Capital Expenditure Incentive Guidelines for Electricity Network Service Providers

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Version 4

AUSTRALIAN ENERGY REGULATOR

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1 Overview

Incentive-based regulation is central to our approach to regulating electricity networks. It provides NSPs with incentives to pursue efficiency improvements to the benefit of both NSPs and network users. If an NSP spends less than its capital expenditure (capex) allowance, it can keep the benefits of financing the capex allowance until the end of the regulatory control period. At the end of the regulatory control period we update the Regulatory Asset Base (RAB) for actual capex. Consumers benefit into the future as the RAB is lower than it would have been if the NSP had spent its full allowance in delivering the service.

These~~is~~ guidelines complement~~s~~ the incentives an NSP already has to deliver efficient capex. It outlines new ex ante and ex post measures to further incentivise efficient capex.

There are three main aspects to this:

1. We have developed a Capital Expenditure Sharing Scheme (CESS) to share efficiency gains and losses between NSPs and network users.
2. We have developed criteria for deciding whether to roll forward the RAB using depreciation based on forecast or actual capex.
3. There are new ex post measures to ensure that network users do not bear the costs of inefficient or imprudent overspends, capitalised operating expenditure (opex) or inflated related party margins.

~~The AER undertook a review of incentive schemes which it completed in 2023. This guideline incorporates revisions recommended by the review including:~~

- ~~application of a lower sharing factor of 20 per cent to any underspend amount greater than 10 per cent of the approved forecast capital expenditure allowance~~
- ~~new transparency measures which require NSPs to explain variations between capital expenditure forecasts and outcomes~~
- ~~further guidance on application of the CESS to large transmission projects.~~

~~Version 2 of the Guideline, which incorporates these amendments, will apply to NSPs from the commencement of their first regulatory control period after the date of this guideline.~~

1.1 Structure

There are three main parts to these~~is~~ guidelines:

1. Chapter 2 outlines our approach to the CESS. An example of how the CESS works is provided at Appendix A.
2. Chapter 3 outlines our approach to deciding whether to use forecast or actual depreciation when rolling forward the RAB.
3. Chapter 4 outlines our approach to ex post measures to incentivise efficient capex. This includes the process for assessing whether capex has been prudent and efficient and the factors we will consider in deciding whether to exclude capex from the RAB.

2 The Capital Expenditure Sharing Scheme

The CESS provides ex ante incentives for NSPs to undertake efficient capex during a regulatory control period. This chapter sets out how the CESS operates.

2.1 Objective

The overarching objective of the CESS is to provide NSPs with an incentive to undertake efficient capex during a regulatory control period. It achieves this by rewarding NSPs that outperform their capex allowance and penalising NSPs that spend more than their capex allowance. The CESS also provides a mechanism to share efficiency gains and losses between NSPs and network users.

Without a CESS, an NSP will face incentives that decline over a regulatory control period. If an NSP makes an efficiency gain in the first year of a five-year regulatory control period any benefit will last for four more years before we update the RAB for actual capex. In the final year however, the benefit will be approximately zero. This may lead to inefficient capex and inefficient substitution of opex for capex towards the end of a regulatory control period.

The CESS complements the rewards an NSP would already receive for an efficiency gain so the total benefit of an efficiency gain to an NSP will be the same in each year. The CESS also provides symmetric incentives in that the reward for an efficiency gain is equal to the penalty for an efficiency loss of the same quantum.

2.2 Rule requirements

Clauses 6.5.8A and 6A.6.5A of the NER set out the factors we must take into account in developing any CESS. Firstly, any CESS must be consistent with the capital expenditure incentive objective under clauses 6.4A and 6A.5A:

> *The capital expenditure incentive objective is to ensure that, where the value of a regulatory asset base is subject to adjustment in accordance with the Rules, then the only capital expenditure that is included in an adjustment that increases the value of that regulatory asset base is capital expenditure that reasonably reflects the capital expenditure criteria.*

The capital expenditure criteria are contained in clauses 6.5.7(c) and 6A.6.7(c) and require us to be satisfied that capex is prudent and efficient and based on realistic demand forecasts. In deciding whether we are satisfied that the capex criteria are met, we must consider the capital expenditure factors in clauses 6.5.7(e) and 6A.6.7(e).

In addition, in developing any CESS, we must take into account the capital expenditure sharing scheme principles, outlined in clauses 6.5.8A(c) and 6A.6.5A(c). These include:

- NSPs should be rewarded or penalised for improvements or declines in the efficiency of capex
- these rewards and penalties should be commensurate with the efficiencies or inefficiencies in capex, but rewards and penalties do not need to be the same.

In developing any CESS, we must also take into account:

- the interaction of the CESS with any other incentives the NSP has to undertake efficient capex or opex
- the capital expenditure objectives (outlined in clauses 6.5.7(a) and 6A.6.7(a)) and, if relevant, the operating expenditure objectives (outlined in clauses 6.5.6(a) and 6A.6.a(a)).

In deciding whether to apply a CESS to an NSP, and the nature and details of any CESS to apply to an NSP, we must:

- make that decision in a manner that contributes to the capital expenditure incentive objective
- take into account the capital expenditure sharing scheme principles, the capital expenditure objectives, other incentive schemes, and, where relevant, the operating expenditure objectives, as they apply to the particular NSP, and the circumstances of the NSP.

2.3 General application of the scheme

This section describes how we calculate efficiency gains or efficiency losses, and the method by which efficiency gains or losses are shared between NSPs and network users. This involves four steps:

1. We calculate efficiency gains and losses in net present value (NPV) terms. We do this for each year of the regulatory control period and then the total efficiency gain/loss is calculated for the regulatory control period.
2. We apply a sharing factor to the total efficiency gain/loss to calculate the NSP's share of the gain/loss.
3. We calculate financing benefits/costs that accrue through the regulatory control period.
4. We calculate the CESS reward/penalty by subtracting the financing benefit/cost that has accrued from the NSP's share of the total efficiency gain/loss.

We discuss these steps in more detail below. The CESS penalty or reward forms a separate building block for the NSP's revenue allowance in the following regulatory control period.

2.3.1 Calculating efficiency gains and losses

An NSP's allowance is our best estimate of efficient capex. In this way, if the NSP spends less than its capex allowance, we consider this is an efficiency gain for the purpose of applying the CESS. Conversely, if an NSP spends more than its allowance, this counts as an efficiency loss when applying the CESS.

To calculate the annual efficiency gain/loss, we subtract the NSP's actual capex from its capex allowance in each year of the regulatory control period.

The capex allowance is calculated as our approved allowance (as determined prior to the start of the regulatory control period), plus any adjustments we allow from pass throughs, reopening of capex or contingent projects.

Actual capex in each regulatory year is inclusive of all capex, less any capex the NSP incurs in delivering a priority project approved under the network capability component of the service target performance incentive scheme for Transmission Network Service Providers.

When calculating the annual efficiency gain/loss, we may make further adjustments for deferrals of capex, or where we exclude capex from the RAB after an ex post review (discussed in sections 2.7~~5~~ and 2.8~~6~~).

For the final year (and potentially the penultimate year) of the regulatory control period, we will use an estimate of actual capex (see section 2.4).

We will calculate the efficiency gain for year one as:

> Year 1 efficiency gain = capex allowance for year 1 – actual capex in year 1

We will discount the efficiency gain from each year into its NPV at the end of the regulatory control period. In doing so we will assume capex occurred in the middle of the year. To calculate the total efficiency gain, we add the annual efficiency gains in NPV terms.

> Total efficiency gain = NPV year 1 efficiency gain + NPV year 2 efficiency gain + NPV year 3 efficiency gain + NPV year 4 efficiency gain + NPV year 5 efficiency gain

The above calculations are represented by the following equation:

$$Total\ efficiency\ gain = \sum_{n=1}^{p} \frac{1}{(1+WACC)^{n-p-0.5}} \times (F_n - A_n)$$

Where:

> *n* is the regulatory year
>
> *WACC* is the nominal weighted average cost of capital that applied during the regulatory control period
>
> *p* is the length of the regulatory control period
>
> F_n is the capex allowance for year n
>
> A_n is actual capex for year n.

