
RBA	Reserve Bank of Australia
repex	replacement expenditure
RFM	roll forward model
RIN	regulatory information notice
RPP	revenue pricing principles
SLCAPM	Sharpe-Lintner capital asset pricing model
STPIS	service target performance incentive scheme
TNSP	transmission network service provider
TUoS	transmission use of system
WACC	weighted average cost of capital

2 Regulatory asset base

The regulatory asset base (RAB) is the value of assets used by Directlink to provide prescribed transmission services.¹ The AER's revenue determination is to specify the RAB as at the commencement of the regulatory control period and the appropriate method for the indexation of the RAB.² The indexation of the RAB is one of the building blocks that form the annual building block revenue requirement for each year of the 2015–20 regulatory control period.³ We set the RAB as the foundation for determining a TNSP's revenue requirements, and use the opening RAB for each regulatory year to determine the return on capital and return of capital (regulatory depreciation) building block allowances.⁴

This attachment presents our draft decision on the opening RAB value as at 1 July 2015 for Directlink. It also presents our forecast RAB values for Directlink over the 2015–20 regulatory control period.

2.1 Draft decision

We do not accept Directlink's proposed opening RAB value of \$129.8 million as at 1 July 2015.⁵ We have instead determined an opening RAB value of \$129.6 million as at 1 July 2015 for Directlink. This is because we have corrected the 'allowed WACC' and 'forecast inflation rate' inputs in the proposed Roll Forward Model (RFM). These amendments reduced Directlink's proposed opening RAB as at 1 July 2015 by about \$0.2 million (or 0.1 per cent).⁶

We determine a forecast closing RAB value at 30 June 2020 of \$147.9 million (\$ nominal). This is \$10.1 million (or 6.4 per cent) lower than the amount of \$158.0 million (\$ nominal) proposed by Directlink. Our draft decision on the forecast closing RAB reflects the amended opening RAB as at 1 July 2015, and our draft decision on forecast capex (attachment 6) and forecast regulatory depreciation (attachment 5).

We determine that the forecast depreciation approach is to be used to establish the RAB at the commencement of the regulatory control period from 1 July 2020 for Directlink.⁷ We consider this approach will provide sufficient incentives for Directlink to achieve capex efficiency gains over the 2015–20 regulatory control period. Directlink is not currently subject to a capital expenditure sharing scheme (CESS) but we will apply the CESS to Directlink's 2015–20 regulatory control period.

Table 2-1 and Table 2-2 set out our draft decision on the roll forward of the RAB values for Directlink's 2005–15 regulatory control period and forecast RAB values for Directlink's 2015–20 regulatory control period, respectively.

¹ NER, cl. 6A.6.1.

² NER, cl. 6A.4.2(3A) and (4).

³ NER, cl. 6A.5.4(a)(1) and (b)(1).

⁴ NER, cl. 6A.5.4(a)(2) and (3).

⁵ This RAB value is based on as-incurred capex.

⁶ At the time of the draft decision, the capex for 2013–14 and 2014–15 are estimated values. We will update the RAB roll forward for 2013–14 actual capex and revised 2013–14 estimated capex at the time of the final decision.

⁷ NER, clause S6A.2.2B(a).

Table 2-1 AER's draft decision on Directlink's RAB for the 2005–15 regulatory control period (\$ million, nominal)

	2005–06	2006–07	2007–08	2008–09	2009–10	2010–11	2011–12	2012–13	2013–14 ^a	2014–15 ^b
Opening RAB	116.7	119.1	119.7	121.5	121.1	121.1	123.7	123.7	123.7	127.3
Capital expenditure ^c	2.1	0.8	–	–	–	2.2	1.7	0.7	3.8	3.1
CPI indexation on opening RAB	3.5	2.9	5.1	3.0	3.5	4.0	2.0	3.1	3.6	3.2
Straight-line depreciation ^d	–3.1	–3.2	–3.3	–3.4	–3.5	–3.6	–3.7	–3.8	–3.9	–4.0
Closing RAB	119.1	119.7	121.5	121.1	121.1	123.7	123.7	123.7	127.3	129.6
Opening RAB as at 1 July 2015										129.6

Source: AER analysis.

