DRAFT DECISION
Australian Gas Networks Victoria and Albury gas access arrangement 2018 to 2022

Attachment 9 – Efficiency carryover mechanism

July 2017

AUSTRALIAN ENERGY REGULATOR

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Note

This attachment forms part of the AER's draft decision on the access arrangement for AGN's Victoria and Albury gas distribution networks for 2018–22. It should be read with all other parts of the draft decision.

The draft decision includes the following documents:

Overview

Attachment 1 - Services covered by the access arrangement

Attachment 2 - Capital 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

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Attachment 10 - Reference tariff setting

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Attachment 14 - Other incentive schemes

Contents

Shortened forms

Shortened form	Extended form
AER	Australian Energy Regulator
ATO	Australian Tax Office
capex	capital expenditure
CAPM	capital asset pricing model
CESS	Capital Expenditure Sharing Scheme
CPI	consumer price index
DRP	debt risk premium
ECM	(Opex) Efficiency Carryover Mechanism
ERP	equity risk premium
Expenditure Guideline	Expenditure Forecast Assessment Guideline
gamma	Value of Imputation Credits
MRP	market risk premium
NGL	National Gas Law
NGO	national gas objective
NGR	National Gas Rules
NPV	net present value
opex	operating expenditure
PTRM	post-tax revenue model
RBA	Reserve Bank of Australia
RFM	roll forward model
RIN	regulatory information notice
RPP	revenue and pricing principles
SLCAPM	Sharpe-Lintner capital asset pricing model
STTM	Short Term Trading Market
TAB	Tax asset base
UAFG	Unaccounted for gas
WACC	weighted average cost of capital
WPI	Wage Price Index

9 Efficiency carryover mechanism

An efficiency carryover mechanism provides an additional incentive for service providers to pursue efficiency improvements in operating expenditure (opex). It is often used in incentive regulation.

To encourage a service provider to become more efficient, it is allowed to keep any difference between its approved opex forecast and its actual opex in an access arrangement period. This is supplemented by the efficiency carryover mechanism, which provides that the service provider benefits from efficiency gains and is penalised by efficiency losses over a longer period. In total these rewards and penalties work together to provide a continuous incentive for a service provider to pursue efficiency gains over the access arrangement period. The efficiency carryover mechanism also discourages a service provider from inflating its opex in the expected base year for the following access arrangement period because this could lead to higher forecast opex for that period.

Consumers benefit from any efficiency gains made by the service provider as we base our opex forecast for the next access arrangement period on the service provider's lower revealed opex. This is how efficiency improvements are shared between consumers and the business.

An efficiency carryover mechanism applied to AGN's Victoria network and its Albury network during the 2013–17 access arrangement period. AGN proposed an efficiency carryover mechanism apply to the joint network in the 2018–22 access arrangement period.

9.1 Draft decision

Our draft decision is to approve carryover amounts of $18.1 million ($2017) for AGN's Victorian network and $1.0 million ($2017) for its Albury network, from the application of their efficiency carryover mechanisms in the 2013–17 access arrangement period. AGN's proposal was based on an estimate of its opex for 2016, which we have updated with actual opex (as contemplated in AGN's proposal). As a result, the carryover amount approved in this draft decision is $7.0 million ($2017) less than AGN proposed for its Victorian network and $0.4 million ($2017) less than it proposed for its Albury network.

Our draft decision on the carryover amounts for the Victorian network is set out in Table 9.1.

Table 9.1 Our draft decision on the Victorian network's carryover amounts ($ million, $2017)

	2017	2018	2019	2020	2021	Total
AGN's proposed carryover—Victoria	14.8	6.4	4.4	–0.4	–	25.1
Draft decision—Victoria	11.6	5.1	3.1	–1.8	–	18.1
Difference	**–3.1**	**–1.2**	**–1.3**	**–1.3**	**–**	**–7.0**

Source: AER analysis. Numbers may not add up due to rounding.