2.3.2 Applying the sharing factor

A sharing factor of 30~~%~~ ~~per cent~~ will apply to all efficiency losses (i.e. overspending in comparison to the capital expenditure forecast), and a tiered rate will apply to efficiency gains (underspending in comparison to the capital expenditure forecast).

Specifically, if an NSP underspends in comparison to its approved capital expenditure forecast, a sharing ratio of:

- 30~~%~~ ~~per cent~~ will apply to any underspend amount up to and including 10~~%~~ ~~per cent~~ of the approved forecast capital expenditure allowance; and
- 20~~%~~ ~~per cent~~ will apply to any underspend amount greater than 10~~%~~ ~~per cent~~ of the approved forecast capital expenditure allowance.

A sharing factor of 30~~%~~ ~~per cent~~ allocates 30~~%~~ ~~per cent~~ of any efficiency gain or loss to the NSP. The remaining 70~~%~~ ~~per cent~~ is allocated to network users. A sharing factor of 20~~%~~ ~~per~~

~~cent~~ allocates 20~~%~~ ~~per cent~~ of any efficiency gains to the NSP and the remaining 80~~%~~ ~~per cent~~ to network users.

If an NSP overspends against its forecast, or underspends by 10% or less, the CESS is calculated as follows:

NSP share = total efficiency gain or loss × 30 %

If an NSP underspends by more than 10% the CESS is calculated as follows:

NSP share = (0.1 × forecast capex) × 30 % + (0.9 × forecast capex – actual capex) × 20 %

A worked example is provided in appendix A.

2.3.3 Accounting for benefits and costs already accrued

To ensure that the power of the incentive is the same in each year of the regulatory control period, the CESS takes into account any benefits or costs that have already accrued to the NSP during the regulatory control period. This is the financing benefit of the underspend or the financing cost of the overspend.

We assume capex is incurred in the middle of each year. Hence, in the year of the underspend, the NSP will recover only half a year of benefit. In following years, the NSP will retain a full year of benefit calculated as the underspend multiplied by the WACC. We represent this in the following equation.

$$Year\ n\ financing\ benefit = [(1 + WACC)^{0.5} - 1] \times (F_n - A_n) + \sum_{j=1}^{n-1} WACC \times (F_j - A_j)$$

Where:

j is a regulatory year in the current regulatory control period prior to year *n*
reward = NSP share – net financing benefit

F_j is the capex allowance for year *j*

A_j is actual capex for year *j*

To put the financing benefits from each year into constant terms, we apply a discount factor to the benefits from each year. We calculate this discount rate on the basis that financing benefits accrue at the end of each year. We then sum the discounted financing benefits from each year to get a net financing benefit for the regulatory control period. We will calculate this using the following equation.

$$Net\ financing\ benefit = \sum_{n=1}^{p} \frac{1}{(1 + WACC)^{n-p}} \times year\ n\ financing\ benefit$$

2.3.4 CESS reward or penalty

To calculate the CESS reward or penalty payable to the NSP, we then subtract the net financing benefit from the NSP's share of the cumulative efficiency gain.

CESS reward = NSP share – net financing benefit

We will apply this CESS reward (penalty) as an additional building block adjustment to the NSP's revenue over the upcoming regulatory control period.

An NSP may propose to vary its CESS reward (or penalty) to voluntarily reduce its CESS reward (or increase its CESS penalty), as this may directly benefit consumers.

2.4 Final year adjustment

Because regulatory determinations are finalised prior to the end of the regulatory control period, actual capex for the final year of the regulatory control period will not be available when we calculate the CESS rewards or penalties. Instead, we will use an estimate of capex to calculate the efficiency gains or losses for the final regulatory year.

At the next regulatory determination actual capex data will be available for that year. Where an NSP's actual capex differs from the capex estimate used to calculate the CESS, we will make an adjustment to account for the difference. The adjustment for the final year of the regulatory control period will be:

$$Final\ year\ adjustment = \left(A_p^* - A_p\right) \times \left[\frac{NSP\ sharing\ factor - 1}{(1 + WACC)^{-0.5}} + 1\right]$$

Where:

A_p^* is the estimate of actual capex in the final year of the regulatory control period that we have used to initially calculate the CESS rewards or penalties

A_p is actual capex in the final year of the regulatory control period.

We will apply a discount rate to account for the time value of money. This adjustment may also be required for the penultimate year of the regulatory control period where finalised actual capex figures for that year are not available before finalising the regulatory determination.

2.5 Transparency

Our assessment of capex proposals is primarily based on revealed costs, that is actual capex undertaken by the NSP in previous years. The CESS provides incentives for NSPs to spend less than forecast. The revealed costs then form the basis for future forecasts.

Given the capital expenditure allowance for a regulatory period is set as an efficient allowance, we expect NSPs to explain the reasons for their decisions to spend more or less than the capex allowance. The information will assist stakeholders understand the extent to which differences between actual and forecast capital expenditure are driven by efficiency gains or other factors such as deferrals, changes in materials and labour costs, and changes in regulatory obligations.

If an NSP proposes an increase in capex above historic levels as part of a reset process, we expect the NSP to explain the reasons for the increase. Relevant information includes:

- proposed capex compared to historic capex by asset category
- whether new step changes (such as new regulatory obligations) apply and their impact on costs
- any changes to the age profile of assets and the impact of those changes on replacement capital expenditure
- the reason for and costs of any major new projects such as transmission inter-connectors
- the extent and impact of deferrals in the previous regulatory period.

This information will assist stakeholders to understand differences between revealed capex outcomes and proposed capex. It will also contribute to our assessment of capex proposals. Guidance on the information requirements will be provided in our Reset Regulatory Information Notices.[1]

2.6 Ex ante modifications to the CESS

2.6.1 Application of the CESS to distribution network service provider's connections capex

Under chapter 5A of the NER, a DNSP has an obligation to connect customers. The elements of a DNSP's connections capex are influenced by volumes that can be difficult to accurately forecast. For this reason, we may apply a volumetric adjustment taking into account a DNSP's proposal for its business-as-usual ~~standard~~connections capex~~as default~~.

Business-as-usual connection refers to common connection types that may include simple or complex connections for residential, commercial & industrial, subdivision and embedded networks. In relation to these connection types, we expect DNSPs to propose capex based on socio-economic characteristics expected in forecast period. We consider that volume of connections is one of the main drivers of forecast capex, rather than applications for a single large bespoke connection.

In making the volumetric adjustment, we will consider changes in connections volume, for each business-as-usual connection type, so that a DNSP is not rewarded or penalised for changes in the volume of work it needs to undertake. In this scenario, we will exclude a portion of the connection capex related to the increases or decreases in volumes, for each business-as-usual connection type, from our CESS calculations when determining the relevant CESS payments. This is a symmetrical mechanism which responds to uncertainties in forecasting volumes.

[1] The information requirements will be set out in Reset RINS released from 2023.

This volumetric adjustment mechanism will only apply to connections capex that relate to 'business-as-usual' connections.[2] In determining the volumetric adjustments we will consider a DNSP's forecasts for connection sub-categories in its revenue determination process. We will also assess for any overlap between business-as-usual capex and large bespoke connections. As noted in section 2.8.1, DNSPs may identify and distinguish certain types of connections commercial and industrial connections as large bespoke connections.

We may ~~willwhether or not to~~ decide to not apply the volumetric adjustment for business-as-usual ~~standard~~ connections capex. In determining this, we will take into account the DNSP's proposal. In particular, we will have regard to the manner and the characteristics of its connections forecast methodology in making our constituent draft or final decision for the CESS.[3] Our default position is to apply the volumetric adjustments to a DNSP's business-as-usual ~~standard~~connection capex.