(a) Based on estimated capex. We will update the RAB roll forward for actual capex for the final decision.

(b) Based on estimated capex and forecast inflation. We will update the RAB roll forward for actual CPI and may update for a revised estimate of capex at the time of the final decision. However, we will update for actual capex at the next reset.

(c) As incurred, net of disposals, and adjusted for actual CPI.

(d) Based on forecast depreciation and adjusted for actual CPI.

Table 2-2 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	129.6	132.4	133.4	133.8	135.1
Capital expenditure ^a	4.4	2.9	2.5	3.7	15.3
Inflation indexation on opening RAB	3.3	3.4	3.4	3.4	3.4
Straight-line depreciation	–4.9	–5.2	–5.5	–5.7	–6.0
Closing RAB	132.4	133.4	133.8	135.1	147.9

Source: AER analysis.

(a) As incurred, and net of disposals. In accordance with the timing assumptions of the post-tax revenue model (PTRM), the capex includes a half-WACC allowance to compensate for the six month period before capex is added to the RAB for revenue modelling.

2.2 Directlink's proposal

Directlink used the AER's roll forward model (RFM) to establish its proposed opening RAB value of \$129.8 million (\$ nominal) as at 1 July 2015.⁸ It proposed a closing RAB of \$158.0 million (\$ nominal) at 30 June 2020, which reflects its proposed forecast capex, inflation and depreciation over the 2015–20 regulatory control period.⁹ Table 2-3 and Table 2-4 present Directlink's proposed roll forward of the RAB during the 2005–15 regulatory control period and the 2015–20 regulatory control period, respectively. The RAB roll forward for the 2005–15 regulatory control period uses depreciation based

⁸ This RAB value is based on as-incurred capex.

⁹ Directlink, *Revenue proposal*, pp.33–34 and 83.

on the allowance in the 2006 revenue cap decision.¹⁰ The projected RAB roll forward for the 2015–20 regulatory control period uses depreciation based on forecast capex. Directlink proposed that depreciation for establishing the RAB as at the commencement of 1 July 2020 at the next reset be based on forecast capex.

Table 2-3 Directlink's proposed RAB for the 2005–15 regulatory control period (\$ million, nominal)

	2005–06	2006–07	2007–08	2008–09	2009–10	2010–11	2011–12	2012–13	2013–14	2014–15
Opening RAB	116.7	119.2	119.7	121.5	121.1	121.1	123.8	123.7	123.8	127.4
Capital expenditure ^a	2.1	0.9	0.0	0.0	0.0	2.2	1.7	0.7	3.9 ^c	3.2 ^c
CPI indexation on opening RAB	3.5	2.9	5.1	3.0	3.5	4.0	2.0	3.1	3.6	3.2
Straight-line depreciation ^b	–3.1	–3.2	–3.3	–3.4	–3.5	–3.6	–3.7	–3.8	–3.9	–4.0
Closing RAB	119.2	119.7	121.5	121.1	121.1	123.8	123.7	123.8	127.4	129.8
Opening RAB as at 1 July 2015										129.8

Source: Directlink, *Roll forward model*, May 2014.

- (a) As incurred, net of disposals, and adjusted for actual CPI.
- (b) Based on forecast depreciation and adjusted for actual CPI.
- (c) Based on estimated capex.

Table 2-4 Directlink's proposed RAB for the 2015–20 regulatory control period (\$ million, nominal)

	2015–16	2016–17	2017–18	2018–19	2019–20
Opening RAB	129.8	134.2	138.1	140.3	143.6
Capital expenditure ^a	6.2	5.8	4.5	5.8	17.2
Inflation indexation on opening RAB	3.2	3.4	3.5	3.5	3.6
Straight-line depreciation	–4.9	–5.3	–5.7	–6.0	–6.4
Closing RAB	134.2	138.1	140.3	143.6	158.0

Source: Directlink, *Post-tax revenue model*, May 2014.