Our draft decision on the carryover amounts for the Albury network is set out in Table 9.2.

Table 9.2 Our draft decision on the Albury network's carryover amounts ($ million, $2017)

	2017	2018	2019	2020	2021	Total
AGN's proposed carryover—Albury	1.3	0.1	0.2	–0.1	–	1.4
Draft decision—Albury	1.3	–0.0	0.0	–0.3	–	1.0
Difference	**0.1**	**–0.1**	**–0.2**	**–0.2**	**–**	**–0.4**

Source: AER analysis. Numbers may not add up due to rounding.

We accept AGN's proposal to retain an efficiency carryover mechanism for the 2018–22 access arrangement period, which will reflect the combined opex forecast for the two pipelines. However, we have amended AGN's proposed efficiency carryover mechanism to reflect improvements included in the efficiency benefit sharing scheme (EBSS) we released in November 2013 for electricity service providers.[1] Importantly, the amendments will give AGN flexibility in the choice of base year it uses to forecast opex in the following period. We have also:

- reduced the number of cost categories we will exclude from the mechanism
- removed fixed principle C because we have not yet determined the form of any incentive mechanism that will apply in the access arrangement period expected to commence 1 January 2023.

Table 9.3 sets out our draft decision on the approved opex forecast we will use to calculate efficiency gains and losses for the combined networks in the 2018–22 access arrangement period. We will update these amounts in our final decision to reflect our final decision on forecast opex. These amounts are also subject to adjustments permitted by the efficiency carryover mechanism.

[1] AER, *Efficiency Benefit Sharing Scheme for Electricity Network Service Providers*, November 2013, pp. 7–9.

Table 9.3 Approved forecast opex for the efficiency carryover mechanism ($ million, 2017)

	2016	2017	2018	2019	2020	2021	2022
Approved forecast opex	**64.4**	**64.7**	**66.3**	67.0	**67.7**	**68.6**	**69.6**

Note: Excludes debt raising costs.

9.2 AGN's proposal

9.2.1 Carryover amounts from the 2013–17 access arrangement period

For its Victorian network, AGN proposed a $25.1 million ($2017) carryover be added to its revenue in the 2018–22 access arrangement period.[2] For its Albury network it proposed a $1.4 million ($2017) carryover be added.[3]

AGN used the equations set out in clause 5.1 of both 2013–17 access arrangements to calculate its annual efficiency gains (or losses) in each year.

In estimating its proposed carryover amounts, AGN excluded the following costs from its actual opex:

- license fees
- Energy Safe Victoria levy
- debt raising costs
- network management fee
- incentive fees.[4]

9.2.2 Application of the efficiency carryover mechanism in the 2018–22 access arrangement period

AGN proposed an efficiency carryover scheme would apply to its combined networks in the 2018–22 access arrangement period subject to specific exclusions.

It proposed we exclude the following cost categories from the scheme:

- costs associated with complying with retailer of last resort requirements
- approved cost pass through amounts

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2 AGN, *Access arrangement proposal 2018–22, Attachment 1.5 Victoria RIN – 23.4 Opex incentive mechanism*, December 2016.

3 AGN, *Access arrangement proposal 2018–22, Attachment 1.6 Albury RIN – 23.4 Opex incentive mechanism*, December 2016.

4 AGN, *Access arrangement proposal 2018–22, Attachment 1.5 Victoria RIN – 23.4 Opex incentive mechanism*, December 2016.

- unaccounted for gas expenses
- licence fees
- Energy Safe Victoria levy
- debt raising costs
- network management fee
- incentive fees
- movements in provisions
- approved network innovation scheme (NIS) expenditure
- any other activity that we and AGN agree to exclude from the operation of the efficiency carryover mechanism.