This adjustment does not extend to large bespoke connections. Please refer to section 2.8.1.[4]

~~2.5.1~~2.6.2 Application of the CESS to ~~large~~ transmission contingent projects, businesses with a single asset RAB, and REZ projects

Elements of capex are not recurrent and can be difficult to forecast using the revealed cost model. This is particularly true for ~~large~~ transmission contingent projects.

For this reason we may vary or not apply the CESS for transmission contingent project proposals submitted by TNSPs. For a transmission contingent project we may apply the CESS, not apply the CESS, or apply a CESS with a lower sharing factor than 30% ~~per cent~~.

If we vary the CESS for a transmission contingent project two CESS schemes will be required, one for the transmission contingent project and a second for all other capex. In this scenario CESS payments for the transmission contingent project would be solely based on under-or over-spending on the contingent project. We will determine whether or not to apply a separate CESS scheme for a transmission contingent project in response to TNSP proposals.

In determining whether or not to exclude, or vary, the application of the CESS to transmission contingent projects we will take into account:

- the TNSP's CESS and capital expenditure proposals
- benefits to consumers from the exemption
- the size of the project

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2 Business-as-usual connection refers to common connection types that may include simple or complex connections for residential, commercial & industrial, subdivision and embedded networks. In relation to these connection types, volume of connections is one of the main drivers of capex forecast, rather than an application for a single large bespoke connection.

3 NER, cll. 6.12.1(i) and 6A.14.1(5A).

4 Large bespoke connections, refer to non-business as usual emerging commercial & industrial connection types, including but not limited to grid connected batteries and data centres. These connection types will be based on DNSP's proposal. We generally consider large bespoke connections relate to individual large connection application.

- the degree of capital expenditure forecasting risk[5]
- stakeholder views.

Our default position is to apply the CESS and we will ~~be careful in~~ make~~ing~~ exclusions in only limited circumstances.

The AER may also vary, ~~or not apply,~~ the application of the CESS, or not apply the CESS, to businesses with a single asset in its RAB. In determining whether or not to exclude, or vary, the application of the CESS to businesses with a single asset in its RAB we will take into account the factors above.

Other state legislation, such as legislation relating to a renewable energy zone (REZ), may require the AER to make decisions about the application of the CESS – for example, a New South Wales REZ non-contestable determination made under the *Electricity Infrastructure Investment Act 2020 (NSW)* (EII Act). In these cases, the AER may decide to apply the CESS, or to vary the application of the CESS, or to not apply the CESS. In determining whether or not to apply the CESS, or to exclude or vary the application of the CESS, we will also take into account any additional considerations that are specific to the relevant jurisdictional framework.[6]

For the avoidance of doubt, businesses with a single asset in its RAB or businesses delivering REZ or other projects include a DNSP or intending network service provider.

~~2.6~~2.7 Adjusting for deferral of capex

In some circumstances, without an adjustment to the CESS, consumers may not share in the benefits where capex is deferred from one regulatory control period to the next regulatory control period. For instance, if an NSP's capex forecast for the next regulatory control period materially increases because capex was deferred in the current regulatory control period, an NSP's reward from deferring capex through the CESS, will likely exceed the benefit to consumers from the deferral.

To help consumers share in the benefits from deferred capex, we will make an adjustment to the CESS payments where an NSP has deferred capex in the current regulatory control period and:

1. the amount of the deferred capex in the current regulatory control period is material, and
2. the amount of the estimated underspend in capex in the current regulatory control period is material, and
3. total approved forecast capex in the next regulatory control period is materially higher than it is likely to have been if a material amount of capex was not deferred in the current regulatory control period.

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[5] Taking into account, for example, the extent to which a project is already outsourced and subject to contract terms. We will also have regard to amount we have allowed for contingency costs.

[6] For instance, in NSW REZ non-contestable determinations, there may be a need to consider additional factors on a case by case basis because of the differences between the NER and the NSW EII Act frameworks.

Where we determine such an adjustment will be made, we will reduce the CESS payments an NSP would have otherwise received in the next regulatory control period for capex underspends in the current regulatory control period.

The adjustment is the present value of the estimated marginal increase in forecast capex in the next regulatory control period attributable to capex deferred in the current regulatory control period. We will subtract this estimate from the total efficiency gain which is otherwise calculated in accordance with section 2.3.1 of theseis guidelines.

~~2.7~~2.8 Adjusting for an ex post exclusion ~~from the RAB~~

2.8.1 CESS adjustments following an ex post review

DNSPs

We consider that the volumetric adjustments to the CESS do not address the issue of individual large bespoke connections which do not have a standardised unit rate. For this reason, for a DNSP, we may reduce the CESS penalty arising from large bespoke connections, and the associated network augmentation, that have not been included in forecast capex.

DNSPs will need to demonstrate an efficient increase in large bespoke connections that have not been included in forecasted capex. In response to a DNSP's proposal, we may only reduce DNSP's CESS penalties associated with large bespoke connections, including any associated augmentation expenditure, to an extent that the increase exceeds a DNSP's total net capex forecast.

DNSPs bear the onus of identifying the large bespoke connections in its proposal for the upcoming regulatory control period. In some circumstances, there may be an overlap between business-as-usual connections and large bespoke connections. Therefore, DNSPs must also justify why some large bespoke connections have not been accounted for in the volumetric adjustment.

In response to the DNSP's proposal, the AER will determine whether or not to:

- accept the proposed connections are large bespoke connections, and
- reduce the CESS penalties following an ex post review for proposed large bespoke connections, and the associated augmentation expenditure.

Large bespoke connections refer to emerging commercial & industrial connection type, that were not accounted for as a business-as-usual connection type, including but not limited to grid connected batteries and data centres. These connection types will be based on the DNSP's proposal for the upcoming regulatory control period. We generally consider large bespoke connections relate to large connection applications.

TNSPs

We consider the standard application of the CESS may not recognise prudent and efficient increases to a TNSP's scope of works for circumstances beyond its control. TNSPs may be penalised for undertaking more projects than proposed in its relevant regulatory proposal, even where we may ultimately find these projects to be prudent and efficient in an ex post review.

In some circumstances, without an adjustment to the CESS, to avoid or reduce a CESS penalty a TNSP may inefficiently defer capex from one regulatory control period to the next regulatory control period. This may will result in a reduced service quality for consumers, and higher costs for consumers on the long term.

For this reason, we may vary the application of the CESS for certain projects in response to proposals submitted by TNSPs in limited circumstances, at AER's discretion. This may include reducing the penalties that we have applied, or would apply, to the TNSP under a CESS following an ex post review. We will adjust the amount to account for the time value of money.

TNSPs need to demonstrate an efficient and actual increase in the volume of work undertaken during the regulatory period. In determining whether to vary the application of CESS in response to TNSPs proposal, we will take into account:

- whether the proposed adjustments relate to projects that were not included in the TNSP's current period forecast
- ~~a comparison of the projects undertaken against projects forecasted for the relevant regulatory determination~~
- our findings in the relevant ex post review period
- whether the TNSP has demonstrated it has reasonably managed and prioritised its total capex
- the degree to which the overspend was due to factors beyond the TNSP's control
- other relevant factors

REZ and business with single asset RAB

There are elements of capex that may be harder to forecast for REZ projects and businesses with single asset RAB and there may be a limited ability for businesses in these cases to reprioritise and manage its total capex.

For this reason, we may in limited circumstances, at our discretion, make an adjustment to the CESS penalty for REZ projects, or other projects delivered under relevant jurisdictional frameworks, and businesses with single asset RAB. This may include reducing the penalties that we have applied, or would apply, to the NSP under a CESS following an ex post review. This would only apply where an ex post review provision exists in the relevant jurisdictional framework, and we undertook an ex post review that found that overspent capex is efficient. We will adjust the amount to account for the time value of money.

We will exercise our discretion on a case by case basis using factors set out in section 2.8.3 for reviewable ISP projects.