- (a) As incurred, and net of disposals.

2.3 AER's assessment approach

In order to determine the RAB value for a regulatory control period, the opening value of the RAB in the previous period is adjusted by various amounts to calculate the opening RAB for the following period.¹¹ The RAB value must be adjusted for differences in the forecast and actual capex and

¹⁰ AER, *Decision – Directlink Joint Venturers' application for conversion and revenue cap*, 3 March 2006, p. 31.

¹¹ NER, cl. S6A.2.1(f).

disposals.¹² It may be adjusted to also reflect any changes in the use of the assets, because the RAB must include only assets used to provide prescribed transmission services.¹³

To determine the opening RAB for a transmission determination, we developed an asset base RFM in accordance with the requirements of the National Electricity Rules (NER).¹⁴ A TNSP must use our RFM in preparing its revenue proposal. The RFM rolls forward the TNSP's RAB from the beginning of the final year of the previous regulatory control period, through the current regulatory control period, to the beginning of the next regulatory control period. The roll forward occurs for each regulatory year by:

- Adding an inflation (indexation) adjustment for the relevant year. This adjustment must be consistent with the inflation factor used in the annual indexation of the maximum allowed revenue (MAR).¹⁵
- Adding actual or estimated capex for the relevant year.¹⁶ The NER allows us to review a TNSP's past capex and exclude inefficient past capex from being rolled into the RAB.¹⁷ We note that under the transitional rules, the review of past capex does not apply to Directlink's current regulatory control period (with the exception of 2014–15).¹⁸ Therefore, for the purposes of this draft decision, we will add Directlink's actual or estimated capex in the current regulatory control period to the RAB. We check actual capex amounts against the TNSP's audited regulatory accounts data. We will update any estimated capex with actual capex at the time of the next reset.
- Subtracting depreciation for the relevant year, calculated in accordance with the rates and methodologies allowed (if any) in the transmission determination for the TNSP's current regulatory control period.¹⁹ Depreciation based on forecast or actual capex can be used to roll forward the RAB.²⁰ By default the RFM applies the depreciation approach based on actual capex, although this can be modified to apply a depreciation approach based on forecast if necessary. For this determination, we use depreciation based on forecast capex for rolling forward the RAB for Directlink's current regulatory control period.²¹
- Subtracting any disposals for the relevant year, by way of netting from capex to be added to the RAB.²² We check these amounts against audited regulatory accounts data.

These annual adjustments give the closing RAB for a particular regulatory year, which then becomes the opening RAB for the subsequent regulatory year. Through this process, the RFM rolls forward the RAB to the end of the current regulatory control period. The post-tax revenue model (PTRM) for the next regulatory control period generally adopts the same roll forward approach for establishing the

¹² NER, cl. S6A(2.1(f)(3) and (6).

¹³ NER, cl. S6A.2.1(f)(8) and S6A.2.3.

¹⁴ NER, cl. 6A.6.1(b) and (e).

¹⁵ NER, cl. 6A.6.1(e)(3).

¹⁶ NER, cl. S6A.2.1(f)(4).

¹⁷ NER, S6A.2.2A.

¹⁸ NER, cl. 11.58.5 and 11.63.

¹⁹ NER, cl. S6A.2.1(f)(5).

²⁰ NER, cl. 6A.4.2(a1).

²¹ Clause 11.6.9 of the NER provides that the value of the RAB for the first regulatory control period under the revised NER may also be adjusted to have regard to an existing revenue determination and any other arrangements agreed between the AER and TNSP. The 2005 decision did not provide any capex allowance for Directlink, but stated that it is appropriate to add any capex in the RAB at the next reset for prudent works that Directlink undertook to improve its reliability (AER, *Final decision: DJV application for conversion and revenue cap*, p. 25). This indicates that the use of forecast depreciation for the purposes of rolling forward the RAB from 2005–06 to 2014–15 is appropriate.

