Draft decision

Essential Energy distribution determination

2015–16 to 2018–19

Attachment 2: Regulatory asset base

November 2014

AUSTRALIAN ENERGY REGULATOR

Inquiries about this document should be addressed to:

Australian Energy Regulator
GPO Box 520
Melbourne Vic 3001
Tel: (03) 9290 1444
Fax: (03) 9290 1457
Email: AERInquiry@aer.gov.au

AER reference: 54419

Note

This attachment forms part of the AER's draft decision on Essential Energy's 2015–19 distribution determination. It should be read with other parts of the draft decision.

The draft decision includes the following documents:

Overview

Attachment 1 – Annual revenue requirement

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 – Demand management incentive scheme

Attachment 13 – Classification of services

Attachment 14 – Control mechanism

Attachment 15 – Pass through events

Attachment 16 – Alternative control services

Attachment 17 – Negotiated services framework and criteria

Attachment 18 – Connection policy

Contents

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
CPI-X	consumer price index minus X
DRP	debt risk premium
DMIA	demand management innovation allowance
DMIS	demand management incentive scheme
distributor	distribution network service provider
DUoS	distribution use of system
EBSS	efficiency benefit sharing scheme
ERP	equity risk premium
expenditure assessment guideline	expenditure forecast assessment guideline for electricity distribution
F&A	framework and approach
MRP	market risk premium

Shortened form	Extended form
NEL	national electricity law
NEM	national electricity market
NEO	national electricity objective
NER	national electricity rules
NSP	network service provider
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
SAIDI	system average interruption duration index
SAIFI	system average interruption frequency index
SLCAPM	Sharpe-Lintner capital asset pricing model
STPIS	service target performance incentive scheme
WACC	weighted average cost of capital

2 Regulatory asset base

We are required to make a decision on Essential Energy's opening regulatory asset base (RAB) as at 1 July 2014.[1] We use the RAB at the start of each regulatory year to determine the return of capital (regulatory depreciation) and return on capital building block allowances. This attachment presents our draft decision on the opening RAB value as at 1 July 2014 for Essential Energy and roll forward of the forecast RAB over the 2014–19 period.

2.1 Draft decision

We do not accept Essential Energy's proposed opening RAB of $6770.3 million ($ nominal) as at 1 July 2014.[2] We instead determine an opening RAB value of $6685.4 million as at 1 July 2014. This is because we amended Essential Energy's proposed actual capex values to reverse the movements in capitalised provisions from 2009–2014. This amendment reduced the proposed opening RAB as at 1 July 2014 by $84.9 million (or 1.3 per cent) compared to that proposed.

To determine the opening RAB as at 1 July 2014, we have rolled forward the RAB over the 2009–14 regulatory control period to determine a closing RAB value at 30 June 2014. This roll forward includes an adjustment at the end of the 2009–14 regulatory control period to account for the difference between actual 2008–09 capex and the estimate approved at the 2009 determination.[3] From 1 July 2014 metering will be classified as an alternative control service and therefore metering assets are to be excluded from the standard control services RAB. This opening RAB value discussed in this attachment represents the closing RAB value at 30 June 2014 adjusted for the removal of these metering assets.

Table 2-1 sets out our draft decision on the roll forward of the RAB for the 2009–14 regulatory control period.

We determine a forecast closing RAB value at 30 June 2019 of $8145.0 million ($ nominal). This is $868.4 million (or 9.6 per cent) lower than the amount of $9013.4 million ($ nominal) proposed by Essential Energy. Our draft decision on the forecast closing RAB reflects the amended opening RAB as at 1 July 2014, and our draft decision on forecast capex (attachment 6) and forecast regulatory depreciation (attachment 5).

Table 2-2 sets out our draft decision on the forecast RAB values for Essential Energy's 2014–19 period.