2.8.2 Adjustments for an ex post exclusion from the RAB

As discussed later in these~~is~~ guidelines, in certain circumstances we are able to exclude capex from the RAB. Where this occurs, we will adjust the CESS payments. Otherwise an NSP could bear more than 100% ~~per cent~~ of the cost of the excluded capex.

At the time of a revenue determination, we will calculate the CESS for the regulatory control period just ending. We will also undertake an ex post review (which could lead to exclusions from the RAB) at this time:

- for the first three years of the regulatory control period and the last two years of the regulatory control period preceding that for non-ISP projects for capex that is not related to actionable ISP projects, or a stage of an actionable ISP project; and
- for the period in which a TNSP has incurred capex in relation to an actionable ISP project, or stage of an actionable ISP project, that is substantially completed, for reviewable ISP projects.

Adjustments for ex post exclusions from the RAB for capex not related to actionable ISP projects, or a stage of an actionable ISP project

This sub section only relates to non-ISP projects

WWhere we exclude some capex incurred in year 1, 2 or 3 from the RAB, the CESS calculation will be different in that year. This involves a change to the general application of the scheme. Instead of calculating the efficiency gain as the capex allowance minus actual capex, we will substitute actual capex with actual capex minus the excluded capex. For example, where there is an ex post exclusion in year 1 of the regulatory control period the efficiency benefit will be calculated as follows:

> Year 1 efficiency benefit where there is an ex post exclusion in year 1 = capex allowance for year 1 – (actual capex in year 1 – ex post exclusion in year 1)

The adjustment will be different where we exclude capex from years 4 or 5 of the preceding regulatory control period. This is because the ex post review of capex in years 4 and 5 will occur at the end of the following regulatory control period. (That is, five years later for a five year regulatory control period.) At this later date we will adjust the RAB to remove the inefficient or imprudent capex. In doing so, we may need to reverse any net financing benefit the NSP receives in the period between when we first added the capex to the RAB and when we remove it at a later date.

At the same time we will adjust the CESS. To the extent that the NSP has already borne a CESS penalty on an amount of capex we later exclude from the RAB, we will need to remove this from the CESS in the following period. In particular, we will refund the NSP the penalty it has already borne under the CESS for the capex that we have excluded from the RAB. We will adjust the refund to account for the time value of money.

This sub section is applicable to capex that is not related to actionable ISP projects, or a stage of an actionable ISP project.

2.8.3 Adjustments for an ex post exclusion from the CESS calculations and the RAB for ISP projects

CESS adjustments for abandoned ISP projects

We consider there is a potential for unintended interaction between the abandonment of an ISP project and the CESS. An NSP may receive up to 30% of the value of the approved capex under the CESS despite an ISP project not proceeding.

For this reason, we may adjust the forecast and actual expenditure used in the CESS calculation to remove any CESS rewards an NSP may receive as result of abandoning an ISP project.

This subsection relates to all ISP projects and is not limited to reviewable ISP projects.

CESS adjustments for reviewable ISP projects

For reviewable ISP projects there are elements of capex that may be harder to forecast than non-ISP capex. Given the size of large individual projects, we acknowledge that there may also be a limited ability for TNSPs to reprioritise and manage its capex.

For this reason, we may in limited circumstances, at our discretion, make an adjustment to the CESS penalty for a reviewable ISP project. This may include reducing the CESS penalty that we have applied, or would apply, to the TNSP under a CESS following an ex post review for the reviewable ISP project. We will adjust the amount to account for the time value of money.

We will exercise our discretion on a case by case basis by taking into account the following factors:

- the form of CESS in place for the relevant project
- our findings in the relevant ex post review period
- whether the TNSP has demonstrated it has reasonably managed and prioritised its total ISP project capex
- the degree to which the overspend was due to factors beyond the NSP's control
- other relevant factors

This subsection only applies to reviewable ISP projects.

Adjustments for an ex post exclusion from the RAB for reviewable ISP projects

As set out in section 2.8.2, in certain circumstances we are able to exclude capex from the RAB. Where this occurs, we will adjust the CESS penalties. Otherwise, an NSP could bear more than 100% of the cost of the excluded capex.

For a reviewable ISP project, where we exclude some capex incurred in year 1, 2 or 3 from the RAB, the CESS calculation will be different in that year. We will apply the same mechanisms described in section 2.8.2.

The ex post review for reviewable ISP project ~~for an actionable ISP project, or actionable ISP project stage, capex~~ may extend beyond the 5 year period. The ISP project review period extends the ex post review period to encompass the whole period in which a TNSP has incurred capex on a reviewable ISP project. This could be over multiple regulatory control periods.

Therefore, where we adjust the RAB to remove the inefficient or imprudent capex beyond the 5 year period, we may need to reverse any net financing benefit the TNSP receives in the period between when we first added the capex to the RAB and the current regulatory control period.

At the same time we will adjust the CESS. To the extent that the TNSP has already borne a CESS penalty on an amount of capex we are excluding from the RAB in the current period,

we will adjust the CESS payments accordingly. In particular, we will refund the TNSP the penalty it has already borne under the CESS for the capex that we have excluded from the RAB. We will adjust the refund to account for the time value of money.

This subsection only applies to reviewable ISP projects.

2.8.4 Transitional arrangement

The transitional provision in clause 11.172.3 of the NER allows the AER to make a revenue adjustment to increase the maximum allowed revenue of a TNSP in the next regulatory control period by an amount that is equivalent to (or less than) the penalties that the AER has applied, or would apply, to the TNSP under a CESS following an ex post review for an ISP project. This adjustment can only be made to an extent that these guidelines allow, and the TNSP has provided written consent.[7]

For reviewable ISP projects already subject to a CESS at the time of release of version 4 of these guidelines, we may in limited circumstances, at our discretion, adjust the CESS penalties using the method set out in section 2.8.3 for CESS adjustments for reviewable ISP projects.

This subsection only applies to reviewable ISP projects.

[7] NER cll. 11.172.3(4).

3 Depreciation

When we roll actual capex into the RAB we also depreciate it. The type of depreciation used to roll forward the RAB will affect the incentives for efficient capex. Depreciation used to roll forward the RAB can be based on:

- actual capex incurred during the regulatory control period (actual depreciation), or
- the capex forecast at the start of the regulatory control period (forecast depreciation).

Using actual depreciation to roll forward the RAB provides stronger incentives for efficient capex compared to using forecast depreciation:

- If there is a capex overspend, actual depreciation will be higher than forecast depreciation. This means that the RAB will increase less at the next regulatory control period than it would if forecast depreciation were used. Hence, the NSP will earn less into the future (i.e. it will bear more of the cost of the overspend into the future) than if forecast depreciation had been used to roll forward the RAB.
- If there is a capex underspend, actual depreciation will be lower than forecast depreciation. This means that the RAB will increase more at the next regulatory control period than it would if forecast depreciation were used. Hence, the NSP will earn more into the future (i.e. it will retain more of the benefit of an underspend into the future) than if forecast depreciation had been used to roll forward the RAB.

3.1 Objective

The objective in deciding whether to use depreciation based on forecast capex or actual capex to roll forward the RAB is to ensure that the overall ex ante incentives for an NSP to undertake efficient capex are appropriate.

3.2 Rule requirements

Clauses S6.2.2B(a) and S6A.2.2B(a) of the NER provide us with flexibility to roll forward an NSP's RAB with either actual or forecast depreciation. Under clauses 6.4A(b)(3) and 6A.5A(b)(3) of the NER, we are required to include in theseis guidelines our process for determining which form of depreciation we propose to use in the RAB roll forward process.

