Jemena Gas Networks (NSW) Ltd

2020-25 Access Arrangement Proposal

Attachment 7.11

Incentive schemes

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Abbreviations

AA	Access Arrangement
AER	Australian Energy Regulator
API	Asset Performance Index
Capex	Capital Expenditure
CBA	Cost Benefit Analysis
CCP	Consumer Challenge Panel
CESS	Capital Expenditure Sharing Scheme
CP	Contingent Payment
DNSPs	Distribution Network Service Providers
EBSS	Efficiency Benefit Sharing Scheme
ECA	Energy Consumers Australia
ECM	Efficiency Carryover Mechanism
GDBs	Gas Distribution Businesses
NGL	National Gas Law
NGR	National Gas Rules
NPV	Net Present Value
Opex	Operating expenditure
PIAC	Public Interest Advisory Centre
RAB	Regulated Asset Base
SAIDI	System Average Interruption Duration Index
SAIFI	System Average Interruption Frequency Index
STPIS	Service Target Performance Incentive Scheme

Overview

This document sets out the incentives schemes that we are proposing for the 2020-25 Access Arrangement (**AA**) period, and how engagement we have undertaken with our customers and key stakeholders has informed our plans.

The regulatory framework incentivises us to find more efficient ways of delivering our services, which ultimately benefits customers in the form of lower bills. Incentive schemes give us temporary rewards—increases in revenue for performing well—and penalties—reduction in revenue—if we don't. The schemes are designed to pass the benefits of improved efficiency to customers, over time. In this way, incentive schemes are an effective mechanism for promoting the long-term interests of customers.

The National Gas Rules (**NGR**) allow network businesses such as JGN to propose incentive mechanisms to encourage efficiency in the provision of services. The AER may also impose such schemes of network businesses. The incentives schemes must be consistent with the revenue and pricing principles in the NGR.[1]

As part of the 2020-25 AA, we are proposing to:

- retain the Efficiency Carryover Mechanism (**ECM**), but modified for some minor changes; and
- introduce a Capital Expenditure Sharing Scheme (**CESS**).

These schemes will contribute to plans to improve JGN's long term cost-competitiveness, and will facilitate us in delivering a safe and reliable gas service at an affordable price that our customers expect.

In developing our CESS proposal, we sought input from consumer representatives, the AER and its Consumer Challenge Panel (**CCP**). The CESS that we are proposing considers feedback that we have received by ensuring that it focusses on providing incentives for the part of the capital expenditure (**capex**) program that is within JGN's control (e.g. by excluding new connection related capex).

[1] Rule 98, NGR.

1. Efficiency Carryover Mechanism

1.1 ECM currently applies under the 2015-20 Access Arrangement

We are currently subject to an operating expenditure incentive scheme, which is commonly referred to as an Efficiency Carryover Mechanism (**ECM**). The scheme provides us with a continuous incentive to identify and deliver improvements to operating expenditure efficiency. Any savings that we make are shared with our customers in a ratio of approximately 70% (customers): 30% (JGN).

As a result of our performance against this incentive scheme, we will either receive a reward or penalty in our revenue for the following regulatory period. In other words, our performance in the current regulatory period impacts the amount of revenue we receive in the next regulatory period.

We are forecasting additional revenue of $62M over the 2020-25 AA period under this incentive scheme as our share of improvements made in the current regulatory period.

In March 2019, we submitted an application to the Australian Energy Regulator (**AER**) to modify the ECM that it approved in its remade decision on JGN's 2015-20 Access Arrangement.[2] In the application, we sought to amend the formula of the ECM, to allow us to remove one-off costs from the base year operating expenditure (**opex**) for the forthcoming regulatory period. This modification to the ECM brought it into line with the latest version of the AER's Efficiency Benefit Sharing Scheme (**EBSS**) for Electricity Network Service Providers and other Gas Distribution Business (**GDBs**) equivalent incentive mechanism. On 8 April 2019 the AER approved the variation to the ECM.[3] The ECM is included within clause 12 of the Access Arrangement, and is a fixed principle for the next two access arrangement periods.[4]

1.2 What our customers have told us

Affordability was one the key themes that arose throughout our customer engagement program. Our customers told us that they enjoy using gas, and want it to remain cost-competitive over the long term.

We believe that retaining the ECM for the 2020-25 AA period is consistent with the feedback from our customers, and in their long-term interests as it will incentivise us to deliver ongoing operating cost efficiencies, and remain cost competitive.

In our Draft 2020 Plan, we asked stakeholders for their views on our plans to retain the ECM for the 2020-25 AA period. We did not receive any specific feedback on our plans to retain the ECM.

1.3 ECM for the 2020-25 Access Arrangement Period

We believe that retaining the EBSS is consistent with the revenue and pricing principles in the NGR as it incentivises efficient investment in opex programs while providing JGN with a reasonable opportunity to recover at least its efficient operating costs through the adjustment for specified uncontrollable costs.

For the 2020-25 AA period, we are not proposing any significant changes to the ECM, but have proposed the following minor changes:[5]

2 Access Arrangement JGN's NSW gas distribution networks 1 July 2015 – 30 June 2020 [June 2015], Incorporating revisions required by AER, 28 February 2019.

3 AER, *Re: Application to revised Jemena Gas Networks' (JGN's) 2015-20 Access Arrangement*, 8 April 2019

4 NGR, rule 99(1) permits a full access arrangement may include a principle declared in the access arrangement to be fixed for a stated period.

5 NGR, rule 99(4) permits the AER to vary a fixed principle at any time with the service provider's consent.

- an adjustment is made to the calculation of the 2020-21 incremental efficiency gain (or loss) to allow for impact of one-off factors that result in non-recurrent cost increase/decrease in the base year (2018-19) to fully harmonise the mechanism to the version of the EBSS developed by the AER. [6]
- updating paragraph (h)(vii) so that any cost category not forecast using a single year revealed cost approach in the AA period following the 2020-25 AA period will be automatically excluded from the operation of the ECM consistent with other gas business' AA, such as AusNet Services and MultiNet 2018-22 AA. We have also included a catch-all for costs otherwise agreed with the AER to be excluded.
- to ensure consistent treatment of expenditure across the CESS (discussed in Section 2) and ECM, we have deleted paragraphs 12.1(j) and (k) from the ECM, which dealt with changes to the classification of costs as either capex or opex during the AA period.[7]

[6] AER, Efficiency Benefit Sharing Scheme for Electricity Distribution Network Service Providers, November 2013, para 1.3.2.

[7] The CESS we are proposing as part of the 2020-25 AA is modelled on the CESS which the AER recently approved for both AGN and Multinet, and it does not have an equivalent requirement to make adjustments to capitalisation policy changes. To maintain consistency with the AER's approved CESS scheme, we have removed this requirement from the ECM.

2. Capital Expenditure Sharing Scheme

2.1 Overview

We are proposing a capex efficiency incentive mechanism as an additional incentive scheme in our AA proposal for the 2020-25 AA period. This will ensure that all of our expenditure is covered by incentive schemes and better support outcomes aligned to our customers' long-term interests.

Such a mechanism currently applies to the four gas distribution businesses (**GDBs**) in Victoria and Albury and all electricity networks in the National Electricity Market. It is referred to as a capital expenditure sharing scheme (**CESS**).

In developing our CESS proposal, we sought input from consumer representatives, the AER and its Consumer Challenge Panel (**CCP**). The CESS that we are proposing considers feedback that we have received by ensuring that it focusses on providing incentives for the part of the capital expenditure (**capex**) program that is within JGN's control (e.g. by excluding new connections related capex).

This chapter explains the design of the proposed CESS, which has been informed by both the prior CESS designs approved by the AER and our stakeholder engagement on fit-for-purpose refinements to reflect JGN's relevant circumstances. The CESS is included as Clause 13 of our proposed AA. Sub-clause 13.2 states that the CESS is subject to a fixed principle, as is done for the ECM in Clause 12—which means that the CESS remains in force into the 2025-30 AA period.

Attachment 7.12 is an illustration of how the proposed CESS—including the contingent payment factor—would work using dummy service performance and expenditure data.[8]

The chapter is structured as follows:

- Section 2.2 outlines how we have engaged with our customers and stakeholders about our CESS proposal and design, and what we heard
- Section 2.3 explains the nature and purpose of a CESS and how the CESS for the Victorian GDBs works
- Section 2.4 discusses the relevant rule requirements, and how the objectives of our proposal and our design approach have ensured compliance with these requirements
- Section 2.5 proposes the CESS design in three parts – the CESS mechanism, the contingency payment index and the contingent payment factor – explaining how we have addressed customers feedback relevant to each part.

2.2 What our customers have told us

2.2.1 How we engaged

Our CESS proposal is consistent with the key findings from our engagement leading up to our Draft 2020 Plan—our customers told us they expect us to plan for an uncertain future. Our Draft 2020 Plan therefore committed to:

- continue implementing Jemena's gas market strategy pillar of establishing a long-term sustainable cost structure
- support inter-generational equity by finding ways to reduce growth in our asset base to help ensure long term price competitiveness of gas.

[8] We started with the CESS model adopted by the AER for Ausgrid in its April 2019 decision and amended it to reflect the variations that we propose, including for the contingent payment index.

Consistent with these commitments, our Draft 2020 Plan flagged that we would look to introduce a CESS and would engage with interested stakeholders on the design of the CESS prior to lodgement. The Draft 2020 Plan explained that:

> *As part of our 2020 Plan, we intend to propose a CESS. We believe that this is in the long term interests of consumers as it will help us to further improve our efficiency, keeping a downward pressure on bills. This strategy also forms part of our strategic response to the uncertain future for gas.* [9]

The Draft 2020 Plan asked:

> *What are your views on our proposal to adopt a Capital Expenditure Incentive Scheme?*
>
> *What factors should we take into account in applying the scheme to our NSW network?*[10]

We have since engaged with the Public Interest Advisory Centre (**PIAC**), Energy Consumers Australia (**ECA**), the AER and the Consumer Challenge Panel (**CCP**) on the design of the CESS, including in relation to the categories of capex over which it should apply, and the service performance measures to measure network health.