It also proposed we adjust approved forecast opex to account for changes in capitalisation policy.[5]

9.3 Our assessment approach

An efficiency carryover mechanism is a form of incentive mechanism. A full access arrangement may include (and we may require it to include) one or more incentive mechanisms to encourage efficiency in the provision of services by the service provider.[6] An incentive mechanism must be consistent with the revenue and pricing principles.[7]

We consider the following revenue and pricing principle is most relevant for assessing AGN'S proposed efficiency carryover mechanism:

> A service provider should be provided with effective incentives in order to promote economic efficiency with respect to reference services the service provider provides.
>
> The economic efficiency that should be promoted includes:
>
> (a) efficient investment in, or in connection with, a pipeline with which the service provider provides reference services
>
> (b) the efficient provision of pipeline services
>
> (c) the efficient use of the pipeline.[8]

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5 AGN, *Access arrangement for our Victorian and Albury natural gas distribution networks 1 January 2018 to 31 December 2022* (proposed access arrangement), December 2016, p. 23.

6 NGR, r. 98(1).

7 NGR, r. 98(3).

8 NGL, s. 24(3).

Under the NGR we have full discretion in our decision as to whether to apply an incentive scheme.[9]

9.3.1 Interrelationships

The efficiency carryover mechanism is intrinsically linked to our opex revealed cost forecasting approach. Under our revealed cost forecasting approach we base our forecast on a service provider's audited actual opex in a single year. When we assess a service provider's proposed carryover, we have regard to whether it is consistent with its proposed approach to forecasting opex for the following period.

9.4 Reasons for draft decision

9.4.1 Carryover amounts from the 2013–17 access arrangement period

We consider AGN should receive a carryover of $18.1 million ($2017) from the application of the efficiency carryover mechanism to its Victorian network and $1.0 million ($ 2017) to its Albury network during the 2013–17 access arrangement period.

The carryover amount we calculated is $7.0 million ($2017) less than the carryover AGN proposed for its Victorian network and $0.4 million ($2017) less than the carryover it proposed for its Albury network. The difference is primarily because AGN's proposal was based on an estimate of its opex for 2016, which we updated with actual opex (as contemplated in AGN's proposal).

Other drivers of the difference between our calculation of the carryover and AGN's are:

- AGN did not adjust its approved opex forecast to reflect the actual change in the scale of its activities
- AGN incorrectly reported approved forecast opex in 2011
- we include the 2011 inflation rate.

We discuss each of these issues below.

Updating estimated opex for 2016 with actuals

At the time AGN submitted its proposal it did not have audited opex for 2016. So its proposed carryover amount was calculated using estimated opex for 2016. Since then, AGN submitted audited opex for 2016 which we used in our calculations. Because the audited opex was higher than AGN's estimate, this reduced its carryover by around $5.0 million ($2017). We note the revenue impact of the higher opex in 2016 will be largely offset when AGN updates its opex forecast in its revised proposal.

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[9] NGR, r. 40(3).

Adjustment to the approved opex forecast to reflect actual change in scale

AGN's access arrangement for 2013–17 requires that efficiency carryovers be calculated in a manner that takes account of any change in the scale of the activities which form the basis of the determination of the original benchmarks.[10] Further, the opex benchmarks should be adjusted consistently with the way we determined the benchmarks. This requires AGN's approved forecast opex be recalculated to reflect actual output growth rather than the forecasts of output growth we used to determine forecast opex for the 2013–17 access arrangement period. AGN did not follow these requirements.

Consequently, we measured output growth for the current access arrangement period based on actual rather than forecast customer numbers. This reduced the forecast opex we used to calculate efficiency carryovers.

Technical errors

AGN did not correctly report the approved forecast opex for 2011 in its calculation, as specified in its current access arrangement.[11] Correcting this reduced its carryover amount by around $1.0 million ($2017).

We corrected the model template to include the inflation annual rate for 2011. We needed this to convert actual opex for 2011 into $2017.

9.4.2 The opex incentive mechanism to apply in the 2018–22 access arrangement period

We approve the application of an efficiency carryover mechanism to the combined networks in the 2018–22 access arrangement.