Under clauses S6.2.2B and S6A.2.2B of the NER, our decision on whether to use actual or forecast depreciation must be consistent with the capital expenditure incentive objective. In making this decision, we must have regard to:

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

3.3 Approach

The depreciation approach is one part of the overall capex incentive framework. Where we apply a CESS, an NSP will already have incentives to pursue efficiency gains in relation to capex. Forecast depreciation would maintain these incentives whereas actual depreciation would increase these incentives. Actual depreciation can also result in different incentive powers for assets with different asset lives whereas forecast depreciation leads to the same incentive power regardless of the asset life.

Our default position 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
- an NSP's past capex performance demonstrates evidence of persistent overspending or inefficiency, thus requiring a higher-powered incentive.

In considering whether to apply actual depreciation in either of the above circumstances, we will consider:

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

4 Ex post measures for efficient capital expenditure

This chapter sets out our approach to ex post measures for incentivising efficient and prudent capex during a regulatory control period. There are two elements to this:

1. We are required to produce a statement on the efficiency and prudency of all capex that is to be rolled into the RAB (an ex post statement)
2. We may exclude certain types of capex from being included in the roll forward of the RAB.

4.1 Objective

The overarching objective of the ex post statement of efficiency and prudency is to provide information about the efficiency and prudency, or otherwise, of capex to be included in the RAB.

The objective of excluding certain types of capex from the RAB is to help ensure network users only pay for capex associated with providing network services which reasonably reflects the capital expenditure criteria.

4.2 Rule requirements

Clauses 6.12.2(b) and 6A.14.2(b) require us to include in any draft or final regulatory determination, a statement on the extent to which the roll forward of the RAB meets the capital expenditure incentive objective (defined in clauses 6.4A and 6A.5A). This statement will be for the regulatory control period just ending.

Clauses S6.2.2A and S6A.2.2A provide that in certain circumstances we may reduce the amount by which an NSP's RAB is to be increased as part of the RAB roll forward:

- where an NSP has spent more than its capex allowance,[8] we may exclude capex above the allowance from the RAB if it does not reasonably reflect the capital expenditure criteria
- where an NSP has incurred capex that represents a margin paid by the NSP, we may exclude that capex from the RAB where the margin refers to arrangements that do not reflect arm's length terms
- where an NSP's capex includes expenditure that should have been classified as opex as part of an NSP's capitalisation policy submitted to us as part of a regulatory proposal, we may exclude this from the RAB.

The relevant period over which this assessment is to occur is the first three years of the regulatory control period just ending and the last two years of the preceding regulatory control period. This differs from the period for the ex post statement and the CESS.

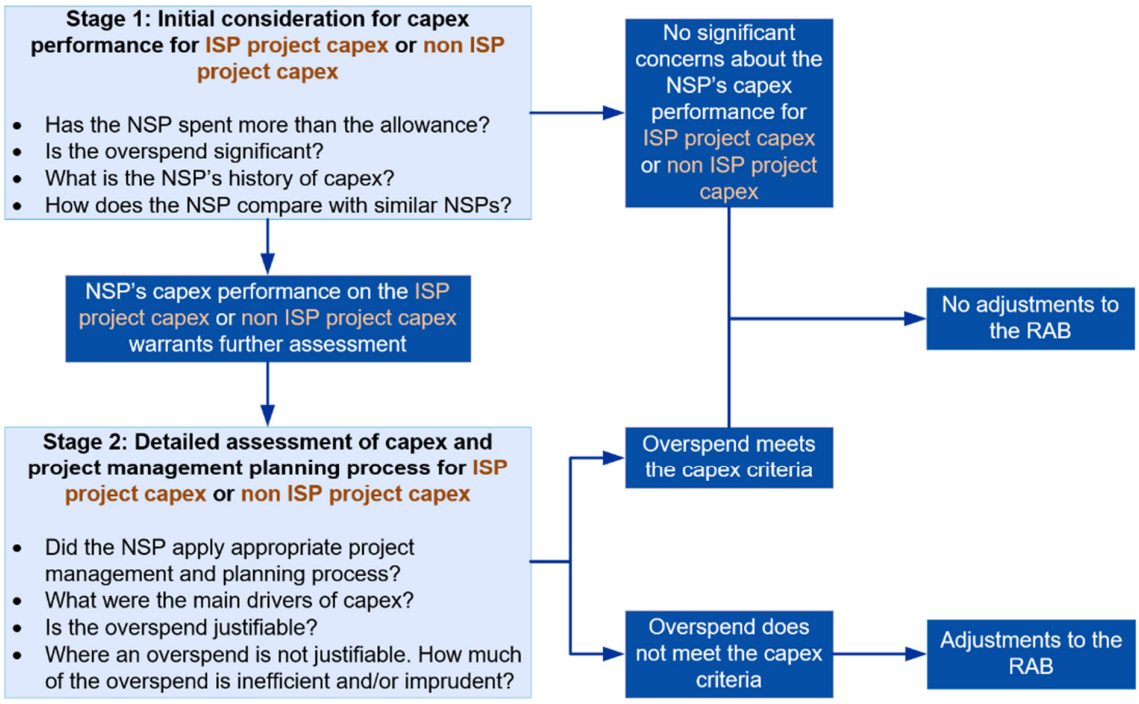
[8] Plus (or minus) any adjustments provided for under the reopening provisions, as a pass through or as a contingent project.

4.3 Ex post review process

We will undertake a staged process for the purpose of the ex post statement and for making any decisions on whether to exclude capex overspends from the RAB. We outline this process in Figure 1.

In undertaking this review we can 'only take into account information and analysis that the NSP could reasonably be expected to have considered or undertaken at the time that it undertook the relevant capital expenditure'.[9]

Figure 1 Staged process for ex post review



Our process for assessing the NSP's capex against the capital expenditure criteria involves two stages.

4.3.1 Stage 1

In the first stage we will consider the NSP's actual capex performance. The key questions are:

- Has the NSP overspent against its allowance?
- If so, is the overspend significant?
- What is the NSP's history of capex?

We will consider whether there is a cumulative overspend over the relevant period and the NSP's capex history. In investigating any overspend, we may consider the drivers of the overspend and whether these drivers were within the control of the NSP.

[9] NER, cll. S6.2.2A(h)(2) and S6A.2.2A(h)(2)

Where relevant, we may draw on high level benchmarking or other information to assess how the NSP has performed on capex relative to other similar NSPs. For example, if similar NSPs had faced the same exogenous factors then a comparison between the NSPs could indicate how well each NSP had responded to these factors. In addition, we could use benchmarking as a filter to identify the key drivers of capex which could be used to target our assessment in stage 2. We will most likely undertake these comparisons at a high level and will not conduct more detailed NSP specific analysis until stage two of the assessment process.

If, from this high-level assessment, we have no significant concerns about the NSP's capex performance over the relevant period, we may conclude that the NSP has been broadly efficient and prudent. In this case no further assessment of capex efficiency and prudency would be required. If we consider the NSP's capex performance warrants further assessment, and there has been a cumulative overspend over the relevant period, our assessment would progress to stage 2.

4.3.2 Stage 2

Stage 2 will involve a detailed assessment of the drivers of the NSP's capex and the NSP's management and planning tools and practices.[10] This will likely draw on the expertise of engineers and other external consultants.

In assessing the NSP's planning and management tools and processes, we will have regard to whether the NSP has applied:

- for major projects, a Regulatory Investment Test (RIT-D or RIT-T) that complies with the relevant guidelines
- appropriate project management plans and processes including asset management, project delivery controls, procurement strategies, asset lifecycle management, resourcing strategies, program management and risk management
- appropriate project governance and capital governance.

It will also be important to assess whether the NSP applied these plans, processes and governance arrangements in undertaking capex. One way in which NSPs could potentially demonstrate this would be to attain national or international accreditation in asset management.[11] In this assessment we could draw from any independent audits undertaken as part of an NSP's asset management and planning processes.

In assessing an NSP's capex drivers, we could consider:

- the findings of any independent audit undertaken as part of an NSP's asset management and planning processes
- repex and augex models to assess replacement and augmentation capex

[10] The detailed assessment is not limited to a specific category where an NSP has overspent. We may assess prudency and efficiency of all categories if an ex post review is triggered.