Our CESS engagement chronology over 2019 was:

- *Draft 2020 Plan* | In January we released our Draft 2020 Plan for feedback, including on our proposal to introduce a CESS and to engage further on how to do so. It set out:
  - why we think a CESS would benefit our customers
  - our thinking that the AER-approved Victorian gas CESS could be adapted to apply in NSW
  - our initial CESS engagement questions
- *Deep dive workshop* | In February our Draft 2020 Plan deep dive workshop explained:
  - what a CESS involves and why
  - areas where the contingent payment mechanism can be made fit-for-purpose for our network and to deal with customer concerns
  - how we will engage on this to refine and finalise our proposal
- *CESS consultation paper* I In March we published a CESS consultation paper (provided at **Appendix A**) which explained the design of the proposed CESS. It highlighted engagement questions throughout the paper and sought feedback on options for service performance monitoring that could be incorporated within the CESS to ensure that:
  - capex efficiencies are not achieved at the expense of service performance
  - the performance being monitored relates to matters that are important to our consumers.
- *CESS stakeholder workshop* | In April we held a customer and stakeholder workshop on CESS design. The workshop had two objectives:
  - inform stakeholders about the Victorian gas CESS design that JGN proposes to adopt and the reasons for this
  - involve stakeholders in identifying what would be fit-for-purpose service performance measures to include in the CESS contingent payment mechanism or other modifications from the version applying to the Victorian GDBs.

[9] JGN, Draft 2020 Plan, p. 79, January 2019.

[10] JGN, Draft 2020 Plan, p. 79, January 2019.

In advance of the workshop, the ECA, PIAC and CCP jointly provided a list of questions arising from the consultation paper which we discussed and addressed in the workshop, along with going through each of the engagement questions raised in the consultation paper.

2.2.2 What we heard

The CESS workshop was our richest source of CESS feedback. It was attended by:

- 3 customer representatives from the CCP, ECA and PIAC
- 4 AER staff and 1 AER technical advisor
- 6 Jemena executives and managers
- 2 advisors from farrierswier who facilitated the workshop on behalf of JGN and ran the consultation and CESS design work for the four GDBs in Victoria.

2.2.2.1 Summary of workshop outcomes

Adopting the common elements of the AER's electricity CESS guideline and Victorian GDBs' CESS was seen as an acceptable starting point.

The areas of departure from this were:

1. Fit-for-purpose contingent payment index measure and weighting selection – as foreshadowed in JGN's consultation paper and the workshop agenda
2. The question of whether all capex should be included in the CESS or just that which was seen to be sufficiently within JGN's control.

In terms of fit for purpose contingent payment (**CP**) index design, the workshop outcomes were:

- *CP measure selection* | The workshop attendees discussed the measures, their historical performance, data robustness and link to capex. The outcome was agreement to the six measures proposed by JGN, with any residual concerns about whether the measures are sufficiently linked to capex within JGN's control to be addressed through the weights.
- *Weights* | The logic and method behind JGN's option 3 for program aligned weights was unanimously supported, with a request that JGN refine this to lessen the weighting on measures that link to metering assets (namely meter leaks and meter read estimation).[11]

On the question of whether the CESS apply to all capex, there was strong and consistent support for the CESS to only apply to things within JGN's control. It was seen as more reasonable to ask customers to fund incentives that apply only to matters that JGN can reasonably be expected to manage. The capex category which parties thought JGN should consider excluding was new connections related capex, because this was seen to be driven by market forces for both volumes and unit rates.

2.3 What is a CESS?

This section explains the nature and purpose of a CESS and how the CESS for the Victorian GDBs works.

[11] JGN presented three weighting options in the consultation paper (which is included as Appendix A). Option 1 applied equal weighting for each measure (16.7%); option 2 had the same weightings for as option 1, except for mains and services leaks and meter leaks, which were weighted based on RAB value; option 3 applied weightings for each measure which reflect how closely our performance against the six measures is linked to our proposed capex program.

2.3.1 Nature of a CESS

A CESS mechanism compares a business' actual (and, where necessary, estimated) capex to the efficient forecasts the AER has approved for that period. This operates in a similar way to the ECM discussed above.

Based on the calculated difference from the 2020-25 AA period, the allowed revenues in the subsequent AA period (i.e. the 2025-30 AA period) are either increased to reward capex underspends or decreased to penalise capex overspends.

We provide more detail in section 2.5 below about the mechanics of a CESS.

2.3.2 Benefits of a CESS

A CESS increases a business' capex incentives by allowing (or requiring) it to retain (or incur) 30% of any under (or over) spend within an AA period. By extension, consumers receive (or incur) the remaining 70%.

A CESS therefore:

- strengthens a business' incentives to reduce its capex and regulated asset base (**RAB**) growth—it provides financial rewards for reducing capex and penalties for overspending
- creates a constant, or smoothed, incentive across an AA period—as noted, in the absence of a CESS, a business has a greater incentive to reduce its capex early in an AA period[12]
- balances incentives across opex and capex, as it provides similar incentives as the ECM for opex.[13]

In this way, a CESS should give the AER and consumers greater confidence that a business' actual capex is efficient. This, in turn, should:

- reduce the risk of (and need for) the AER to make ex-post capex adjustments
- increase the AER's ability to have regard for actual capex in setting forecast capex allowances.

2.3.3 Current Victorian GDBs' CESS

The AER accepted the Victorian GDBs' proposal to introduce a CESS in their current AA period, 2018 to 2022. The following was relevant context to the AER's decision:

- The AER had introduced a CESS for the electricity Distribution Network Service Providers (**DNSPs**), following the release of its 'Capital Expenditure Incentive Guideline for Electricity Network Service Providers' in November 2013. So, there was precedent for the AER applying a CESS for other network service providers.
- The GDBs had large underspends on their allowed mains replacement capex.
- The AER wanted to include performance measures in the CESS that mapped to the Victorian GDBs' capex forecasts so that they couldn't reduce their capex at the expense of service performance.
- The GDBs did not have (and were not proposing) a service target performance incentive scheme (**STPIS**) of the kind that applies to the electricity DNSPs.
- The GDBs engaged with their stakeholders on the CESS who supported its introduction.

[12] If a service provider makes an efficiency gain in the first year of a five year regulatory control period any benefit will last for four more years before the RAB is updated for actual capex. In the final year however, the benefit will be approximately zero.

[13] The AER explained and justified each of these benefits of a CESS in its Draft and Final Decisions for the Victorian GDBs.

The CESS that the AER introduced for the Victorian GDBs had three key components: 1) the CESS mechanism, 2) the contingent payment factor, and 3) an asset performance index (i.e. the equivalent of our contingent payment index).

2.3.3.1 CESS mechanism

The purpose of the CESS mechanism is to make CESS benefits contingent on the Victorian GDB's service performance, using a sliding scale. It provides that, if average performance (measured using an asset performance index) is below target, then any CESS benefits would reduce—potentially down to zero.

The CESS mechanism, subject to the contingent payment factor, operates as follows:

- 30% of the net present value (**NPV**) of any within period under (over) spend net of financing benefit (cost) is added to (removed from) the GDB's allowed revenues in the next AA period
- The CESS ensures that under (over) spends are split so consumers receive (pay) 70% and businesses receive (pay) 30%

The scheme applies to capex net of contributions and disposals, similar to the electricity CESS. The scheme adjusts for material capex deferrals and ex post capex reviews, as well as cost pass throughs and capex re-openings.

This element of the scheme specified in the AER's 2013 Better Regulation CESS guideline and is the same for electricity and gas networks that currently have a CESS.

2.3.3.2 Contingent payment factor

The contingent payment factor is an addition to the CESS mechanism that makes the GDB's ability to earn the 30% benefit of a capex underspend conditional on its service performance. It is the share of CESS benefit that a GDB would be able to recover as a result of its service performance.

The purpose of the contingent payment factor is to:

- ensure that any capex underspend is efficient in order to "effectively mitigate the risk of a reduction in service standards"[14]
- establish thresholds of performance below which the GDB's reward reduces or no reward is payable for an underspend.

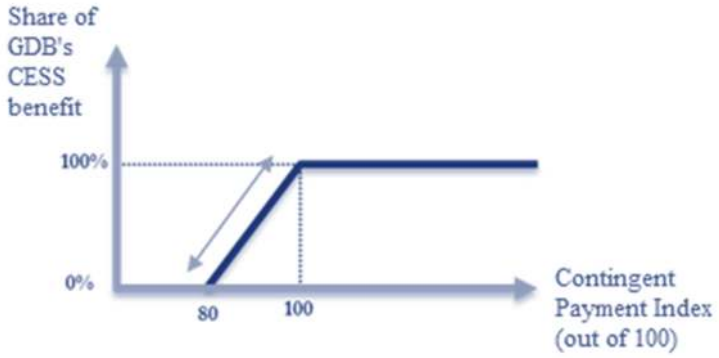
It operates as follows:

- service performance is monitored based on an contingent payment index or asset performance index (**API**)
- rewards for underspends are reduced, based on a scaling factor, where the API falls below historical targets
- it applies asymmetrically by applying to underspends only, so that there is no scaling for improved performance or for overspends.

Figure 2-1 illustrates that the share of the CESS benefits that the Victorian GDBs retain falls along a sliding scale as their performance worsens on the contingent payment index. This share reduces to zero below a threshold on the index.

[14] AER, "Attachment 14 − Capital expenditure sharing scheme | Final decision - Multinet Gas access arrangement 2018–22", November 2017, page 14-7

Figure 2-1 – CESS benefits for GDBs reducing by sliding scale



2.3.3.3 Contingent payment index or Asset performance index (**API**)

The API measures the service performance of GDBs and is used to determine the contingent payment factor as seen in Figure 2-1.

The purpose of the API is to ensure that CESS payments to GDBs are contingent on the GDBs maintaining their service quality. These payments will reduce if cost efficiency is gained by compromising service quality. This reflects the fact that there is no service quality scheme for the GDBs of the kind that exists for the electricity DNSPs with the STPIS – a scheme that incentivises maintaining (or improving) service performance.

The AER sought to ensure that the contingent payment arrangements rely on a suitable set of measures that map to material parts of the GDBs' capex forecasts and RABs. The Victorian API (its equivalent of our contingent payment index) includes five measures:

- unplanned system average interruption frequency index (**SAIFI**)
- unplanned system average interruption duration index (**SAIDI**)
- leaks on mains
- leaks on services
- leaks on meters.

The AER set targets for each measure which are set based on five years of historical performance data for each measure.

The AER weighted the measures so that:

- SAIFI and SAIDI account for 50% (25% each)
- The remaining 50% is allocated across the leak measures using the relative shares by each GDB's RAB for mains, services and meter assets.