We determine that the forecast depreciation approach is to be used to establish the opening RAB at the commencement of the 2019–24 regulatory control period for Essential Energy.[4] This will apply to the full 2014–19 period, including the 2014–15 transitional regulatory control period. We consider this approach will provide sufficient incentives for Essential Energy to achieve capex efficiency gains over those periods. Essential Energy is not currently subject to a capital expenditure sharing scheme (CESS) but we will apply the CESS to Essential Energy over the subsequent (2015–19) regulatory control period.

1 NER, cl. 6.12.1(6).
2 Essential Energy, *Regulatory proposal*, May 2014, Attachment 4.02.
3 The end of period adjustment will be positive (negative) if actual capex is higher (lower) than the estimate approved at the 2009–14 determination.
4 NER, cl. 6.12.1(18).

Table 2-1 AER's draft decision on Essential Energy's RAB for the 2009–14 regulatory control period ($ million, nominal)

	2009–10	2010–11	2011–12	2012–13	2013–14[a]
Opening RAB	4319.4	4812.7	5361.5	6012.4	6461.0
Capital expenditure[b]	680.4	709.4	740.6	650.6	578.7
Inflation indexation on opening RAB	78.6	136.9	181.7	106.0	158.3
Less: straight-line depreciation	265.8	297.5	271.4	308.0	332.5
Closing RAB	4812.7	5361.5	6012.4	6461.0	6865.4
Difference between estimated and actual capex (1 July 2008 to 30 June 2009					–40.3
Return on difference for 2008–09 capex					–24.6
Closing RAB as at 30 June 2014					6800.5
Meters moved to alternative control services					–115.1
Opening RAB as at 1 July 2014					**6685**.4

Source: AER analysis
(a): Based on estimated capex. We will update the RAB roll forward in the final decision.
(b): Net of disposals and capital contributions, and adjusted for CPI.

Table 2-2 AER's draft decision on Essential Energy's RAB for the 2014–19 period ($ million, nominal)

	2014–15	2015–16	2016–17	2017–18	2018–19
Opening RAB	6685.4	7024.5	7313.1	7595.8	7866.3
Capital expenditure[a]	437.7	405.2	414.8	406.5	408.6
Inflation indexation on opening RAB	167.1	175.6	182.8	189.9	196.7
Less: straight-line depreciation	265.7	292.2	314.9	326.0	326.5
Closing RAB	7024.5	7313.1	7595.8	7866.3	8145.0

Source: AER analysis.
(a): Net of disposals and capital contributions.

2.2 Essential Energy's proposal

Essential Energy used our standard roll forward model (RFM) to establish an opening RAB as at 1 July 2014 and our standard post-tax revenue model (PTRM) to roll forward the RAB over the 2014–19 period.

Essential Energy proposed an opening RAB value as at 1 July 2009 of $4319.4 million ($ nominal). Rolling forward this RAB and using depreciation based on actual capex, Essential Energy proposed a closing RAB as at 30 June 2014 of $6888.5 million ($ nominal). Table 2-3 presents the proposed roll forward of its RAB during the 2009–14 regulatory control period.[5] The removal of metering assets

[5] Essential Energy's also reallocated the value of its 'RAB adjustment' and 'Deferred depreciation' asset classes at 30 June 2014 across its existing system assets. This had no impact on the total RAB value.

from the RAB at 1 July 2014 resulted in a proposed opening RAB as at 1 July 2014 of $6770.3 million ($ nominal).[6]

Table 2-3 Essential Energy's proposed RAB for the 2009–14 regulatory control period ($million, nominal)

	2009–10	2010–11	2011–12	2012–13	2013–14[a]
Opening RAB	4319.4	4820.6	5383.9	6066.0	6518.5
Capital expenditure[b]	688.3	723.8	771.5	654.7	585.5
Inflation indexation on opening RAB	78.6	137.2	182.5	106.9	163.0
Less: straight-line depreciation	265.8	297.6	271.9	309.2	333.7
Closing RAB	4820.6	5383.9	6066.0	6518.5	6933.2
Difference between estimated and actual (1 July 2008 to 30 June 2009)					–27.7
Return on difference for 2008–09 capex					–17.0
Closing RAB as at 30 June 2014					6888.5
Meters moved to alternative control services					–118.2
Opening RAB as at 1 July 2014					**6770.3**

Source: Essential Energy, *Regulatory proposal*, May 2014, Attachment 4.2.
(a): Based on estimated capex
(b): Net of disposals and capital contributions, and adjusted for CPI.