²² NER, cl. S6A.2.1(f)(6).

forecast RAB, although the adjustments to the RAB are based on forecasts rather than actual amounts.

We are also required to decide whether depreciation for establishing the TNSP's RAB as at the commencement of the following regulatory control period is to be based on actual or forecast capex.²³ Our decision on whether to use actual or forecast depreciation must be consistent with the capex incentive objective.²⁴ We must have regard to:²⁵

- any other incentives the TNSP has to undertake efficient capex
- substitution possibilities between assets with different lives
- the extent of overspending and inefficient overspending relative to the allowed forecast
- the capex incentive guideline
- the capital expenditure factors.

2.3.1 Interrelationships

The RAB is an input into the determination of the return on capital and depreciation (return of capital) allowances.²⁶ Factors that influence the RAB will therefore flow through to these building block components and the annual building block revenue requirement. Other things being equal, a higher RAB increases both the return on capital and depreciation allowances.

The RAB is determined by various factors, including;

- the opening RAB (meaning the value of existing assets at the beginning of the regulatory control period)
- net capex²⁷
- depreciation
- indexation adjustment – so the RAB is presented in nominal terms, consistent with the rate of return.

The opening RAB depends on the value of existing assets and will depend on actual net capex, actual inflation outcomes and depreciation in the past.

The RAB when projected to the end of the regulatory control period increases due to both forecast new capex and the indexation adjustment. The size of the indexation adjustment depends on expected inflation (which also affects the nominal rate of return or WACC) and the size of the RAB at the start of each year.

²³ NER, cl. S6A.2.2B(a).

²⁴ NER, cl. S6A.2.2B(b).

²⁵ NER, cl. S6A.2.2B(c).

²⁶ The size of the RAB also impacts the benchmark debt raising cost allowance. However, this amount is usually relatively small and therefore not a significant determinant of revenues overall.

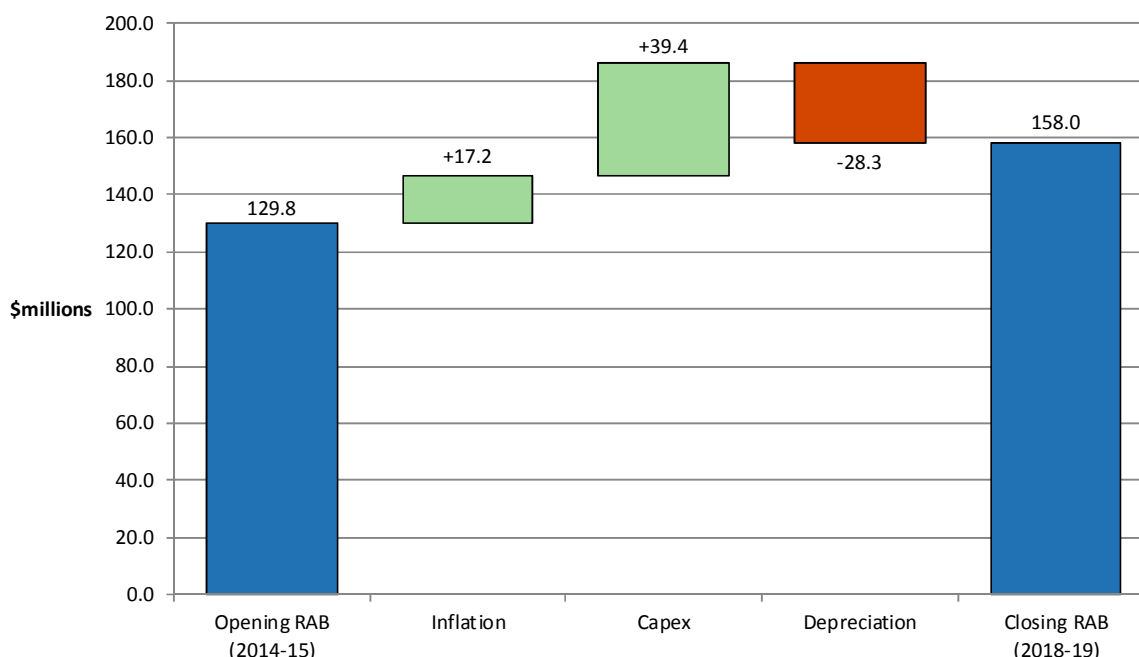
²⁷ Net capex is gross capex less disposals. The rate of return or WACC also influences the size of the capex. This is because capex is not depreciated in the year it is first incurred, but added to the RAB at the end of the year. Instead, the capex amount is escalated by half a WACC to arrive at an end of year value. It then begins depreciating the following year.