An efficiency carryover mechanism is required to provide AGN with a continuous incentive to pursue efficiency gains during the 2018–22 access arrangement period. It will also provide AGN with an incentive not to increase its reported opex in the expected base year, given we typically rely on reported opex in a single year to forecast opex.

We have amended AGN's proposed efficiency carryover mechanism to reflect improvements included in the efficiency benefit sharing scheme (EBSS) we released in November 2013 for electricity service providers.[12] The amendments will give AGN flexibility in the choice of base year it uses to forecast opex in the following period. We have also reduced the number of cost categories we will exclude from the mechanism and removed fixed principle C. This is because we have not yet determined the form of

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10 AER, *Access arrangement for Envestra's Victorian gas distribution system 2013 – 2017,* April 2013, p. 17, clause 4.13(11)(b).

11 AER, *Access arrangement for Envestra's Victorian gas distribution system 2013 – 2017*, April 2013, p. 17.

12 AER, *Efficiency Benefit Sharing Scheme for Electricity Network Service Providers*, November 2013.

any incentive mechanism that will apply in the access arrangement period expected to commence 1 January 2023.

The EBSS is consistent with the revenue pricing principles and we designed it taking into account the interactions with our revealed opex forecasting approach.[13]

Revised equations consistent with the EBSS

The efficiency mechanism AGN proposed is similar to the EBSS for electricity service providers. The key difference is that the EBSS provides greater flexibility.

The equations proposed by AGN assumed it will use revealed opex in 2021 to forecast opex for the following period.[14] We have amended the equations to provide AGN with the flexibility to choose any base year.

These revisions reflect the equations in the EBSS for electricity service providers we released in November 2013.[15]

Exclusions from the operation of the efficiency carryover mechanism

AGN proposed a number of adjustments and exclusions to forecast and actual opex when calculating carryover amounts.

We agree the following adjustments and exclusions will contribute to AGN being rewarded (penalised) for genuine efficiency gains (losses):

- adjust forecast opex for approved cost pass through amounts
- exclude movements in provisions from actual opex
- any other activity AGN and we agree to exclude from the operation of the efficiency carryover mechanism.

We discuss AGN's other proposed adjustments and exclusions below.

Costs associated with complying with RoLR requirements

AGN proposed that the costs of complying with any retailer of last resort (RoLR) requirements be excluded from the operation of the efficiency carryover mechanism.

We consider there is no need to exclude costs of complying with RoLR requirements from the efficiency carryover mechanism because if a RoLR event occurs, AGN will be able to apply for a cost pass through and forecast opex will be adjusted accordingly.

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13 AER, *Efficiency Benefit Sharing Scheme for Electricity Network Service Providers*, November 2013.

14 AGN, *Access arrangement for our Victorian and Albury natural gas distribution networks 1 January 2018 to 31 December 2022* (proposed access arrangement), December 2016, p. 21, clause 5.1(c).

15 AER, *Efficiency Benefit Sharing Scheme for Electricity Network Service Providers*, November 2013.

In this draft decision we include a Network User Failure Event as a defined cost pass through event for AGN (see attachment 11). This event covers costs incurred by AGN when a user becomes insolvent or is unable to supply gas to its customers. Consequently, there would be no need to exclude costs of complying with RoLR requirements from the efficiency carryover mechanism. This is because clause 5.1(h) of the revised access arrangement indicates the forecast opex amount for each year of the applicable access arrangement period will be adjusted to include any determined pass through amounts.

Amounts for approved cost pass through events

We agree that we should adjust the efficiency carryover calculation to account for approved cost pass through events.

However, we consider that adjusting the opex forecast ex post rather than removing the costs from actual opex is the simplest way to account for approved cost pass through events. We have included this in clause 5.1(h) in our revisions.