Essential Energy proposed a closing forecast RAB as at 30 June 2019 of $9013.4 million ($ nominal). This value reflects its proposed opening RAB, forecast capex, forecast inflation and depreciation (based on forecast capex) over the 2014–19 period. Its projected RAB over the 2014–19 period is shown in Table 2-4.

Table 2-4 Essential Energy's proposed RAB for the 2014–19 period ($million, nominal)

	2014–15	2015–16	2016–17	2017–18	2018–19
Opening RAB	6770.3	7244.0	7680.9	8124.0	8562.0
Capital expenditure[a]	572.0	553.3	574.9	573.9	581.2
Inflation indexation on opening RAB	169.3	181.1	192.0	203.1	214.1
Less: straight-line depreciation	267.6	297.4	323.7	339.0	343.8
Closing RAB	7244.0	7680.9	8124.0	8562.0	9013.4

Source: Essential Energy, *Regulatory proposal*, May 2014, Attachment 4.1.
(a): Net of disposals and capital contributions.

Essential Energy proposed to apply a forecast depreciation approach to establish the RAB at the commencement of 2019–24 regulatory control period, consistent with the approach set out in our Stage 2 framework and approach paper.[7]

[6] From 1 July 2014 metering will be treated as an alternative control service and therefore metering assets are to be excluded from the standard control services RAB.

2.3 AER's assessment approach

We are required to roll forward the service provider's RAB during the 2009–14 regulatory control period to establish the opening RAB at 1 July 2014. This value can be adjusted for any differences in the forecast and actual capex, disposals and capital contributions. It may also be adjusted to reflect any changes in the use of the assets, with only assets used in the provision of standard control services to be included in the RAB.[8]

To determine the opening RAB, we developed an asset base RFM in accordance with the requirements of the National Electricity Rules (NER).[9] A service provider must use the RFM in preparing its regulatory proposal. The RFM rolls forward the RAB from the beginning of the final year of the 2004–09 regulatory control period, through the 2009–14 regulatory control period, to the beginning of the 2014–19 period. The five regulatory years between 2014–2019 are split over two regulatory control periods (a transitional regulatory control period from 2014–2015 and then a subsequent regulatory control period from 2015–19). However, the NER expressly provides that when we determine the opening value of the regulatory asset base for this five year period we should do so as if the two periods were combined.[10] The roll forward occurs for each year by:

- Adding an inflation (indexation) adjustment to the opening RAB for the relevant year. This adjustment must be consistent with the inflation factor used in the control mechanism.[11]
- Adding capex to the RAB for the relevant year.[12] In future determinations, the NER allows us to review a service provider's past capex and exclude inefficient past capex from being rolled into the RAB.[13] We note that under the transitional rules, the review of past capex does not apply to Essential Energy prior to 1 July 2015.[14] Therefore, for the purposes of this draft decision, we will add Essential Energy's actual or estimated capex in the 2009–14 regulatory control period to the RAB. We check actual capex amounts against audited annual reporting regulatory information notice (RIN) data and generally accept the capex reported in those RINs in rolling forward the RAB. However, there may be instances where adjustments are required to the annual reporting RIN data because it is not fit for purpose due to a particular issue.
- Subtracting depreciation from the RAB for the relevant year, calculated in accordance with the relevant distribution determination for that year.[15] Depreciation based on forecast or actual capex can be used to roll forward the RAB.[16] 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 draft decision, we use depreciation based on actual capex for rolling forward Essential Energy's RAB values over the 2009–14 regulatory control period.[17]
- Subtracting any disposals and capital contributions from the RAB for the relevant year.[18] We check these amounts against audited annual reporting RIN data.