[11] The United Kingdom standard for asset management (PAS 55) is soon to become an international standard (ISO 55000). OFGEM requires PAS 55 accreditation for all distribution network service providers in Great Britain.

- a sample of customer connections, or a benchmark of customer connections for multiple small connections
- any changes to demand that could have influenced capex outcomes
- IT capex
- indicators of service performance
- case-by-case or project-by-project assessments of other projects.

Once we have identified the capex drivers and we have assessed the NSP's management and planning processes, we will consider:

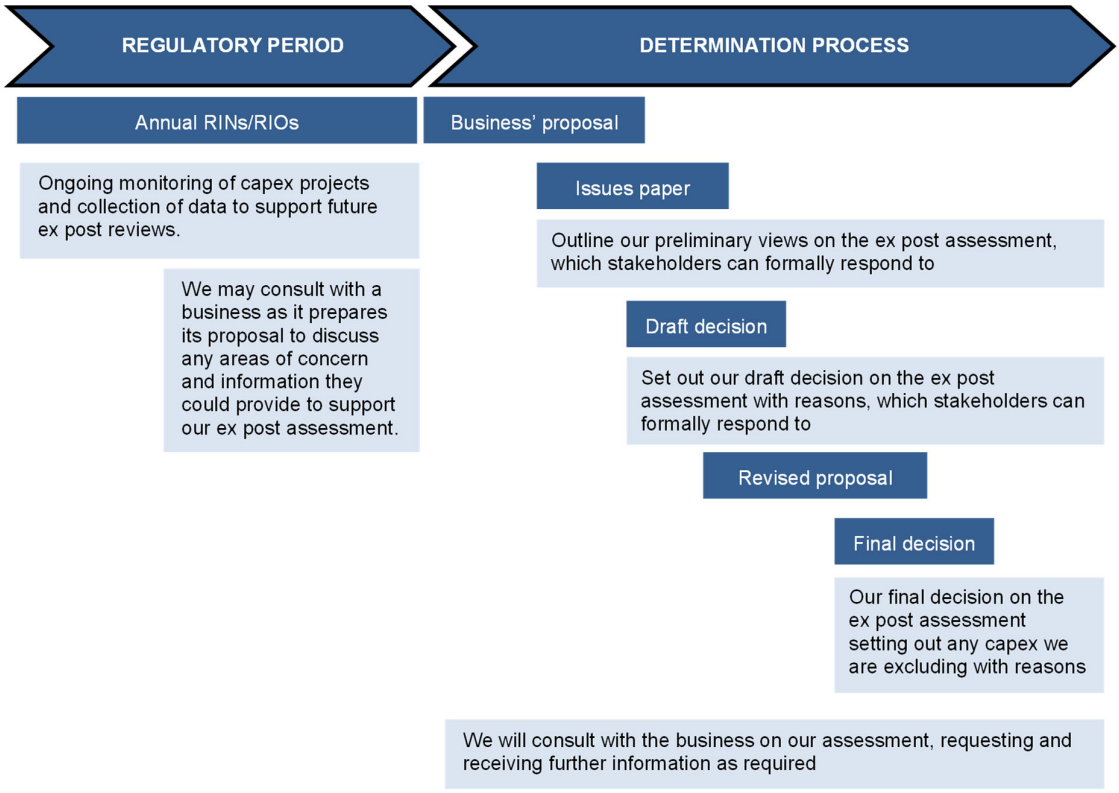
- whether the NSP's reasons for the capex overspend are justifiable
- whether there are any other reasons that mitigate the NSP's level of overspend
- whether the NSP has followed appropriate processes and procedures in undertaking its capex to ensure it spent only the efficient and prudent level of capex required.

Once we have undertaken this analysis (using a similar methodology to how it undertakes this analysis ex ante) we will form an opinion on what aspects of the NSP's capex are efficient and prudent and what aspects of the NSP's capex are not efficient and prudent.

4.3.3 Stage 1

We may consult with NSPs and assess data collected in RINs/RIOs and annual benchmarking reports during the period prior to the formal determination process to gather information for the ex post review. Following the NSP's submission of its regulatory proposal, we will outline our preliminary views on the ex post review in an issues paper published as part of the determination process. We will undertake the ex post review process and set out our decision in the draft determination. We will consult with NSPs at each stage of the process and stakeholders may respond to the issues paper and draft decision. Our final decision on the ex post review will be in our final determination. This process is outlined in Figure 2.

Figure 2 How the ex post review aligns with the determination process



4.3.4 Ex post review for reviewable ISP projects

We must undertake separate targeted ex post reviews for actionable ISP project capex and non ISP project capex.[12] Effectively, for reviewable ISP projects, our ex post review assessment and determination will be solely based on overspending on the relevant actionable ISP project capex, or actionable ISP project stage capex, rather than total capex.

We will undertake the ex post review using the staged process as described in this section. However, this ex post review is triggered when an actionable ISP project, or a stage of an actionable ISP project, is substantially complete.

Our ex post review for an actionable ISP project, or a stage of an actionable ISP project, will consider capex incurred by a TNSP during the ISP project review period. The ISP project review period is the whole period in which a TNSP has incurred capex on an actionable ISP project, or a stage of an actionable ISP project, that is substantially completed. This could be over multiple regulatory control periods.

In concluding whether an actionable ISP project, or a stage of an actionable ISP project, is substantially completed we will take into account the following factors:

[12] NER cl S6A2.2A(f).

1. Whether the completed works and costs incurred on the actionable ISP project, or stage of an actionable ISP project, are a sufficient representation of the likely overall capex outcome. For example, if the substantially complete project is expected to not meet the overspending requirement, is this still likely to be the case once the whole project is completed?
2. Whether the TNSP expects to incur additional construction costs related to the actionable ISP project, or a stage of an actionable ISP project, or whether the only remaining works are associated with commissioning and energising the assets for the relevant actionable ISP project, or stage of an actionable ISP project.
3. Whether the estimated future capex of the remaining works for the relevant actionable ISP project, or a stage of an actionable ISP project, and any cost variations, will be immaterial (as assessed by the AER on a case by case basis).
4. Whether the remaining works are expected to be completed, and the costs expected to be incurred, before the AER has completed its final determination.

In putting forward a proposal, TNSPs should therefore seek to demonstrate that an actionable ISP project, or a stage of an actionable ISP project, is substantially complete by reference to these factors.

4.4 Exclusion of capex from the RAB

There are three cases in which we may exclude capex from the RAB:

1. when an NSP has overspent, the amount of capex above the allowance that does not reasonably reflect the capital expenditure criteria can be excluded from the RAB
2. where there is an inflated related party margin, the inflated portion of the margin can be excluded from the RAB
3. where a change to an NSP's capitalisation policy has led to opex being capitalised, the capitalised opex can be excluded from the RAB.

Our decision on whether to exclude capex from the RAB will be informed by any assessment we undertake (e.g. ex post review) and other requirements of the NER.

For all capex not related to actionable ~~reviewable~~ISP projects, or a stage of an actionable ISP project, i~~I~~f we exclude any of the above categories of capex, this capex will not be included in the RAB for years 1, 2 and 3. For overspent capex in years 4 and 5, we will make the adjustment to the RAB one regulatory control period later. At this time we will take into account the amount of capex that was included in the RAB previously, and the NPV adjustment required to ensure the NSP does not retain any revenue through the RAB from capex that does not meet the capital expenditure criteria.

For overspent capex on actionable ISP projects, or stage of an actionable ISP projects, if we exclude any of the above categories of capex, this capex will not be included in the RAB for years 1, 2, 3 of the relevant regulatory control period For overspent capex incurred in a previous regulatory control period, we will also exclude some or all of this amount taking into account the amount of capex that was included in the RAB previously, and also taking into account the NPV adjustment required to ensure the TNSP does not retain any revenue through the RAB from capex that does not meet the capital expenditure criteria.