Unaccounted for gas expenses

We agree that, should we continue to forecast unaccounted for gas expenses in the same way, we should continue to exclude them from the efficiency carryover mechanism. We exclude these costs because we do not forecast them based on the expenses revealed in a single year. Consequently the access arrangement does not need to explicitly exclude these costs because the access arrangement will exclude costs not forecast using a single year revealed cost approach for the next regulatory period (commencing 1 January 2023). Nonetheless, we have listed unaccounted for gas expenses in the access arrangement as an example of costs not forecast using a single year revealed cost approach. Should these costs be forecast on a different basis in the future we will reconsider whether they should be excluded, taking into account the basis on which they are forecast.

Licence fees

In the 2013–17 access arrangement period, AGN recovered the costs of its annual licence fees payable to Essential Services Commission of Victoria through a licence fee factor in its tariff control formula.[16] For this reason we excluded these costs from the efficiency carryover mechanism in the current access arrangement period.

In its 2018–22 access arrangement proposal, AGN again proposed a licence fee factor in the Tariff Variation Mechanism.[17] However, for the reasons we explain in attachment 7, we will exclude the licence fee factor from the tariff variation formula for the 2018–22 access arrangement period. We have also included these costs in base

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16 AER, *Access arrangement for Envestra's Victorian gas distribution system 2013 – 2017*, April 2013, pp.37–38.

17 AGN, *Final Plan Access Arrangement Information for our Victorian and Albury natural gas distribution networks: 2018 to 2022*, December 2016, p.172.

opex and thus we have forecast them as part of total opex using a single year revealed cost approach. Given this, we consider there is no basis for excluding these costs from the efficiency carryover mechanism in the 2018–22 access arrangement period.

Debt raising costs

We agree debt raising costs should be excluded from the efficiency carryover mechanism. However, we consider debt raising costs fall in the clause that excludes all costs not forecast using a single year revealed cost approach in the access arrangement period following the 2018–22 access arrangement period. We have listed debt raising costs as an example of costs not forecast using a single year revealed cost approach in the access arrangement.

Allowable network innovation scheme expenditure

AGN included a network innovation scheme in its access arrangement for the 2018–22 period. As we have rejected the proposed scheme in this draft decision (discussed in attachment 14) there is no need to exclude allowable network innovation scheme expenditure from the efficiency carryover mechanism. Regardless, there would be no need to explicitly exclude allowable network innovation scheme expenditure because we would not forecast it using a single year revealed cost approach.

Changes in capitalisation policy

We do not accept that the efficiency carryover mechanism should take into account changes in AGN's capitalisation policy in all circumstances. Given the operation of the capital expenditure sharing scheme, AGN will have balanced incentives to reduce opex and capex in most circumstances.[18] However, it may be necessary to take into account changes in AGN's capitalisation policy in limited circumstances, to provide effective incentives to promote economic efficiency.

We will adjust the efficiency carryover mechanism to reflect capitalisation policy changes only when it is necessary to provide effective incentives to promote economic efficiency. This would be the case where AGN fails to meet its network health target, and as a result would not receive any reward it may have accrued under the capital expenditure sharing scheme.

It is important to consider the incentives that service providers may have to capitalise expenditure. If they are not balanced then service providers may have an incentive to substitute opex with capex even if it is not efficient to do so. Ideally service providers should be indifferent between spending a dollar of opex and spending a dollar of capex. This is consistent with the revenue and pricing principles, which require that service providers should be provided with effective incentives to promote economic efficiency.[19]

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[18] We discuss applying a capital expenditure incentive scheme in attachment 14 of this draft decision.

[19] NGL, s. 24(3).