---

7 Essential Energy, *Regulatory proposal*, May 2014, p. 24.
8 NER, cl. S6.2.1.
9 NER, cl. 6.5.1.
10 NER, cll. 11.56.4(c)(4)-(6) and (f).
11 NER, cl. 6.5.1(e)(3).
12 NER, cl. S6.2.1(e)(4).
13 NER, cl. S6.2.2A.
14 NER, cll. 11.56.5 and 11.62.
15 NER, cl. S6.2.1(e)(5).
16 NER, cl. 6.12.1(18).
17 The use of actual depreciation is consistent with the depreciation approach established in the 2009 distribution determinations for NSW service providers.
18 NER, cl. S6.2.1(e)(6).

These annual adjustments give the closing RAB for any particular year, which then becomes the opening RAB for the following year. Through this process the RFM rolls forward the RAB to the end of the 2009–14 regulatory control period. The PTRM used to calculate the annual revenue requirement for the 2014–19 period generally adopts the same RAB roll forward approach as the RFM, although the annual adjustments to the RAB are based on forecasts, rather than actual amounts.

We are required to decide whether depreciation for establishing the service provider's RAB as at the commencement of the 2019–24 regulatory control period is to be based on actual or forecast capex.[19]

The opening RAB for the 2019–24 regulatory control period can be determined using depreciation based either on forecast or actual capex incurred during the 2014–19 period. To roll forward the RAB using depreciation based on forecast capex, we would use the forecast depreciation contained in the PTRM for the 2014–19 period, adjusted for actual inflation. If the approach to roll forward the RAB using depreciation based on actual capex was adopted, we would recalculate the depreciation based on actual capex incurred during the 2014–19 period.

Our decision on whether to use actual or forecast depreciation must be consistent with the capex incentive objective. We must have regard to:[20]

- any other incentives the service provider 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) building block allowances.[21] Factors that influence the RAB will therefore flow through to these building block components and the annual 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 capex[22]
- depreciation
- indexation adjustment – so the RAB is presented in nominal terms, consistent with the rate of return.

---

19 NER, cl. S6.2.2B.

20 NER, cl. S6.2.2B(c).

21 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.

22 The rate of return or WACC also influences the size of the capex. This is because the 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.

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.