Depreciation reduces the RAB. The depreciation allowance depends on the size of the opening RAB and the forecast net capex. By convention, the indexation adjustment is also offset against depreciation to prevent double counting of inflation in the RAB and WACC, which are both presented in nominal terms. This reduces the depreciation building block that feeds into the annual building block revenue requirement.

Figure 2-1 shows the key drivers of the change in the RAB over the 2015–20 regulatory control period as proposed by Directlink. Overall, the closing RAB at the end of the 2015–20 regulatory control period would be 22 per cent higher than the opening RAB at the start of that period based on the proposal, in nominal terms. The proposed forecast net capex increases the RAB by about 30 per cent, while forecast inflation increases it by about 13 per cent. Forecast depreciation, on the other hand, reduces the RAB by about 22 per cent.

The RAB would rise in real terms over the 2015–20 regulatory control period based on Directlink's proposal. We consider the depreciation amount to be generally reasonable and satisfy the requirements of the NER in terms of the assigned asset lives, as discussed in attachment 5. The depreciation amount also largely depends on the opening RAB (which in turn depends on capex in the past). However, we do have concerns with the size of the forecast net capex. Figure 2-1 shows forecast net capex is the largest driver of the increase in the RAB and we have considered whether it is appropriate that the forecast net capex exceeds depreciation as Directlink has proposed. Refer to attachment 6 for the discussion on forecast capex.

Figure 2-1 Key drivers of changes in the RAB (\$m, nominal)



A ten per cent increase in the opening RAB causes revenues to increase by about 7.2 per cent. However, the impact on revenues of the annual change in RAB depends on the source of the RAB change, as some drivers affect more than one building block cost.²⁸

²⁸ If capex causes the RAB increase, return on capital, depreciation, and debt raising costs all increase too. If a reduction in depreciation causes the RAB increase, revenue could increase or decrease. In this case, the higher return on capital is offset (perhaps more than offset) by the reduction in depreciation allowance. Inflation naturally increases the RAB in

2.4 Reasons for draft decision

We do not accept Directlink's proposed opening RAB value of \$129.8 million as at 1 July 2015. This is because we have amended certain inputs to its proposed RFM so that they reconcile with those approved in the 2006 revenue cap decision.²⁹

We also do not accept Directlink's projected closing RAB at the end of the 2015–20 regulatory control period and have reduced it by \$10.1 million (or 6.4 per cent). The reasons for the reduction are our adjustments to its opening RAB as at 1 July 2015 (section 2.4.1), forecast capex (attachment 6) and forecast depreciation (attachment 5).

2.4.1 Opening RAB at 1 July 2015

We do not accept Directlink's proposed opening RAB value of \$129.8 million as at 1 July 2015. We instead determine an opening RAB value of \$129.6 million as at 1 July 2015 for Directlink. This is because we have corrected the 'allowed WACC' and 'forecast inflation rate' inputs in the proposed RFM. These inputs need to reconcile with those approved in the 2006 revenue cap decision.