We may also need to adjust the CESS as discussed in section 2.~~6~~8 of these~~is~~ guidelines.

We discuss the particular processes for assessing whether exclusions are required on the basis of a change to an NSP's capitalisation policy or for inflated related party margins below.

4.4.1 Capitalisation policy changes

This issue is only relevant where an NSP's incentives for capex and opex are not balanced. If the incentive power to undertake efficient capex is the same as the incentive power to undertake efficient opex it does not matter whether expenditure is classified as capex or opex. For example, assume an NSP is subject to a CESS and an EBSS, both lead to a power of 30% ~~per cent~~. If an NSP capitalises opex it will benefit by 30% ~~per cent~~ through the EBSS but the 30% ~~per cent~~ penalty from the CESS offsets this. Hence, there will be no net difference and there is no need to consider whether an NSP has changed its capitalisation policy. In this scenario, we will roll into the RAB whatever the NSP has classified as capex at the time of the roll forward of the RAB (subject to this meeting other relevant requirements under the ex post review). Hence, our first consideration is whether the NSP's incentives for capex and opex are relatively balanced.

Where the incentives for opex and capex are not balanced, we will consider whether:

- an NSP has changed its capitalisation policy during the current regulatory control period, and
- whether opex has been reclassified as capex due to those changes.

To determine this, we will require the following information from NSPs as part of the regulatory determination process:

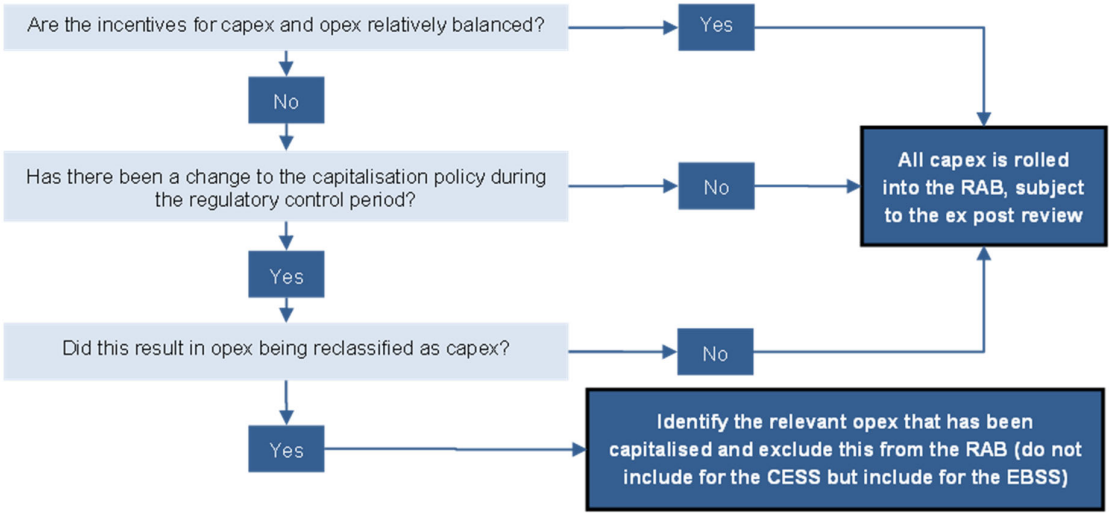
- details of any changes made to the NSP's capitalisation policy during the regulatory control period and the impact of these changes
- details of any opex that has been capitalised as a result of the changes to the capitalisation policy.

We may also require the NSP to provide details of its capitalisation of expenditure as part of the annual Regulatory Information Notice/Regulatory Information Order process, including a statement of its capitalisation policy with auditor's sign-off.

Where we identify that opex has been capitalised as a result of a change to the NSP's capitalisation policy (where the incentives for capex and opex are not balanced), we will exclude the corresponding expenditure from the RAB. For the purposes of calculating the payment due under the EBSS, this expenditure will count as opex. This process is shown in Figure 3.

In all other instances we will roll forward the RAB for the NSP's entire capex spend (subject to this meeting the relevant requirements under the ex post review).

Figure 3 Process for assessing capitalisation policy changes



4.4.2 Related party margins

This assessment is only relevant where a related party provides services to an NSP, and a cost margin is included in the contract.

When rolling forward the RAB, our decision on whether to accept a related party margin will depend on whether the contractual arrangements have changed during the regulatory control period.

If the contractual arrangement with the related party has not changed during the regulatory control period, then we will only allow into the RAB the related party margin we approved at the time of the determination.

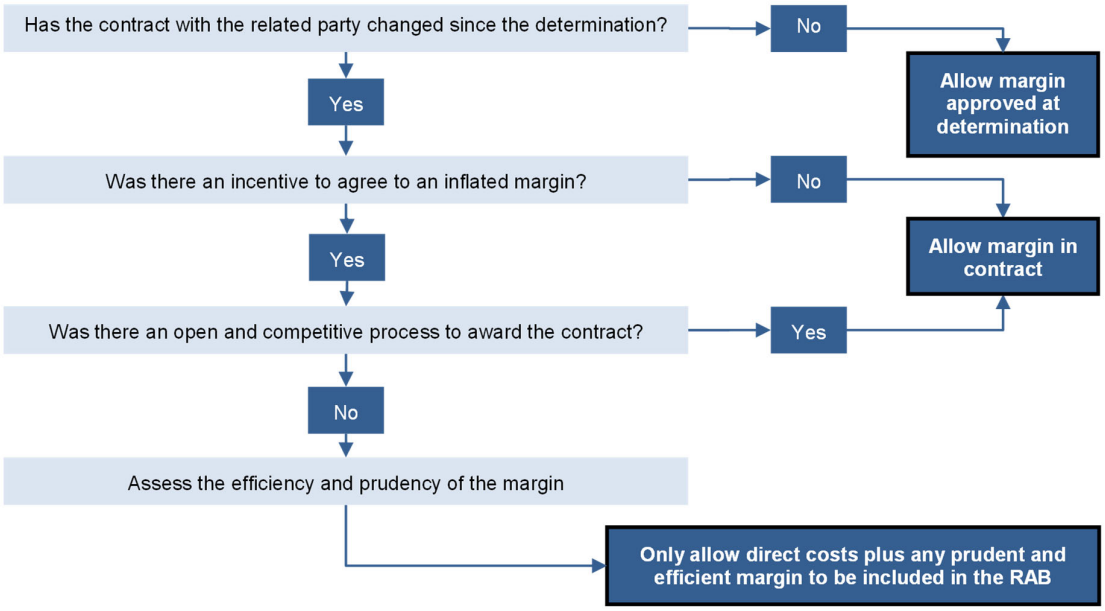
If the contractual arrangements have changed during the regulatory control period, we will undertake another assessment of the related party margin. This involves a two-stage process. The first stage is a 'presumption threshold' test in which we consider the following:

- Did the NSP have an incentive to agree to non-arm's length terms when it negotiated the contract (or at its most recent re-negotiation)?
- If yes, did the NSP conduct a competitive open tender process in a competitive market?

If the answer to the first question is no or the answer to the second question is yes, the related party margin passes the presumption threshold. In these circumstances, we will assume that the contract price (including any associated margin above direct costs) reflects prudent and efficient costs, and we will roll the total contract price into the RAB.

Where the contractual arrangement fails the presumption threshold, we will consider whether the total contractual cost is prudent and efficient. We will only roll into the RAB the margin above the external provider's direct costs shown to be prudent and efficient by this assessment. We show this process in Figure 4.

Figure 4 Process for assessing related party margins



4.5 Ex post statement

As part of a regulatory determination for the regulatory control period just ended, we will make an ex post statement drawing on the ex post review process outlined above. It will coincide with the roll forward of the RAB undertaken as part of a regulatory determination.