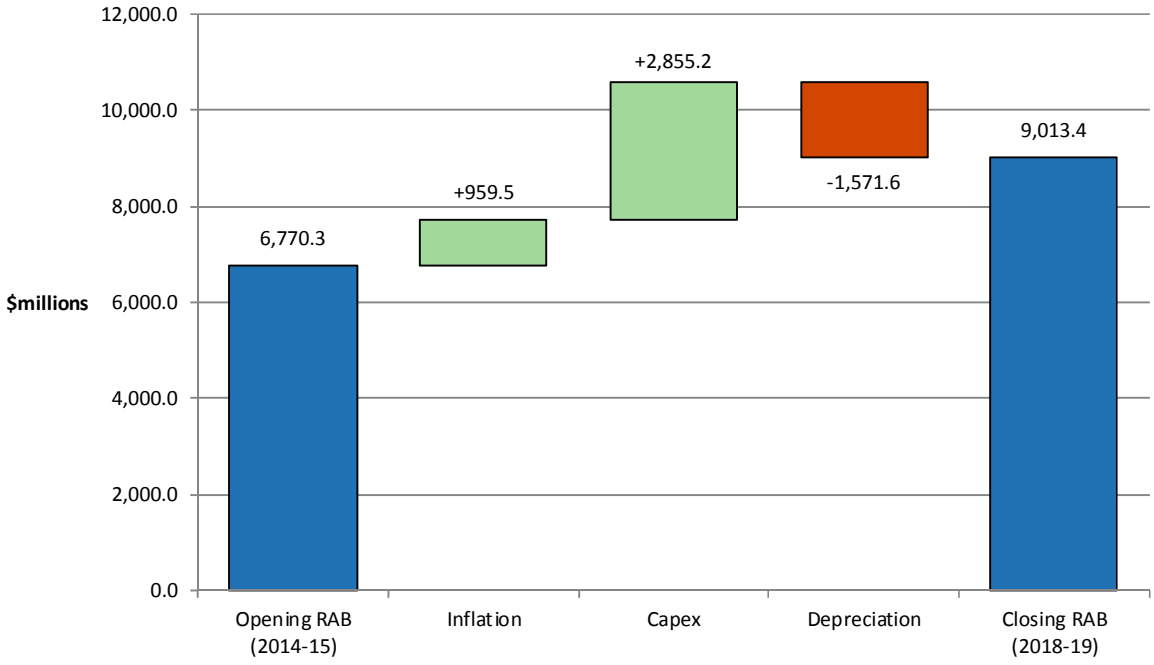
The RAB when projected to the end of the regulatory control period increases due to both forecast new capex and the indexation adjustment. The size of the indexation adjustment depends on expected inflation (which also affects the nominal rate of return or WACC) and the size of the RAB at the start of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

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 rate of return, which are both presented in nominal terms. This reduces the apparent depreciation building block that feeds into the annual revenue requirement.

Figure 2-1 shows the key drivers of the change in the RAB over the 2014–19 period as proposed by Essential Energy. Overall, the closing RAB at the end of the 2014–19 period would be 33 per cent higher than the opening RAB at the start of that period based on the proposal, in nominal terms. The proposal forecast net capex increases the RAB by about 42 per cent, while inflation increases it by about 14 per cent. Forecast depreciation, on the other hand, reduces the RAB by about 23 per cent.

The RAB would rise in real terms over the 2014–19 period based on Essential Energy'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. 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 Essential Energy 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 5.9 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.[23]

2.4 Reasons for draft decision

We have determined an opening RAB value for Essential Energy of $6685.4 million ($ nominal) as at 1 July 2014, a reduction of $84.9 million ($ million) or 1.3 per cent from the proposed value. We forecast a closing RAB value of $8145.0 million by 30 June 2019. This represents a reduction of 868.4 million, or 9.6 per cent compared to the proposal. The reasons for our decision are discussed below.

2.4.1 Opening RAB as at 1 July 2014

To determine the opening RAB as at 1 July 2014 we have rolled forward the RAB over the 2009–14 regulatory control period to determine a closing RAB value at 30 June 2014. As metering is to be classified as alternative control services from 1 July 2014, the metering assets must be removed from the closing RAB as at 30 June 2014 to determine the standard control services opening RABs as at 1 July 2014.

We do not accept Essential Energy's proposed opening RAB value as at 1 July 2014 of $6770.3 million. Instead we have determined an opening RAB value of $6685.4 million ($ nominal) as at 1 July 2014, a reduction of $84.9 million ($ nominal), or 1.3 per cent from Essential Energy's proposal. This is because we have adjusted Essential Energy's actual capex for 2008–09 to 2013–14 for the movements in capitalised provisions in each of those years.[24] Essential Energy's proposed actual capex for 2008–09 to 2013–14 in the RFM included capitalised provisions.[25] Provisions are expenditures that Essential Energy anticipates, but has not yet paid (incurred). Examples of provisions include environmental provisions, superannuation and other employment entitlements such as annual leave and long service leave. The NER requires a service provider's opening RAB value to be increased by the amount of all capex incurred during its 2009–14 regulatory control period.[26] We considered this matter in detail in our transmission determination for ElectraNet.[27]

Consistent with that determination, we consider that a service provider should not treat capitalised provisions as capex incurred when rolling forward its RAB, because a service provider has not yet paid out (incurred) the expenses to which the provisions relate. We adjust the RAB by the movement in capitalised provisions from one year to the next. Therefore, increases in capitalised provisions are removed from the RAB, while decreases in capitalised provisions are added to the RAB to reflect when they are paid out. This approach is consistent with that for calculating the EBSS carryovers and for setting our base year opex forecast, as discussed further in attachment 7.