We reviewed other key inputs into Directlink's proposed RFM, such as the opening RAB value as at 1 July 2005, CPI and asset lives. We found these were correct and they reconcile with relevant data sources such as ABS data, regulatory accounts and the 2006 decision model. Also, Directlink's proposed actual capex values for 2005–2013 are consistent with its audited regulatory accounts. We note that Directlink does not have any movements in provisions during 2005–13. Therefore, we did not make any further adjustment to its 2005–2013 actual capex for RAB roll forward purposes.³⁰

2.4.2 Forecast closing RAB at 30 June 2020

We forecast a closing RAB value of \$147.9 million by 30 June 2020 for Directlink, which represents a 6.4 per cent reduction to Directlink's proposal. This reduction reflects our draft decision on the inputs for determining the forecast RAB in the PTRM. To determine the forecast RAB value for Directlink, we amended the following PTRM inputs:

- We reduced Directlink's proposed opening RAB as at 1 July 2015 by \$0.2 million or 0.1 per cent (section 2.4.1).
- We reduced Directlink's proposed forecast capex for the 2015–20 regulatory control period by \$10.7 million (\$ nominal) or 27.0 per cent (attachment 6).
- We reduced Directlink's proposed forecast regulatory depreciation allowance by \$0.6 million or 5.4 per cent (attachment 5).

2.4.3 Application of depreciation approach in RAB roll forward for next reset

Consistent with our *Framework and approach* paper and Directlink's proposal,³¹ we determine that the forecast depreciation approach is to be used to establish the RAB at the commencement of

nominal terms. However, the real impact from changing the inflation forecast is inconsequential as revenues are updated annually by actual inflation and the X factor, which is generally unaffected by the assumed forecast inflation rate.

²⁹ AER, *Decision – Directlink Joint Venturers' application for conversion and revenue cap*, 3 March 2006.

³⁰ At the time of this draft decision, the roll forward of Directlink's RAB includes estimated capex values for 2013–14 and 2014–15. We will update the 2013–14 estimated capex values with the actual values for the final decision. We will update the 2014–15 capex values with revised estimates for the final decision. The update for 2014–15 actual capex values will be made at the next reset.

³¹ AER, *Framework and approach paper Directlink—regulatory control period commencing 1 July 2015*, January 2014, pp. 23–24.

Directlink's regulatory control period from 1 July 2020. We consider this approach will provide sufficient incentives for Directlink to achieve capex efficiency gains over the 2015–20 regulatory control period.

We had regard to the relevant factors in the NER in developing the approach to choosing the depreciation approach set out in our capex incentives guideline.³² Our approach is to apply forecast depreciation except where:

- there is no CESS in place and therefore the power of the capex incentive may need to be strengthened, or
- a TNSP's past capex performance demonstrates evidence of persistent overspending or inefficiency, thus requiring a higher powered incentive.

In making our decision on whether to use actual depreciation in either of these circumstances we have considered:

- the substitutability between capex and opex and the balance of incentives between these
- the balance of incentives with service outcomes
- the substitutability of assets of different asset lives.

We have chosen forecast depreciation because, in combination with the CESS, it will provide a 30 per cent reward for capex underspends and 30 per cent penalty for capex overspends, which is consistent for all asset classes. In developing our capex incentives guideline, we considered this to be a sufficient incentive for a TNSP to achieve efficiency gains over the regulatory control period in most circumstances.

As discussed in attachment 10, Directlink is not currently subject to a CESS but we will apply the CESS to Directlink's 2015–20 regulatory control period. We consider the incentive provided by the application of the CESS in combination with the use of forecast depreciation and our other ex post capex measures are sufficient to achieve the capex incentive objective.³³

³² AER, *Capital expenditure incentive guideline for electricity network service providers*, November 2013, pp. 12–13.

³³ Our ex post capex measures are set out in the capex incentives guideline: AER, *Capex incentives guideline*, November 2013, pp. 13–19, 20–21. The guideline also sets out how all our capex incentive measures are consistent with the capex incentive objective.