2.4 How a CESS will support our customers' long-term interests

This section discusses how a CESS will benefit our customers and how our proposal meets the rule requirements.

2.4.1 Relevant rule requirements

The NGR give the AER discretion about whether to approve introducing an incentive scheme, such as the CESS we are proposing. Rule 98 governs the design of incentive mechanisms that can be included in an AA:

Incentive mechanism

(1) A full access arrangement may include (and the AER may require it to include) one or more incentive mechanisms to encourage efficiency in the provision of services by the service provider.

(2) An incentive mechanism may provide for carrying over increments for efficiency gains and decrements for losses of efficiency from one access arrangement period to the next.

(3) An incentive mechanism must be consistent with the revenue and pricing principles.

The revenue and pricing principles are detailed in the National Gas Law (**NGL**). In its Final Decision[15] for the Victorian GDBs in which it introduced a CESS, the AER indicated that it considered the following to be the most relevant principles for assessing the GDBs' incentives:

- *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; and*
  - *(b) the efficient provision of pipeline services; and*
  - *(c) the efficient use of the pipeline.*[16]

2.4.2 Key themes in our proposal

The extensive consumer engagement program which informed our proposal for our next AA period had four main themes which are reflected in our proposal:

1. Affordability
2. A safe and reliable gas service
3. Fairness (including doing what we can to reduce real RAB growth)
4. Innovating and planning for the future.

In their feedback, our consumers have indicated that they want us, amongst other things, to:

- keep gas affordable
- maintain the current service standards
- deliver timely, efficient connections
- limit estimated residential meter readings.

Our capex program and incentives should promote these outcomes. A CESS should only be introduced if it can positively contribute to achieving them.

[15] AER, "Attachment 14 − Capital expenditure sharing scheme | Final decision - Multinet Gas access arrangement 2018–22", November 2017, page 14-4

[16] Section 24(3) of the NGL

2.4.3 AER and consumer expectations

Any incentive scheme should be designed to promote the principles of best practice incentive regulation and in this case also support efficiency and be consistent with the revenue and pricing principles.

Our decision to propose a CESS and our choices in designing it have been arrived at by applying the same five principles that were used to develop the Victorian gas CESS:

> *Proportionate – Do customer benefits and harms warrant the rewards and penalties, and are customers willing to pay for improvements? and/or Is the additional regulatory burden warranted for the additional incentive improvement?*
>
> *Targeted – How has the network previously performed on these attributes relative to customer expectations? and To what extent do other obligations and incentives on the network affect these service attributes (including cost efficiency incentives and minimum obligations)? and Is there quality data available to accurately measure that performance?*
>
> *Consistency – Should a design feature align with electricity approaches where practical?*
>
> *Efficient – Does a design feature incentivise behaviour that supports the efficiency objective that underpins the NGO and the revenue and pricing principles?*
>
> *Manageable allocation of risk – Does the mechanism provide manageable opportunity for the network to achieve reward and avoid penalty, and therefore incentivise efficient behaviour to manage risk?* [17]

We have applied these principles in developing our capex incentive scheme. When we consulted on these principles, our stakeholders requested that we also specifically have regard to the following points which we have done as noted below:

- ensuring the incentives attach to those elements of the capex program are within JGN's control – which we have done by modifying the approach to exclude new connections capex.
- transparency in the data used to measure the contingent payment index and set the targets used within it – which we have achieved by obtaining most of the data from our RIN response and providing a target setting model that shows the data for the metering measure. We expect to report all data used to determine the contingent payment index in future RINs.
- the mechanism should be transparent—which is ensured by adopting the mechanism from the AER's CESS guideline and publishing a model for stakeholders to see all calculations (included in Attachment 7.12).
- the mechanism should not lead to significant administrative costs being incurred by either JGN or the AER—which is achieved because the mechanism is applied during the five yearly AA review and will rely on reported RIN data to administer, making the incremental administrative costs negligible.

2.4.4 Implications for our consumers

Under our proposed CESS, consumers' bills will be lower if the incentive helps us to find additional capex savings or it will apply extra discipline to avoid capex overspends or penalise us where we do incur these.

This is because:

- If JGN underspends the AER's allowance and we:
  - meet our service performance targets used in the contingent payment index then our consumers will receive 70% of the benefits of the underspend—this is the same outcome that would result under the electricity CESS of Victorian GDBs' CESS, or

[17] farrierswier Consulting, "Gas service incentives in Victoria and Albury – Report for AusNet Services and Australian Gas Networks", 15 December 2016, pages 14-15

  - do not meet those service performance targets then our consumers will receive higher benefits of the underspend.

- If JGN overspends the AER's allowance and this is deemed efficient and prudent by the AER then our consumers will pay for only 70% of the costs. This is not affected by the contingent payment factor or the contingent payment index. This is the same outcome that would result under the electricity CESS and the Victorian GDBs' CESS.

2.4.5 Compliance with the rules and revenue and pricing principles

Our proposed CESS has been built based on that previously approved Victorian GDBs' CESS by the AER as compliant with Rule 98. As explained in section 2.5.2, we have worked with our customers, consumer representatives and AER staff to modify the contingent payment index element to reflect our circumstances, and ensure it best supports the revenue and pricing principles that the AER has identified[18] as relevant. Specifically, our proposal will support efficient investment in our network by:

- strengthening our incentives to reduce capex and RAB growth and reducing longer term pricing pressures on our consumers
- creating a constant, or smoothed, incentive across the next AA period
- balancing incentives across opex and capex by providing similar incentives as the existing ECM for opex.[19] This will help JGN deliver efficiency at a total cost level and not just opex.

For these same reasons, we consider the CESS also supports the revenue and pricing principle at section 24(3) of the NGL that:

> *A service provider should be provided with effective incentives in order to promote economic efficiency with respect to reference services the service provider provides.*

and at section 24(6) of the NGL:

> *Regard should be had to the economic costs and risks of the potential for under and over investment by a service provider in a pipeline with which the service provider provides pipeline services.*

We note that we have not performed a detailed cost benefit study for CESS introduction and have relied on the same principles that the AEMC or the AER used when designing or approving the application of CESS incentive schemes in electricity or gas distribution, or gas or electricity transmission. We are not aware of any detailed cost benefit study undertaken by the AER on the CESS.

This practice is observed under incentive-based regulation applied on a prospective basis whereby the regulator is seeking to establish incentives to apply on an exante basis that will best ensure expenditure is incurred efficiently in future. Establishing a counterfactual case to apply a forward-looking cost benefit analysis (**CBA**) in this case would likely be a speculative task that may lead to an unhelpful focus on criticism of the detailed CBA assumptions rather than the merits of the intended incentives and the extent to which the design can be expected to provide those intended incentives (and desired outcomes).

We also note that the modifications that JGN has applied to make its gas CESS fit-for-purpose in a NSW gas context are consistent with the intent of the AEMC when it reviewed the issue of CESS schemes in the 2012 rule change review:

[18] AER, "Attachment 14 − Capital expenditure sharing scheme | Final decision - Multinet Gas access arrangement 2018–22", November 2017, page 14-4

[19] The AER explained and justified each of these benefits of a CESS in its Draft and Final Decisions for the Victorian GDBs.

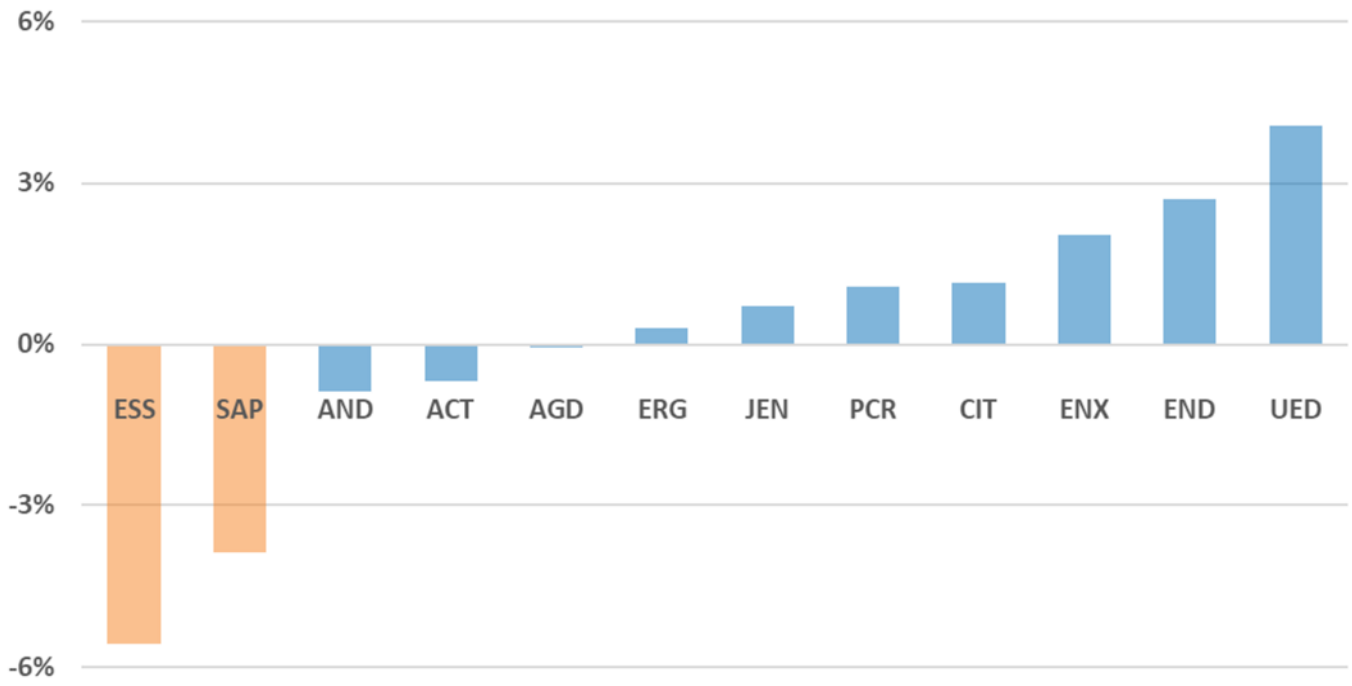
> *The AER should be able to apply schemes in a different way to different [network service providers] NSPs or even to apply different schemes to different NSPs. This would enable the AER to tailor its approach to individual NSPs.*[20]

The question of whether CESS schemes work in practice, can be partially tested by considering the capex productivity data reported by the AER for electricity networks who have had CESS schemes applied following the 2012 rule change—with the CESS first applying to the 2016 calendar year or 2015-16 financial year expenditure for most networks.[21] Figure 2-2 compares the change in capital partial factor productivity for those networks:

- from the year before the CESS first applied to them
- to the most recent year included in the AER's 2018 benchmarking report (namely 2017).