The clause proposed by AGN is included in its current access arrangement. However, it is important to note that where AGN was not subject to a capital expenditure sharing scheme in the current access arrangement period, it will be subject to a capital expenditure sharing scheme in the 2018–22 access arrangement period (see attachment 14). The application of the capital expenditure sharing scheme should provide AGN with a similar incentive to reduce capex as it does to reduce opex. When the capital expenditure sharing scheme applies to AGN, accounting for capitalisation policy changes in the efficiency carryover mechanism, but not in the capital expenditure sharing scheme, would provide AGN an incentive to substitute capex with opex even when it is not efficient to do so. This would not be consistent with the revenue and pricing principles.[20]

We do note that the capital expenditure sharing scheme that will apply to AGN is contingent. If AGN does not meet a specified network health target it will not receive rewards under the capital expenditure sharing scheme. However, it will be liable for penalties it accrues under the scheme regardless of network health performance. Consequently, if AGN fails to meet its network health target, and has accrued a reward under the capital expenditure sharing scheme (which it will not receive) it will have an incentive to substitute opex with capex if we do not adjust for capitalisation policy changes in the efficiency carryover mechanism.

Opex not forecast using a single year revealed cost approach for the next regulatory period

Three factors drive the incentive to reduce opex:

1. the ex-ante approved total opex forecast
2. the opex efficiency carryover mechanism
3. how actual opex is used to forecast opex in future access arrangement periods.

We typically forecast opex based on audited actual opex reported for a single year. The efficiency carryover mechanism is designed on the basis that opex is forecast in this way. However, service providers may not forecast opex using a single year revealed cost forecasting method. This could be at an overall level or category level. For example, a service provider may use a bottom up forecasting approach or use industry benchmarks. Service providers may have a number of reasons to propose alternative forecasting approaches. If such an alternative approach is used, efficiency gains and losses will be shared differently between the service provider and its customers. There is a risk the efficiency carryover mechanism may provide windfall gains or losses to a service provider.

To address this, we have inserted a clause allowing us to exclude any cost category that is not forecast using a single year revealed cost approach in the access arrangement period intended to commence 1 January 2023.

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[20] NGR, r. 98(3).

Energy Safe Victoria levy, network management fee, incentive fees

The Energy Safe Victoria levy, network management fees and incentive fees are included in base opex and we have forecast them as part of total opex using a single year revealed cost approach. Consistent with clause 5.1(g)(ii) below, we consider there is no basis for excluding these costs from the efficiency carryover mechanism in the 2018–22 access arrangement period.

Removal of proposed fixed principle C

AGN proposed that the principle in clause 5.1(e) of its proposed access arrangement should be a fixed principle (fixed principle C).[21] However, we do not agree.

Proposed fixed principle C relates to how an efficiency carryover mechanism would apply in just one year of the access arrangement period expected to commence 1 January 2023. However, we have not yet determined whether an opex incentive mechanism should apply in the access arrangement period expected to commence 1 January 2023 or what form it should take. Given this, we require AGN to remove both clauses from the access arrangement:

- clause 4.7.3 which sets out fixed principle C
- clause 5.1(e) which sets out the calculation of the carryover amount for the first year of the access arrangement period expected to commence 1 January 2023.

9.5 Revisions

We require the following revisions to make the access arrangement proposal acceptable:

Revision 9.1: Remove clause 5.1 of the proposed access arrangement and replace it with the following text:

5.1 Efficiency carryover mechanism

An efficiency carryover mechanism will apply to operating expenditure.

The incentive mechanism will operate in the following way:

i. the mechanism carries forward AGN's incremental efficiency gains (or losses) for five years from the year those gains (or losses) occur;

ii. annual carryover amounts accrue in each year of the subsequent access arrangement period as the summation of the incremental efficiency gains (or

[21] AGN, Access arrangement for our Victorian and Albury natural gas distribution networks 1 January 2018 to 31 December 2022 (proposed access arrangement), December 2016, p. 18, clause 4.7.3.

losses) in the immediately prior access arrangement period that are carried forward for five years or less into the year; and

iii. the annual carryover amounts are added to AGN's total revenue in each Year of the subsequent access arrangement period. If necessary, the annual efficiency gain (or loss) is carried forward into the access arrangement period commencing 1 July 2021 until it has been retained by the Service Provider for a period of five years.