The period for the ex post statement is the regulatory control period. This differs from the ex post exclusion period which covers:

- ~~-~~years 1, 2 and 3 of the regulatory control period just ending and years 4 and 5 of the regulatory control period preceding that ~~for non-ISP projects~~ for capex that is not related to actionable ISP projects, or a stage of an actionable ISP project; and
- the period in which the capex was incurred for an actionable ISP project, or a stage of an actionable ISP project, that is substantially completed, for reviewable ISP projects.

While we will use the same ex post review process for the ex post statement and the ex post exclusion assessment, it is likely that the process will be more detailed for the years in which the ex post exclusion provisions apply.

5 How these measures are consistent with the capital expenditure incentive objective

Under clauses 6.4A(b) and 6A.5A(b) the NER, these~~is~~ guidelines must set out how the above schemes and proposals, both individually and taken together, are consistent with the capital expenditure incentive objective.

The capital expenditure incentive objective is given by clauses 6.4A(a) and 6A.5A(a) of the NER:

> The capital expenditure incentive objective is to ensure that, where the value of a regulatory asset base is subject to adjustment in accordance with the Rules, then the only capital expenditure that is included in an adjustment that increases the value of that regulatory asset base is capital expenditure that reasonably reflects the capital expenditure criteria.

The capital expenditure criteria are contained in clauses 6A.6.7(c) and 6.5.7(c) of the NER and require that capex should reflect:

- the efficient costs of achieving the capital expenditure objectives
- the costs that a prudent NSP would require to achieve the capital expenditure objectives
- a realistic expectation of the demand forecast, cost inputs and other relevant inputs required to achieve the capital expenditure objectives.

The capital expenditure objectives are contained in clauses in 6.5.7(a) and 6A.6.7(a) of the NER:

(a) A building block proposal must include the total forecast capital expenditure for the relevant regulatory control period which the Distribution Network Service Provider [TNSP] considers is required in order to achieve each of the following (the capital expenditure objectives):

1) meet or manage the expected demand for standard control services over that period;

2) comply with all applicable regulatory obligations or requirements associated with the provision of standard control services;

3) maintain the quality, reliability and security of supply of standard control services;

4) maintain the reliability, safety and security of the distribution system through the supply of standard control services; and

5) contribute to achieving emissions reduction targets through the supply of standard control services.

A discussion of how the measures outlined in these~~is~~ guidelines, both individually and taken together, are consistent with the capital expenditure incentive objective, is provided below.

5.1 The Capital Expenditure Sharing Scheme

The CESS provides NSPs with an ex ante incentive to spend only efficient and prudent capex. The CESS rewards NSPs that make efficiency gains. Conversely, the CESS penalises NSPs that make efficiency losses. In this way, NSPs will be more likely to incur only efficient capex when subject to a CESS. This should assist in ensuring that any capex included in the RAB reflects the capex criteria. In particular, if an NSP is subject to the CESS, its capex is more likely to be efficient and will reflect the costs of a prudent NSP.

5.2 Depreciation

If an NSP is already subject to the CESS and there is no evidence of persistent overspending or inefficiency, we will use forecast depreciation to roll forward the RAB. Alongside the operation of the CESS, this will ensure that an NSP faces clear and equal incentives for efficient and prudent capex irrespective of the type of asset and when the capex occurs.

Where a CESS does not apply, or stronger incentives are required, using actual depreciation to roll forward the RAB would strengthen an NSP's incentives for efficient and prudent capex. In both scenarios an NSP will have incentives to ensure their capex is efficient and reflects the costs that a prudent NSP would incur.

5.3 Ex post statement and exclusions from the RAB

Our ability to exclude capex from the RAB ex post is central to the capital expenditure incentive objective. In particular, we will be able to assess whether capex overspends have met the relevant capital expenditure criteria. If not, we can exclude these costs from the RAB. In addition, the ability to exclude inflated related party margins and capitalised opex will ensure that consumers do not pay for these costs where they do not reflect the capital expenditure criteria.

5.4 Depreciation

The application of the CESS alongside forecast depreciation will provide NSPs with clear ex ante incentives to ensure they spend only efficient and prudent capex. Where these measures are not sufficient, we may choose to strengthen the ex ante incentives by using actual depreciation to roll forward the RAB. In this way we have a number of tools we can apply ex ante to incentivise efficient capex.

The ex post measures outlined in these~~is~~ guidelines complement~~s~~ the ex ante measures. In particular, if an NSP has not responded to the ex ante incentives, we will still have the ability to review the NSP's actual capex. Where an NSP has overspent, we can exclude the overspend from the RAB where it does not meet the capital expenditure criteria.

In this way, these~~is~~ guidelines provide~~s~~ a suite of measures to incentivise NSPs to undertake only efficient and prudent capex. Individually, and collectively, these are consistent with the capital expenditure incentive objective.

Glossary

Term	Definition
AER	Australian Energy Regulator
augex	Augmentation expenditure
capex	Capital expenditure
CESS	Capital Expenditure Sharing Scheme
EBSS	Efficiency Benefit Sharing Scheme
guidelines	Capital Expenditure Incentive Guidelines
NER	The National Electricity Rules as defined in the National Electricity Law.
NSP	Network Service Provider
opex	Operating expenditure
RAB	Regulatory asset base
repex	Replacement expenditure
RIN	Regulatory Information Notice
RIO	Regulatory Information Order
RIT-D	Regulatory Investment Test - Distribution
RIT-T	Regulatory Investment Test - Transmission
WACC	Weighted Average Cost of Capital

Appendix A: Capital expenditure sharing scheme example 20% underspend

This appendix provides a worked example of how the CESS would work where a network has underspent 20% of its $500 million capex allowance. Numbers other than percentages are in millions of dollars.

Real Discount rate:	3.0%				
Nominal Discount rate:	5.6%				
Year	1	2	3	4	5
Capex allowance	100	100	100	100	100
Actual capex	80	90	90	70	70
Underspend	20	10	10	30	30
Year 1 benefit		0.59	0.61	0.62	0.64
Year 2 benefit			0.28	0.29	0.30
Year 3 benefit				0.29	0.30
Year 4 benefit					0.98
Year 5 benefit					
Total financing benefit	0.00	0.59	0.89	1.21	2.21
Discount factor (end of year)	1.24	1.18	1.11	1.06	1.00
NPV underspend	24.56	11.14	10.82	34.45	33.45
NPV financing benefit	0.00	0.70	0.99	1.27	2.21

Total underspend (NPV)	114.43
Relevant sharing ratio for overspend or 10% underspend	30%
Relevant sharing ratio for portion greater than 10% underspend	20%
Weighted average sharing ratio	25%
Customer share	85.82
NSP share	28.61
Total NSP financing benefit (NPV)	5.18
CESS benefit	23.43

Appendix B: Capital expenditure sharing scheme example 10% underspend

This appendix provides a worked example of how the CESS would work where a network has underspent 10% of its $500 million capex allowance. Numbers other than percentages are in millions of dollars.

Real Discount rate:	3.0%				
Nominal Discount rate:	5.6%				
Year	1	2	3	4	5
Capex allowance	100	100	100	100	100
Actual capex	90	90	90	90	90
Underspend	10	10	10	10	10
Year 1 benefit		0.28	0.28	0.29	0.30
Year 2 benefit			0.28	0.29	0.30
Year 3 benefit				0.29	0.30
Year 4 benefit					0.30
Year 5 benefit					
Total financing benefit	0.00	0.28	0.57	0.87	1.19
Discount factor (end of year)	1.24	1.18	1.11	1.06	1.00
NPV underspend	11.48	11.14	10.82	10.50	10.20
NPV financing benefit	0.00	0.33	0.63	0.92	1.19

Total underspend (NPV)	54.15
Relevant sharing ratio for overspend or 10% underspend	30%
Relevant sharing ratio for portion greater than 10% underspend	20%
Weighted average sharing ratio	30%
Customer share	37.90
NSP share	16.24
Total NSP financing benefit (NPV)	3.08
CESS benefit	13.17