Although the comparison is inconclusive, it at least shows that many electricity networks *have* improved their capital productivity since the CESS was first introduced. It is too early to observe the equivalent outcome for the Victorian GDBs because the scheme was only introduced for the current AA period (2018-23), and being year one of that period, no timeseries data is yet available to test this.

Figure 2-2 – Capex productivity changes for electricity distribution networks with a CESS



Source: AER 2018 benchmarking report, JGN analysis

(1) The percentage change is calculated by comparing the 2017 and 2015 capital partial factor productivity scores published by the AER. TasNetworks was excluded as the first year of the CESS was the 2017-18 year.

2.5 Proposed CESS design

Our proposed CESS comprises the same three elements that the AER applied for the Victorian GDBs:

1. A CESS mechanism with similar efficiency benefit sharing
2. A contingent payment index – in a modified fashion more fit for our circumstances:

[20] AEMC, Economic Regulation of Network Service Providers, and Price and Revenue Regulation of Gas Services | Final position paper, p.98, November 2012.

[21] The two exceptions were TasNetworks—which had its CESS first start in 2017—and Power and Water Corporation—which will have its CESS apply from the 2019-20 FY for the first time.

a) we propose using the term 'contingent payment index' rather than 'asset performance index' but still use API as an abbreviation

b) we propose including a suite of 6 measures chosen for their relevant to our NSW circumstances, and

3. A contingent payment factor in an identical fashion dependent on the API.

The following section details and justifies the proposed elements of our CESS—the CESS mechanism, the contingent payment index and the contingent payment factor. It explains the role and purpose of each element, our customer feedback and our proposal.

2.5.1 CESS mechanism

We propose to adopt the similar CESS mechanism as applies to the Victorian GDBs and under the AER's electricity CESS guideline for the 2020-25 AA period.

2.5.1.1 Capex efficiency measurement

We must calculate efficiency gains or efficiency losses, so that we can share them between ourselves and consumers. We propose to do so using the same four step process that applies under the Victorian CESS.

This involves:[22]

- Calculating:
  - *for each year of the AA period*—the NPV of efficiency gains and losses by subtracting our actual (or estimated, for the final year of the AA period) capex, net of any deferrals or capex excluded through ex post reviews, from the AER's capex allowance, adjusted for any pass through amounts or the reopening of capex, and then
  - *for the AA period*—the total efficiency gains and losses.
- Applying a 30% sharing factor to the total efficiency gains or losses to calculate our share of the gains or losses. The remaining 70% will be received (or paid for) by consumers.
- Calculating the within period financing benefits or costs that accrued through the AA period
- Calculating the net CESS reward or penalty by subtracting the within period financing benefit from our share of gains or losses.
- Applying the contingent payment factor to adjust the net CESS reward or penalty for JGN's service performance.

The adjusted CESS reward or penalty would then be applied as an additional building block adjustment to our revenue for the subsequent AA period (i.e. the 2025-30 AA period). The CESS mechanism also includes a true up for the difference between year 5 estimated and actual capex once the data is known.[23]

Feedback at our workshop was supportive of adopting the Victorian CESS mechanism, while asking that we:

- consider whether new connections related capex should be excluded from capex efficiency measures due to it being considered to be outside JGN's control
- consider whether the CESS should be applied to each capex category separately

[22] For more detail refer to Attachment 7.12 Illustrative CESS Model

[23] There is a slight difference between the 'final year adjustment' formula in the CESS adopted for the Victorian gas distribution businesses and that in the AER's CESS guideline for electricity businesses. Namely, the '+1' is outside of the square brackets in the former which is an error, and inside the brackets in the latter. We have adopted the latter consistent with AER's intended final year adjustment.

- incorporate an objective approach to excluding deferrals.

Our proposed CESS design addresses both these matters as described below.

Scope of capex included in efficiency measurement

On the question of whether the CESS applies to all capex, there was strong and consistent workshop participant support for the CESS to only apply to things within JGN's control. The capex category that participants thought JGN should consider excluding was new connections related capex because this was seen to be driven by market forces for both volumes and unit rates.

We have considered this feedback and the options available to address it—and accept that it may be undesirable to incentivise us to avoid additional unforeseen connection volumes and associated costs, or to reward us for underspends that arise from connection volumes being less than expected. As a result, we propose to apply the CESS to total capex excluding new connections capex.

Applied in aggregate or separately to each capex category

Some workshop participants asked whether the CESS should apply to each expenditure category, rather than in aggregate as we propose. The logic being that this may encourage more accurate forecasting at the category level.

This is an understandable question to ask, especially given some of the category-level volatility we have experienced over the 2020-25 AA period. After considering it, however, we consider that it is best to apply the CESS to aggregate expenditure (excluding new connections capex) because:

- doing so better reflects how businesses like ours actually manages expenditure within an overall allowance (or budget)—changing operating and other factors often require us to rebalance our expenditure to better deliver the service and other outcomes sought by our customers
- it is simpler with less administrative effort to apply the CESS in aggregate—as only a single set of calculations are needed rather than one for each expenditure category
- this is the approach applied in Victoria—helping to maintain consistency across jurisdictions
- the pricing and efficiency outcomes experienced by our customers are a product of the total investment we make, not the individual category inputs that go into our total program of works.

2.5.1.2 Capex efficiency measurement adjustments

We propose adopting the adjustments that are included in the Victorian GDB's CESS for capex deferrals and ex post capex reviews. We also propose adopting the approach in the Victorian CESS to the treatment of year 5 capex which will not be known at the time of an AER decision and needs to be accounted for at the next review.

Deferral mechanism

Workshop participants considered it important that the adjustments for deferrals be objective and transparent. A key concern was that we might benefit under the CESS from deferring expenditure from one period to the next by getting a CESS benefit and then having the deferred capex included in future expenditure allowances.

We propose allowing the AER to adjust the CESS payments where we defer capex in the 2020-25 AA period and:

- The amount of the deferred capex in the 2020-25 AA period is material, and
- The amount of the estimated underspend in capex in the 2020-25 AA period is material, and
- The total approved forecast capex in the 2025-30 AA period is materially higher than it is likely to have been if a material amount of capex was not deferred in the 2020-25 AA period.

If the AER makes an adjustment, it will reduce the CESS payments we would otherwise have received in the 2025-30 AA period for capex underspends in the 2020-25 AA period. Consistent with the Victorian GDBs' CESS, the AER will have some discretion to determine the level of 'deferred capex'.

The adjustment would be the present value of the estimated marginal increase in forecast capex in the 2025-30 AA period attributable to capex deferred in the 2020-25 AA period. This estimate will be subtracted from the total efficiency gain, which is otherwise calculated in accordance with the CESS formula.

We consider this approach—as adopted in the AER's electricity CESS guideline and the Victorian GDBs' CESS—is transparent.

Ex-post capex review

The AER can undertake an ex post review to exclude any capex from our RAB that it deems to be non-conforming capex.

Any such amounts would be excluded from our actual (or estimated, in the case of final year of the 2020-25 AA period) capex when calculating the annual efficiency gain or loss. This would ensure that we are not penalised twice for non-conforming capex.

We received no feedback on this element of our proposal which aligns to the Victorian GDBs' CESS and so propose to retain it.

Year 5 treatment

We would estimate our actual capex for the final year (2024-25) of the 2020-25 AA period.

This is because actual capex for 2024-25 will not be available when we calculate the CESS rewards or penalties. Instead, we will estimate capex to calculate the efficiency gains or losses for the final regulatory year. At the 2025-30 AA, actual capex data would be available for 2024-25.

Where actual capex differs from the capex estimate used to calculate the CESS, an adjustment would be made to take account for the difference.

We received no feedback on this element of our proposal which aligns to the Victorian GDBs' CESS.

2.5.2 Contingent payment index

We propose to apply a contingent payment index, which will serve the same purpose as the API in the Victorian CESS.

Index measure selection

We worked with our customer stakeholders to identify index measures and weights in the contingent payment index that are fit-for-purpose for our pipeline services in NSW. As discussed in section 2.3.3.3, the Victorian CESS took account of the Victorian GDBs' operating environment. Our CESS should similarly take account of our operating environment in NSW.

Our consultation paper (included in Appendix A) analysed 12 candidate measures. We shortlisted six proposed measures in our consultation paper:

1. Unplanned SAIFI
2. Unplanned SAIDI
3. Leaks in Mains & Services
4. Leaks in Meters

5. Confirmed poor supply
6. Estimates of meter reads

We explored each of these in detail at our workshop by discussing:

- what estimates of meter reads are and what they mean for customer experience
- how we invest and operate to maintain these
- our historical performance
- links between the candidate measures and forecast capex and the RAB
- stakeholder feedback on suitability of the measure.

The workshop attendees considered the measures, their historical performance, data robustness and links to capex. Attendees agreed with the six measures proposed by JGN, with any residual concerns about capex linking to be addressed through the weights.

Some attendees asked whether it would be better to include fewer measures, especially if there are concerns over whether the data used to calculate the targets is reliable enough. We considered reducing the number of measures to four or five; however, in the end we adopted the six proposed because:

- they cover both the measures used in the Victorian GDBs' CESS as well as those more relevant to our circumstances, including meter read estimation
- adopting six—as opposed to say four or five measures—does not add significant complexity to the calculations, especially given the data is readily available
- the data used for all but one of the measures (meter read estimation) is included in the AA RIN or has been reported to the NSW technical regulator for many years
- in the case of meter read estimation, our customers were concerned about the impact of estimated meter readings on budgeting and feel estimates are generally unfair[24]—which we consider warrants having it included within the index even though our historical data only goes back to May 2016[25]
- we have used our weightings to respond to workshop feedback that meter-related measures could be over-represented in a group of six measures.

We have therefore included these six measures in our contingent payment index. Clause 13 and Schedule 9 of our proposed 2020-25 AA provides our proposed specification of the contingent payment index, based on these measures. It sets out in detail how each will be measured. Appendix C of our consultation paper (provided at Appendix A to this paper) explains how these measures relate to our capex program and RAB.