(a) The incremental efficiency gain (loss) for 2018 will be calculated using:

$$I_{2018} = (F_{2018} - A_{2018}) - [(F_{2017} - A_{2017}) - (F_{2016} - A_{2016})]$$

where

I_{2018} is the incremental efficiency gain (loss) for 2018.

F_{2018} is the approved forecast opex for 2018.

A_{2018} is the actual opex for 2018.

F_{2017} is the approved forecast opex for 2017.

A_{2017} is the actual opex for 2017.

F_{2016} is the approved forecast opex for 2015.

A_{2016} is the actual opex for 2015.

(b) The incremental efficiency gain (or loss) for 2019 to 2022 (inclusive) will be calculated using:

$$I_i = (F_i - A_i) - (F_{i-1} - A_{i-1})$$

where

I_i is the incremental efficiency gain in year i of the access arrangement period.

F_i is the approved forecast opex in year i of the access arrangement period.

A_i is the actual opex in year i of the access arrangement period.

F_{i-1} is the approved forecast opex in year I – 1 of the access arrangement period.

A_{i-1} is the actual opex in year I – 1 of the access arrangement period.

(c) Actual opex in the final year, 2022, of the access arrangement period is to be estimated using:

$$A^*_{2022} = F_{2022} - (F_b - A_b) + \ non\text{-}recurrent\ efficiency\ gain_b$$

where

A^*_{2022} is the estimate of opex for 2022.

$F_{2022}$is the approved forecast opex for 2022.

$F_b$is the approved forecast opex for the base year used to forecast opex in the access arrangement period following this access arrangement.

A_b is the actual opex for the base year used to forecast opex in the access arrangement period following this access arrangement.

$non\text{-}recurrent\ efficiency\ gain_b$ is the adjustment made to base year opex used to forecast opex for the access arrangement period expected to commence 1 July 2021 to account for opex associated with one-off factors.

(d) To ensure efficiency gains or losses made in 2022 are retained for five years, opex for the access arrangement period commencing 1 January 2023 should be forecast in a manner consistent with the estimate for opex in 2022, A^*_{2022}, in paragraph (c) above. This provides the Service Provider the same reward had the expenditure level in 2022 been known.

(e) The incremental efficiency gains (or losses) are carried over from year to year in real dollars to ensure that these gains (or losses) are not eroded by inflation. The price indices used in this calculation are to be consistent with those used to forecast opex for the Sixth Access Arrangement Period.

(f) Increments or decrements from the summation of incremental efficiency gains or losses calculated in accordance with the approved incentive mechanism in the Access Arrangement Period will give rise to an additional 'building block' in the calculation of the Total Revenue amounts for each year of the subsequent access arrangement period.

(g) The following costs will be excluded from the operation of the efficiency carryover mechanism:

i. movements in provisions

ii. any cost category that is not forecast using a single year revealed cost approach in the access arrangement period following this Access Arrangement Period (intended to commence 1 January 2023). These costs may include, debt raising costs and unaccounted for gas expenses

iii. any other activity that the Service Provider and the Regulator agree to exclude from the operation of the efficiency carryover mechanism.

(h) The approved forecast opex amount for each year of the Applicable Access Arrangement Period will be adjusted to include any Determined Pass Through Amounts or other AER approved expenditure arising from Cost Pass Through Events which apply in respect of that year

(i) For the avoidance of doubt, the forecast expenditure amounts that are used as the basis for measuring efficiencies are equal to the approved forecast opex for that year as shown in the table below, which exclude the costs listed in clause 5.1(h)(i)–(iii).

Approved forecast opex for the efficiency carryover mechanism ($ million, 2017)

	2016	2017	2018	2019	2020	2021	2022

Approved forecast opex	**64.4**	**64.7**	**66.3**	67.0	**67.7**	**68.6**	**69.6**

Note: Excludes debt raising costs.

Revision 9.2: Remove clause 4.7.3, which sets out Fixed Principle C.