We accept Essential Energy's approach to reallocating the value of its 'RAB adjustment' and 'Deferred depreciation' asset classes at 1 July 2014 across its existing system assets. This reallocation has no impact on the total RAB value as at 1 July 2014 but applies the values to more meaningful asset classes.

---

23 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 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.

24 Cash paid out on provisions has been pro-rated across asset classes according to original capitalised provisions allocation presented in the reset RIN.

25 At the time of this draft decision, the roll forward of Essential Energy's RAB includes estimated capex values for 2013–14. We will update the 2013–14 estimated capex values with the actual values for the final decision.

26 NER, cl. S6.2.1(e)(1).

27 AER, *Final decision: ElectraNet transmission determination 2013–14 to 2017–18, April 2013*, pp. 138–142

We also reviewed the other key inputs into Essential Energy's proposed RFM, such as CPI, rate of return, asset lives and disposal values. We found these were correct and they reconcile with relevant data sources such as ABS data, annual reporting RIN data and the 2009–14 decision models. For the 2013–14 CPI input, we have updated the RFM with the actual value of 2.45 per cent.

2.4.2 Forecast closing RAB as at 30 June 2019

We forecast a closing RAB value of $8145.0 million by 30 June 2019 for Essential Energy. This represents a reduction of 868.4 million, or 9.6 per cent to Essential Energy'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, we amended the following PTRM inputs:

- We reduced Essential Energy's proposed opening RAB as at 1 July 2014 by $84.9 million or 1.3 per cent (section 2.4.1).
- We reduced Essential Energy's proposed forecast capex for the 2014–19 period by $782.5 million or 27.4 per cent (attachment 6).
- We reduced Essential Energy's proposed forecast regulatory depreciation allowance by $1.1 million or 0.2 per cent (attachment 5).

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

Consistent with our Stage 2 Framework and Approach and Essential Energy's proposal, we determine that the forecast depreciation approach is to be used to establish the RAB at the commencement of Essential Energy's 2019–24 regulatory control period.[28] This approach will apply to both the transitional and subsequent regulatory control periods for Essential Energy.[29] We consider this approach will provide sufficient incentives for Essential Energy to achieve capex efficiency gains over the relevant regulatory control periods.

We had regard to the relevant factors in the NER in developing the approach to choosing the depreciation approach set out in our capex incentive guideline.[30] 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 service provider'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.

---

28 AER, Stage 2 f*ramework and approach paper*, January 2014, p. 37.

29 The transitional regulatory control period for Essential Energy is 2014–15. Essential Energy's subsequent regulatory control period is from 2015–16 to 2017–19.

30 AER, *Capital expenditure incentive guideline for electricity network service providers*, November 2013, p. 12.

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 service provider to achieve efficiency gains over the regulatory control period in most circumstances.

As discussed in attachment 10, Essential Energy is not currently subject to a CESS but we will apply the CESS to Essential Energy from 1 July 2015. The CESS does not apply to Essential Energy for the 2014–15 transitional regulatory control period.[31] We consider the use of a forecast depreciation approach in combination with the application of the CESS and our other ex post capex measures are sufficient to achieve the capex incentive objective.[32]

[31] NER, cl. 11.56.3(a)(3).

[32] Our ex post capex measures are set out in the capex incentives guideline, AER, *Capital expenditure incentive guideline for electricity network service providers*, 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.