Target setting

We must set targets for the performance measures in the contingent payment index. We propose to apply the same approach for setting targets for the proposed six measures as used under the Victorian GDBs' CESS and the AER's electricity STPIS guideline.

This involves:

- setting a target for each measure
- using five years of historical data, where available, and

[24] See Table 2.1 in Chapter 2 of our 2020 Plan

[25] To help address the lack of historical data, we have used monthly rather than annual meter reading data.

- using a simple average to avoid unnecessary complexity.

This approach will ensure that:

- short-term volatility in performance data is removed from the target, and
- we are incentivised to maintain, but not improve, our service performance.

Our customer stakeholders were supportive of this approach at our workshop. They considered it was transparent and overcame any issues of volatility reported data.

Although some attendees asked whether more than five years of data should be used where available, we consider it better to retain consistency with the Victorian GDBs' CESS and the electricity STPIS—which both use five years of data. Five years ensures that the targets (calculated as five-year averages) are sufficiently stable, while also ensuring that they reflect recent service performance.

We have therefore used the last five years of historical data to calculate targets for each of the proposed measures, where possible. The one exception was meter reading data where we only had reliable observations back to May 2016, and so we used monthly observations from that date to December 2018. The targets are shown in Table 2–1.

Table 2–1: Calculated targets[26]

Measure	Basis	Target	Data source
Unplanned SAIFI	Outages per 1,000 customers	3.33	RIN response for customer numbers and outage frequency data
Unplanned SAIDI	Hours per 1,000 customers	40.95	RIN response for customer numbers and outage duration data reported periodically to NSW Fair Trading for outages that affect 5 or more customers
Mains and services leaks	Leaks per km of main	0.16	RIN response for main length and leak data
Meter leaks	Leaks per 1,000 customers	8.15	RIN response for customer numbers and leak data
Poor quality supply	Events per 1,000 customers	0.92	RIN response for customer numbers and poor quality supply event data
Estimated meter reads	% estimates	5.93%	SAP data. Compliance reports were provided to the AER for the period 1 May 2016 until 30 April 2019

(1) We have adjusted the meter read data to remove reads that were estimated due to events outside of JGN's control. Specifically, we have removed estimates made because entry was locked, meters were obstructed or removed, or access was refused or unsafe. These events are tracked in our systems with unique 'field codes'. Adjusting the meter read data in this way ensures that the contingent payment index is not influenced by such events.

Weightings

We also need to weight the measures in the contingent payment index to turn the six measures into a single index. We presented three weighting options in our consultation paper and discussed these at our workshop (included in Appendix A).

The logic and method behind JGN's option 3 for program aligned weights was unanimously supported at the workshop. Stakeholders requested that we refine this to lessen the weighting on measures that link to metering assets (namely meter leaks and meter read estimation).

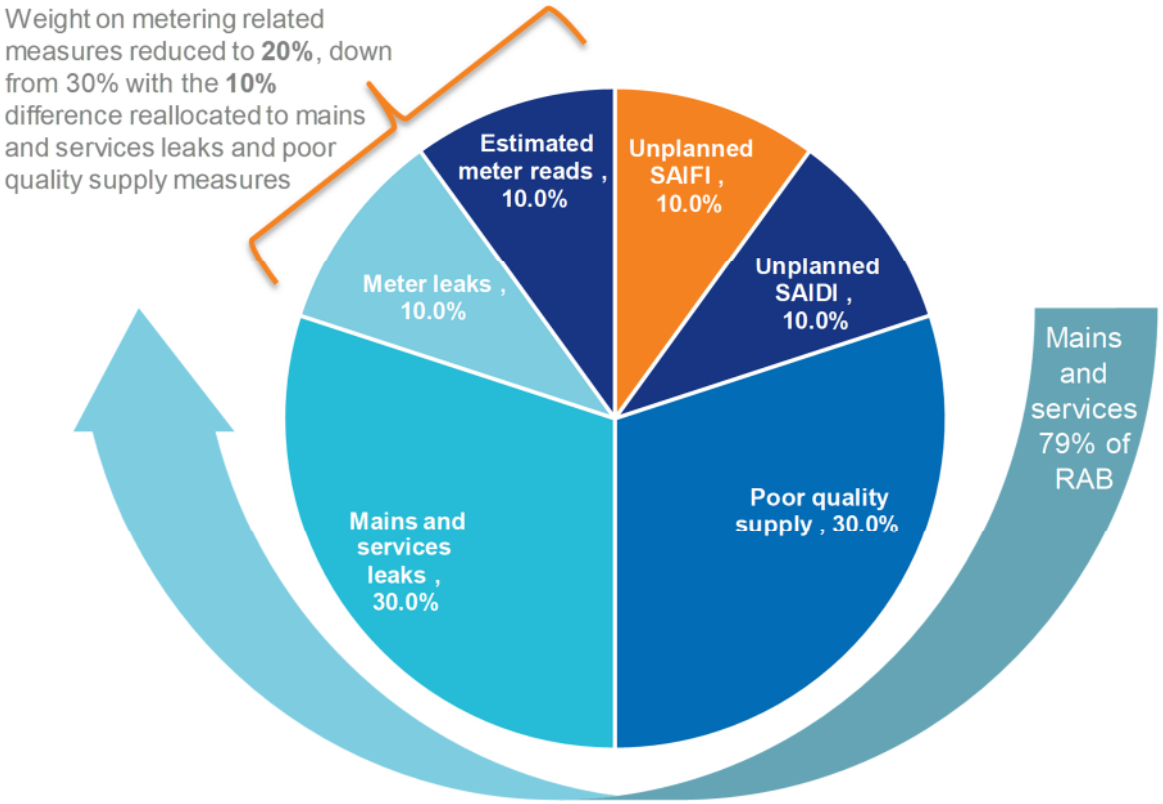
[26] These targets may be updated at the time of revised proposal when the actual data for 2018-19 is available

Our proposal applies weightings for the six measures that reflect how closely our performance against the six measures is aligned to our proposed capex program, as follows:

- performance is *strongly* aligned to our capex program – 30% weighting
- performance is *moderately* aligned to our capex program – 10% weighting.

Figure 2-3 illustrates the proposed weighting and shows how this has been adjusted for feedback.

Figure 2-3 – Weighting approach adjusted for feedback



2.5.3 Contingent payment factor

Finally, we need to specify how the contingent payment factor would be applied to scale down rewards where the CPI performance is less than the target level.

We propose to apply the same approach that is used in the Victorian GDBs' CESS. This involves a sliding scale and a lower performance threshold such that:

- JGN will receive a 30% share of the reward of an underspend if its weighted average service performance (as measured by the contingent payment index) is at, or above, target.
- JGN will receive no share of the reward of an underspend if its service performance falls below the lower performance threshold. In this case consumers will receive higher benefit of the underspend.
- JGN will receive a share of the 30% reward of an underspend along a sliding scale if its service performance falls within a range. It receives more of the benefit the closer its service performance is to the top of the range and less of the benefit the closer its service performance is to the bottom of the range.

Consistent with the Victorian CESS, the threshold of performance below which no reward is payable to JGN for an underspend is an index score of 80 (compared to a base index score of 100).

Appendix A
Consultation paper on a CESS for JGN

Jemena
bringing energy to life

Jemena Gas Networks (NSW) Ltd

Capital Expenditure Sharing Scheme (CESS)

Consultation Paper

Public

20 March 2019

Jemena

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List of appendices

OVERVIEW

We are preparing our Access Arrangement (**AA**) proposal for our next AA period, 1 July 2020 to 30 June 2025. We will submit our proposal to the Australian Energy Regulator (**AER**) by 30 June 2019.

The AER has significant discretion about introducing incentive schemes. We are currently subject to one such scheme – the efficiency carry-over mechanism (**ECM**). This relates to our operating expenditure (**opex**). Under the ECM, we share incremental efficiency gains or losses in opex approximately 30:70 between ourselves and consumers.

We are considering proposing a capital expenditure sharing scheme (**CESS**) mechanism as an additional incentive scheme in our AA proposal for our next AA period. This would ensure that all of our expenditure is covered by incentive schemes. A CESS compares a gas distribution business' (**GDB**) actual (and, where necessary, estimated) capex to the efficient forecasts the AER has approved for that AA period. Based on the calculated difference, the allowed revenues in the next AA period are either increased to reward capex underspends, or decreased to penalise capex overspends.

This Consultation Paper is part of an extensive consumer engagement program we are undertaking to inform our proposal for our next AA period.

Question 1

- Are there any other objectives than affordability, safety and reliability, fairness and innovation that should inform the development of a CESS?

Any CESS should balance risks and the outcomes we deliver, such as prices and services, in an efficient manner to meet consumers' interests.

Question 2

- Should there be other principles than proportionate, targeted, consistency, efficient and manageable allocation of risk that inform the design of a CESS?

We are considering basing the CESS on the design that the AER has applied to the Victorian GDBs for their current AA period, with limited changes to service performance measurement to make it specific to our circumstances.

Under the Victorian CESS, 30 per cent of the net present value of any under (over) spend within a period is added to (removed from) revenues in the next AA period, subject to adjustments for deferred capex, or capex excluded by the AER from our regulatory asset base after any *ex post* review. The contingent payment mechanism establishes performance monitoring based on a contingent payment index and reduces rewards using a contingent payment factor, where a GDB's performance falls below its historical targets.

Question 3

- Should we adopt the same CESS mechanism as applies to the Victorian GDBs? What changes, if any, should be made?

We have identified 11 candidate measures for inclusion in the contingent payment index, which we have assessed in Appendix A against eight criteria. We determined these criteria having regard for the above objectives and principles. We propose including six measures in the contingent payment index.

Questions 4 to 8

- Should we include unplanned system average interruption frequency index (SAIFI) as a measure in the contingent payment index?
- Should we include unplanned system average interruption duration index (SAIDI) as a measure in the contingent payment index?
- Should we include leaks in mains and services and leaks in meters as measures in the contingent payment index?
- Should we include confirmed poor supply as a measure in the contingent payment index?
- Should we include estimates of meter reads as a measure in the contingent payment index?

We need to set targets for the performance measures in the contingent payment index. We propose to apply the same approach as is used under the Victorian CESS and the electricity service target performance incentive scheme (**STPIS**). This involves setting targets for individual measures, using five years of historical data, where available, and using a simple average to avoid unnecessary complexity.

Question 9

- Should the targets for the proposed six measures be set using the same approach as for the Victorian CESS and the electricity STPIS?

There is a need to weight the measures in the contingent payment index.

Question 10

- Should we weight the measures in the contingent payment index based on our capex program?

There is a need to specify the formula for each measure. This is needed both to calculate the targets and to measure and report on our performance. We have specified in Appendix A the proposed formulae for our six proposed measures.

Question 11

- Are the proposed formulae in Appendix B appropriate for each measure?

There is also a need to specify how the contingent payment factor would be applied. We propose using the same approach that is used in the Victorian CESS, which is based on a sliding scale and a lower performance threshold:

- A GDB receives a 30 per cent share of the reward of an underspend if its service performance (as measured by the asset performance / contingent payment index) is at, or above, the target

- A GDB receives no share of the reward of an underspend if its service performance falls below the lower performance threshold. In this case, all of the benefit of the underspend would pass to consumers, and
- A GDB receives a share of the 30 per cent reward of an underspend along a sliding scale if its service performance falls within a range. It receives more of the benefit the closer its service performance is to the top of the range and less of the benefit the closer its service performance is to the bottom of the range.

Question 12

- Should the contingent payment factor be set on the same basis as in the Victorian CESS?

1. INTRODUCTION

1.1 BACKGROUND AND CONTEXT

We operate Australia's largest gas distribution network and provide pipeline services to approximately 1.4 million customers in Sydney, Newcastle, Wollongong and the Central Coast, and over 20 country centres, including in the Central Tablelands, Central West, Southern Tablelands and Riverina regions of New South Wales (NSW).

Our pipeline services are regulated by the Australian Energy Regulator (**AER**). The AER approves our total revenue for our pipeline services for an Access Arrangement (**AA**) period. Our current AA period is 1 July 2015 to 30 June 2020. The AER determines our total forecast revenue using the building block approach. Under this approach, one element of our forecast revenue is the revenue increments and decrements for incentives schemes.

We are currently subject to one incentive scheme – the efficiency carry-over mechanism (**ECM**). This relates to our operating expenditure (**opex**). Under the ECM, we share incremental efficiency gains or losses in opex approximately 30:70 between ourselves and consumers.

We will submit our AA proposal to the AER by 30 June 2019 for our next AA period, 1 July 2020 to 30 June 2025. We propose retaining the ECM in our next AA period.

1.2 PURPOSE OF THIS CONSULTATION PAPER

We are considering including a capital expenditure (**capex**) efficiency incentive mechanism as an additional incentive scheme in our AA proposal for our next AA period. This would ensure that all of our expenditure is covered by incentive schemes.

Such a mechanism currently applies to the three gas distribution businesses (**GDBs**) in Victoria and all electricity DNSPs in the National Electricity Market. It is referred to as a capital expenditure sharing scheme (**CESS**).

This consultation paper explains the design of the proposed CESS. It also seeks feedback on options for service performance monitoring that could be incorporated within the CESS, if it is applied to us, to ensure that:

- Capex efficiencies are not achieved at the expense of service performance, and
- The performance being monitored relates to matters that are important to our consumers.

It considers, for example, what we should measure, the targets we should set and how we should weight the measures.

We have highlighted questions throughout this consultation paper, although stakeholders are invited to submit on any matter of interest to them about the CESS. Our questions are summarised in section 5.2.

1.3 STRUCTURE OF THIS CONSULTATION PAPER

The remainder of this consultation paper is structured as follows:

- Section 2 explains the nature and purpose of a CESS, and how the CESS for the Victorian GDBs works, before considering some implications for our consumers.
- Section 3 discusses the objectives of our proposal and some practical data considerations relevant to implementing a CESS, before considering some implications for our CESS design.
- Section 4 proposes the CESS design in three parts – the CESS mechanism, the contingency payment index and the contingent payment factor.
- Section 5 summarises our key consultation questions, invites stakeholders to make a submission on this consultation paper and provides details of our CESS deep dive workshop on 9 April 2019.
- Appendix A assesses candidate measures for the proposed contingent payment index.
- Appendix B provides a proposed specification of the contingent payment index.
- Appendix C explains how the measures we propose to include in the contingent payment index relate to our capex program.

2. WHAT IS A CESS?

This section provides some context about our capex before explaining the nature and purpose of a CESS, how the CESS for the Victorian GDBs works and some implications for consumers.

2.1 OUR CAPEX ALLOWANCE

As part of our total revenue, we receive an allowance to finance efficient investment to deliver our pipeline services. This allowance is referred to as the return on capital, which is calculated as the product of our allowed rate of return and our regulatory asset base (**RAB**).

Currently, if we spend less capex than our allowance we keep the financing funding (without incurring any cost) until the start of the next AA period, when our capex is rolled into the RAB. This means that we keep the allowance regardless of how much capex we actually spend (and incur in financing costs) in the AA period.

If we spend more capex than the AER allows, then we do not start earning a return on the higher amount until it is rolled into our RAB in the next AA period. This means that we are out of pocket for the financing costs on this higher amount during the AA period when the capex is incurred.

This incentivises us to reduce our capex. This incentive is higher at the start of the AA period and weakens over the period, because the length of time we incur or benefit from the financing cost outcome is shorter.

2.2 OUR HISTORICAL CAPEX

Table 1 compares the AER's capex allowances to our actual and estimated capex for the previous and current AA periods. It shows that:

- We overspent our total capex allowance by about 2.2 per cent for the previous AA period and expect to underspend our total capex allowance by about 7.6 per cent for the current AA period, and
- There are some significant differences between our under and overspends across our capex categories. This is not uncommon for GDBs and DNSPs.

The AER makes its allowance at an aggregate capex level, rather for individual categories and the CESS that applies to the Victorian GDBs and all DNSPs relates to total, not individual categories of, capex.

Table 1 – Comparison of allowed and actual capex, 2010-15 to 2015-20 ($2020, Millions)

	2010-15		2015-20		Performance	
	Allowance	Actual	Allowance	Actual / estimates	2010-15	2015-20
Connections	451.29	432.46	397.12	582.18	-18.83	185.06
Metering	145.51	98.37	193.51	108.45	-47.15	-85.05
Facilities and pipes	90.85	68.16	125.36	68.95	-22.69	-56.41
Information Technology	106.40	135.19	147.64	107.77	28.78	-39.87
Augmentation	85.46	117.43	110.07	51.03	31.97	-59.04

	2010-15		2015-20		Performance	
	Allowance	Actual	Allowance	Actual / estimates	2010-15	2015-20
Mains replacement	23.73	22.60	75.39	31.91	-1.13	-43.48
Other	47.74	97.41	45.18	60.64	49.67	15.46
Total	950.99	971.61	1,094.28	1,010.93	20.62	-83.34

2.3 RELEVANT RULE REQUIREMENTS

The National Gas Rules (**NGR**) give the AER significant discretion about whether to approve introducing an incentive scheme, such as the CESS we are proposing. Rule 98 governs the design of incentive mechanisms that can be included in an AA:

Incentive mechanism

(1) A full access arrangement may include (and the AER may require it to include) one or more incentive mechanisms to encourage efficiency in the provision of services by the service provider.

(2) An incentive mechanism may provide for carrying over increments for efficiency gains and decrements for losses of efficiency from one access arrangement period to the next.

(3) An incentive mechanism must be consistent with the revenue and pricing principles.

The revenue and pricing principles are detailed in the National Gas Law (**NGL**). In its Final Decision[1] for Victorian GDBs in which it introduced a CESS, the AER indicated that it considered the following to be the most relevant principle for assessing the GDBs' incentives:

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; and

(b) the efficient provision of pipeline services; and

(c) the efficient use of the pipeline.[2]

2.4 NATURE OF A CESS

A CESS mechanism compares a business' actual (and, where necessary, estimated) capex to the efficient forecasts the AER has approved for that period.

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1 AER, "Attachment 14 − Capital expenditure sharing scheme | Final decision - Multinet Gas access arrangement 2018–22", November 2017, page 14-4

2 Section 24(3) of the NGL

Based on the calculated difference, the allowed revenues in the next AA period are either increased to reward capex underspends, or decreased to penalise capex overspends.

We provide more details below about the mechanics of a CESS.

2.5 PURPOSES OF A CESS

A CESS increases a business' capex incentives by allowing (or requiring) it to retain (or incur) 30 per cent of any under (or over) spend within an AA period. By extension, consumers receive (or incur) the remaining 70 per cent.

A CESS therefore:

- Strengthens a business' incentives to reduce its capex and RAB growth. It increases both rewards from reducing spending and penalties for overspending
- Creates a constant, or smoothed, incentive across an AA period. As noted, in the absence of a CESS, a business has a greater incentive to reduce its capex early in an AA period, and
- Balances incentives across opex and capex, as it provides similar incentives as the ECM (or EBSS) for opex.[3]

In this way, a CESS should give the AER and consumers greater confidence that a business' historical capex is efficient. This, in turn, should:

- Reduce the risk of (and need for) the AER to make ex-post capex adjustments, and
- Increase the AER's ability to have regard for historical capex in setting forecast capex allowances.

2.6 CURRENT VICTORIAN CESS

The AER accepted the Victorian GDBs' proposal to introduce a CESS in their current AA period, 2018 to 2022. The following was relevant context to the AER's decision:

- The AER had introduced a CESS for the electricity DNSPs, following the release of its "Capital Expenditure Incentive Guideline for Electricity Network Service Providers" in November 2013. So there was precedent for the AER applying a CESS for other network service providers.
- The GDBs had large underspends on their allowed mains replacement capex.
- The AER wanted to include performance measures in the CESS that mapped to the Victorian GDBs' capex forecast, so that they couldn't reduce their capex at the expense of their service performance.
- The GDBs did not have (and were not proposing) a service target performance incentive scheme (STPIS), of the kind that applies to the electricity DNSPs.
- The GDBs engaged their stakeholders about a CESS and demonstrated support for its introduction.

The CESS that the AER introduced for the Victorian GDBs had three key components: 1) the CESS mechanism, 2) the contingent payment factor, and 3) the asset performance index.

[3] The AER explained and justified each of these benefits of a CESS in its Draft and Final Decisions for the Victorian GDBs.

2.6.1 CESS MECHANISM

The purpose of the CESS mechanism is to make CESS benefits contingent on the Victorian GDB's service performance, using a sliding scale. It provides that, if average performance (measured using an asset performance index) is below target, then any CESS benefits would reduce – potentially down to zero.

The CESS mechanism, subject to the contingent payment factor, operates as follows:

- 30 per cent of the net present value (NPV) of any within period under (over) spend is added to (removed from) the GDB's allowed revenues in the next AA period
- The CESS ensures that under (over) spends are split so consumers receive (pay) 70 per cent and businesses receive (pay) 30 per cent, and
- The CESS effectively 'tops up' the existing incentive provided by the financing benefit to a 70:30 split between consumers and the GDB.

The scheme adjusts for material capex deferrals and ex post capex reviews, as well as cost pass throughs and capex re-openings.

2.6.2 CONTINGENT PAYMENT FACTOR

The contingent payment factor is an addition to the CESS mechanism that makes the GDB's right to the 30 per cent benefit of a capex underspend conditional on its service performance.

The purpose of the contingent payment factor is to:

- Ensure that any capex underspend is efficient in order to "effectively mitigate the risk of a reduction in service standards"[4], and
- Establish thresholds of performance below which the GDB's reward reduces or no reward is payable for an underspend.

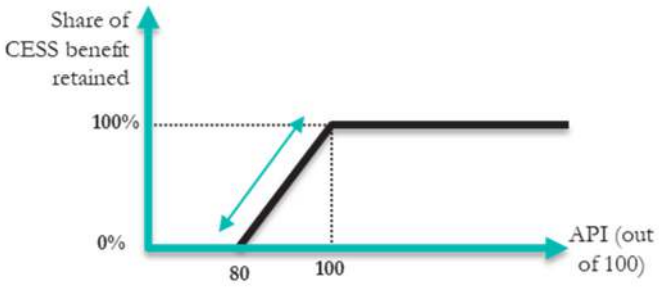
It operates as follows:

- Service performance is monitored based on an asset performance index.
- Rewards for underspends are reduced, based on a scaling factor, where the asset performance index falls below historical targets.
- It applies asymmetrically by applying to underspends only, so that there is no scaling for improved performance or for overspends.

Figure 2-1 illustrates that the share of the CESS benefits that the Victorian GDBs retain falls along a sliding scale as their performance worsens on the asset performance index. This share reduces to zero below a threshold on the index.

[4] AER, "Attachment 14 − Capital expenditure sharing scheme | Final decision - Multinet Gas access arrangement 2018–22", November 2017, page 14-7

Figure 2-1 – CESS benefits reducing by sliding scale



2.6.3 ASSET PERFORMANCE INDEX

The asset performance index is an input into the contingent payment mechanism.

The purpose of the asset performance index is to recognise that CESS payments should be contingent on the GDBs maintaining their service performance standards. This reflects the fact that there is no service quality scheme for the GDBs, of the kind that exists for the electricity DNSPs with the STPIS, that incentivises maintaining (or improving) service performance.

The AER sought to ensure that the contingent payment arrangements rely on a suitable set of measures that map to material parts of the GDBs' capex forecasts and RABs. The Victorian asset performance index includes five measures:

- Unplanned system average interruption frequency index (SAIFI)
- Unplanned system average interruption duration index (SAIDI)
- Leaks on mains
- Leaks on services, and
- Leaks on meters.

The AER set targets for each measure, rather than a single target for the weighted average performance of all measures. The targets are set based on five years of historical performance data for each measure.

The AER weighted the measures so that:

- SAIFI and SAIDI account for 50 per cent (25 per cent each)
- The remaining 50 per cent is weighted by each GDB's RAB proportion for those assets.

2.7 IMPLICATIONS FOR CONSUMERS

Under the Victorian CESS, consumers' bills will be lower if the incentive helps the GDB to find additional capex savings or applies extra discipline to avoid capex overspends. This is because:

- If a GDB underspends the AER's allowance:
  - and the GBD meets its service performance targets then consumers will receive 70 per cent of the benefits of the underspend. This is the same outcome that would result under the electricity CESS, or

  - and does not meet its service performance targets then consumers will receive more than 70 per cent of the benefits of underspend. The percentage share increases along a sliding scale, until consumers receive 100 per cent of the benefits of the underspend beyond a threshold. This is more than consumers would receive under the electricity CESS.
- If a GDB overspends the AER's allowance then consumers will pay for only 70 per cent of the costs. This is not affected by the contingent payment factor or the asset performance index. This is the same outcome that would result under the electricity CESS.

3. WHY WE ARE CONSIDERING A CESS

This section discusses the objectives of our proposal and some practical data considerations relevant to implementing a CESS in NSW, before considering some implications for our CESS design.

3.1 OUR PROPOSAL OBJECTIVES

We are undertaking an extensive consumer engagement program to inform our proposal for our next AA period. There are four main themes to our proposal:

1. Affordability
2. A safe and reliable gas service
3. Fairness (including doing what we can to reduce real RAB growth), and
4. Innovating and planning for the future.

In their feedback to date, our consumers have indicated that they want us, amongst other things, to:

- Keep gas affordable
- Maintain the current service standards
- Deliver timely, efficient connections, and
- Limit estimated residential meter readings.

Our capex program and incentives should promote these outcomes. A CESS should only be introduced if it can positively contribute to achieving them.

Question 1

- Are there any other objectives than affordability, safety and reliability, fairness and innovation that should inform the development of a CESS?

3.2 AER AND CONSUMER EXPECTATIONS

Any incentive scheme should be designed to promote the principles of best practice regulation.

We propose applying the same five principles that were used to develop the Victorian gas CESS:

1. *Proportionate – Do customer benefits and harms warrant the rewards and penalties, and are customers willing to pay for improvements? and/or Is the additional regulatory burden warranted for the additional incentive improvement?*
2. *Targeted – How has the network previously performed on these attributes relative to customer expectations? and To what extent do other obligations and incentives on the network affect these service attributes (including cost efficiency incentives and minimum obligations)? and Is there quality data available to accurately measure that performance?*

3. *Consistency – Should a design feature align with electricity approaches where practical?*
4. *Efficient – Does a design feature incentivise behaviour that supports the efficiency objective that underpins the NGO and the revenue and pricing principles?*
5. *Manageable allocation of risk – Does the mechanism provide manageable opportunity for the network to achieve reward and avoid penalty, and therefore incentivise efficient behaviour to manage risk?* [5]

Applying these principles in developing an incentive scheme allows balancing outcomes, such as prices and services, in an efficient manner that is aligned to consumers' interests.

Question 2

- Should there be other principles than proportionate, targeted, consistency, efficient and manageable allocation of risk that inform the design of a CESS?

3.3 PRACTICAL DATA CONSIDERATIONS

Data about service performance is a necessary input in the design of a CESS because it is used both to set performance targets and to measure performance within a period.

It is important to know, as a practical consideration when choosing performance measures, what data is currently available and what might be (or should be) available in the future.

Table 2 details the service performance data that we currently report. It shows that:

- We report data to the AER, the Energy Council of Australia and the NSW technical regulator
- Our reporting relates to financial and non-financial information, covering supply quality, reliability, gas leaks, mechanical damage, emergency simulations, unaccounted for gas (UAG), third party hits on our network, response times and calls to dial before you dig, and
- We have obtained varying levels of assurance for different categories of data over time.

Table 2 – Our current data reporting

Reporting body	Measures	Frequency and length of timeseries	Audit status
AER – Gas distribution regulatory information notices (RINs)	• Supply quality | poor pressure events by: mains, services, meters, impacting >5 customers, lasting >12 hours • Reliability | planned and unplanned outages: total, impacting >5 customers, lasting >12 hours • Leaks by asset type • UAG	Formerly annually, now annual data in 5 yearly AA review RIN	Non-financial data: • Up to and including regulatory year 2015-16 – Director's Statutory Declaration • Regulatory year 2016-17 and beyond: limited assurance audit

[5] Farrier Swier Consulting, "Gas service incentives in Victoria and Albury – Report for AusNet Services and Australian Gas Networks", 15 December 2016, pages 14-15

Reporting body	Measures	Frequency and length of timeseries	Audit status
	• Third party hits to our network: mains and services		Financial data • Up to RY16: limited assurance audit • RY17 and beyond: Full assurance audit
Energy Networks Australia– Natural Gas Distribution Benchmarking report	• Reliability: Unplanning SAIDI, SAIFI, CAIDI • Leaks: public reported by mains, services and meters, and KMs of network surveyed • Third party hits to our network: mains and services • Average response times: reported leaks and major incidents • Calls to dial before you dig	Annually	None
NSW Fair Trading	Safety and Integrity: • Number of gas leaks per 10km of network reported by 3rd party • Number of gas leaks per 1,000 customers reported by 3rd party • Number reported mechanical damage of network per 10km • Number reported mechanical damage of network per 1,000 customers • Percentage of network leak surveyed • Number of leaks per 10km of survey • Number emergency simulations. Reliability: • Number of consumer hours off supply per 1000 customers • Percentage of calls responded to within 60 min	Annual	Reviewed as part of annual independent (external) audit undertaken on the Safety and Operating Plan and the performance measures reported against that plan. The audit is reported to the NSW Department of Planning and Environment to confirm both the processes and performance measures reported.

3.4 IMPLICATIONS FOR OUR CESS DESIGN

We propose to adopt a CESS comprising the same three elements that the AER applied for the Victorian GDBs:

1. A CESS mechanism
2. A contingent payment index – we propose using this term rather than an “asset performance index”, as not all of the measures that we are proposing relate directly to asset performance, and
3. A contingent payment factor.

We propose to establish:

- Index measures, targets and weights in the contingent payment index that are fit-for-purpose for our pipeline services in NSW. As discussed in section 2.6, the Victorian CESS took account of the Victorian GDBs' operating environment. Our CESS should similarly take account of our operating environment in NSW.
- Scaling thresholds in the contingent payment factor that consider our historical performance on the chosen measures.

The following section details and justifies the proposed elements of our CESS, and seeks feedback on these.

4. PROPOSED CESS DESIGN

This section details three parts of our proposed CESS design – the CESS mechanism, the contingent payment index and the contingent payment factor.

4.1 CESS MECHANISM

We propose to adopt the same CESS mechanism as applies to the Victorian GDBs.

4.1.1 CAPEX EFFICIENCY MEASUREMENT

We propose to calculate efficiency gains or efficiency losses, and to share them between ourselves and consumers, using the same four step process that applies under the Victorian CESS. This involves:

- Calculating for:
  - Each year of the AA period, the NPV of efficiency gains and losses by subtracting our actual (or estimated, for the final year of the AA period) capex, net of any deferrals or capex excluded through ex post reviews, from the AER's capex allowance, adjusted for any pass through amounts or the reopening of capex, and then
  - The AA period, the total efficiency gains and losses.
- Applying a 30 per cent sharing factor to the total efficiency gains or losses to calculate our share of the gains or losses. The remaining 70 per cent will be received (or paid for) by consumers
- Calculating the financing benefits or costs that accrued through the AA period by:
  - Assuming capex is incurred in the middle of the year, although we would adjust capex to end-of-year terms to calculate an underspend in NPV terms
  - Multiplying the underspend in NPV terms in a given year by the weighted cost of capital (WACC) in the following year, and
  - Applying a discount factor to the financing benefits from each year to convert them into constant dollar terms.
- Calculating the CESS reward or penalty by subtracting the within period financing benefit from our share of the cumulative efficiency gain or loss.

The CESS reward or penalty would then be applied as an additional building block adjustment to our revenue for the next AA period.

4.1.2 CAPEX EFFICIENCY MEASUREMENT ADJUSTMENTS

We propose adopting the adjustments that are included in the Victorian CESS for capex deferrals and ex post capex reviews. We also propose adopting the approach in the Victorian CESS to the treatment of year 5 capex which will not be known at the time of an AER decision and needs to be accounted for at the next review.

4.1.2.1 Deferral mechanism

We propose allowing the AER to adjust the CESS payments where we defer capex in the current AA period and:

- The amount of the deferred capex in the current AA period is material, and
- The amount of the estimated underspend in capex in the current AA period is material, and
- The total approved forecast capex in the next AA period is materially higher than it is likely to have been if a material amount of capex was not deferred in the current AA period.

If the AER makes an adjustment, it will reduce the CESS payments we would otherwise have received in the next AA period for capex underspends in the current AA period.

The adjustment would be the present value of the estimated marginal increase in forecast capex in the next AA period attributable to capex deferred in the current AA period. This estimate will be subtracted from the total efficiency gain, which is otherwise calculated in accordance with the CESS formula.

4.1.2.2 Ex-post capex review

The AER can undertake an ex post review to exclude any capex from our RAB that it deems to be non-conforming capex.

Any such amounts would be excluded from our actual (or estimated, in the case of final year of the AA period) capex when calculating the annual efficiency gain or loss. This would ensure that we are not penalised twice for non-conforming capex.

4.1.2.3 Year 5 treatment

We would estimate our actual capex for the final year (and potentially the penultimate year) of the AA period.

This is because actual capex for the final year of the AA period will not be available when we calculate the CESS rewards or penalties. Instead, we will estimate capex to calculate the efficiency gains or losses for the final regulatory year. At the next AA, actual capex data would be available for that year.

Where actual capex differs from the capex estimate used to calculate the CESS, an adjustment would be made to take account for the difference.

Question 3

- Should we adopt the same CESS mechanism as applies to the Victorian GDBs? What changes, if any, should be made?

4.2 CONTINGENT PAYMENT INDEX

We propose to apply a contingent payment index, which will serve the same purpose as the asset performance index in the Victorian CESS.

4.2.1 MEASURE IDENTIFICATION AND SELECTION

There is a need to choose which performance measures to include in the contingent payment index.

As noted in section 2.6, the Victorian CESS has five measures – unplanned SAIFI, unplanned SAIDI, leaks on mains, leaks on services and leaks on meters. These were chosen for the Victorian GDBs' specific circumstances.

We have identified 11 candidate measures for inclusion in our contingent payment index, which we have assessed against eight criteria. We determined these criteria having regard for the matters discussed in section 3. Our full assessment of these candidate measures is set out in Appendix A.

We propose including the following six measures in the contingent payment index.

Appendix B provides a proposed specification of the contingent payment index, based on our proposed six measures. Appendix C explains how these measures relate to our capex program and RAB.

4.2.1.1 Unplanned SAIFI

Unplanned SAIFI is a measure of the average frequency of supply outages. It is included as a measure in the Victorian CESS.

Unplanned SAIFI is calculated by summing the total number of unplanned outages and dividing it by the average total number of customers for a year.

We propose to include unplanned SAIFI in the contingent payment index because:

- Our customers have told us that they value safe and reliable supply, and they want us to maintain (but to not pay to improve) current service levels. This includes the average frequency of interruptions.
- Augmentation and replacement capex both support maintaining (but not improving) supply reliability.

We have historical data available to set targets for unplanned SAIFI, as we have been periodically reporting data to the AER since 2011.

Question 4

- Should we include unplanned SAIFI as a measure in the contingent payment index?

4.2.1.2 Unplanned SAIDI

Unplanned SAIDI is a measure of the average duration of supply outages. It is included as a measure in the Victorian CESS.

Unplanned SAIDI is calculated by summing the total consumer hours of supply lost through unplanned outages, where five or more customers are affected, and dividing it by the average total number of customers for a year.

We propose to include unplanned SAIDI in the contingent payment index for the same reasons as we are proposing including unplanned SAIFI. This ensures the index covers both the average number and length of outages, which are key service attributes for our customers.

We have historical data available to set targets for unplanned SAIDI, as we have been periodically reporting it to the NSW Technical Regulator.

Question 5

- Should we include unplanned SAIDI as a measure in the contingent payment index?

4.2.1.3 Leaks – mains & services and meters

We propose including two measures for leaks in the contingent payment index – one each for:

- Mains and services – we propose combining these into one measure because in practice it is difficult to distinguish leaks between mains and services, so more reliable targets and reporting can be achieved through combining these, and
- Meters.

Both of these are included as measures in the Victorian CESS.

The measure for mains and services' leaks is calculated by summing the total number of publicly reported mains' leaks and services' leaks and dividing them by the average total length of the network in kilometres.

The measure for meter leaks is calculated by summing the total number of publicly reported meter leaks and dividing them by the average total number of customers for a year.

We propose to include these two measures in the contingent payment index because:

- Our consumer engagement indicates that they want us to maintain safety and overall customer service experience, of which leaks' performance is a part, and
- Our meter replacement and broader asset replacement capex programs support managing leaks over time, although capex only directly affects leaks in the areas where the replacement program is undertaken.

We have historical data available to set targets for these measures, as we have been periodically reporting data to the AER since 2011.

Question 6

- Should we include leaks in mains and services and leaks in meters as measures in the contingent payment index?

4.2.1.4 Confirmed poor supply

Confirmed poor supply relates to low pressure events. It is a measure of supply quality, but doesn't include system outages. It reflects the need for us to balance connecting new connections, while maintaining service performance for existing customers. Maintaining the level of performance of this measure demonstrates we are not degrading our assets to achieve customer growth or market expansion. This measure is not included in the Victorian CESS, because the dominant driver of capex in Victoria was mains replacement. Our major mains replacement of the original cast iron gas network was largely completed over a decade ago, so our capex focus in now on connecting new customers and ensuring the system has sufficient capacity to maintain the pressure and thus service quality for all new and existing customers.

Confirmed poor supply is calculated by summing the total number of poor pressure events on mains, services and meters and dividing it by the average total number of customers for a year.

We propose to include a measure of confirmed poor supply in the contingent payment index because:

- Our consumer engagement indicates that customers want us to maintain safe and reliable supply, as well as customer service performance, and

- Connections and augmentation capex both support this measure, although improving supply quality is not a major focus of our capex program.

We have historical data available to set targets for this measure, and this data will be reported to the AER as part of the 2020-25 Access Arrangement RIN.

Question 7

- Should we include confirmed poor supply as a measure in the contingent payment index?

4.2.1.5 Estimates of meter reads

We are responsible for reading meters and sending the usage data to retailers, who manage the end customers account and issue bills. We are also responsible for testing and replacing faulty meters. . Residential and small business consumers who consume less than 1TJ per annum are required to have their meters read every quarter. We estimate a residential and small business consumers' meter where we do not undertake an actual meter read (e.g. if we cannot gain access to the meter), or when the meter is inaccurate or has failed. We follow the Australian Energy Market Operator's (AEMO) prescribed estimation and substitution methodology. Billing accuracy is improved if there are fewer estimated, and more actual, meter reads. This measure is not included in the Victorian CESS.

The meter read estimation rate is calculated by dividing the total number of estimated reads by the total number of meter reads for a year.

We propose to include a measure of estimates of meter reads in the contingent payment index because:

- Our consumer engagement indicates that they want us to reduce the impact of estimated meter readings to improve billing accuracy, and
- It is related to two parts of our capex program. First, it is related to our meter replacement program. Second, it is related to our IT program as our planned life-cycle replacements (from meter reading systems to enterprise wide platforms) are required to avoid data quality issues, which can lead to estimated bills. We have historical data available to set targets for this measure based on Retail Market Procedure compliance reports provided to the AER for the period May 2016 until January 2018.

Question 8

- Should we include estimates of meter reads as a measure in the contingent payment index?

4.2.2 TARGET SETTING

We must set targets for the performance measures in the contingent payment index. We propose to apply the same approach for setting targets for the proposed six measures as used under the Victorian CESS and the electricity STPIS. This involves:

- Setting targets for individual measures
- Using five years of historical data, where available, and
- Using a simple average to avoid unnecessary complexity.

This approach will ensure that:

- Short-term volatility in performance data is removed from the target, and
- We are incentivised to maintain, but not improve, our service performance.

We used the last five years of historical data to calculate targets for each of the proposed measures. The targets are shown in Table 3.

Table 3 – Calculated targets

Measure	Basis	Target	Data source
Unplanned SAIFI	Outages per 1,000 customers	3.242	RIN response for customer numbers and outage frequency data (which will be audited shortly).
Unplanned SAIDI	Hours per 1,000 customers	39.817	RIN response for customer numbers (which will be audited shortly) and outage duration data reported periodically to NSW Fair Trading
Mains and services leaks	Leaks per km of main	0.157	RIN response for main length and leak data (which will be audited shortly)
Meter leaks	Leaks per 1,000 customers	7.933	RIN response for customer numbers and leak data (which will be audited shortly)
Poor quality supply	Events per 1,000 customers	0.895	RIN response for customer numbers and poor quality supply event data (which will be audited shortly)
Estimated meter reads	% estimates	11.4%	SAP data. Compliance reports were provided to the AER for the period 1 May 2016 until January 2018

Question 9

- Should the targets for the proposed six measures be set using the same approach as for the Victorian CESS and the electricity STPIS?

4.2.3 WEIGHTING

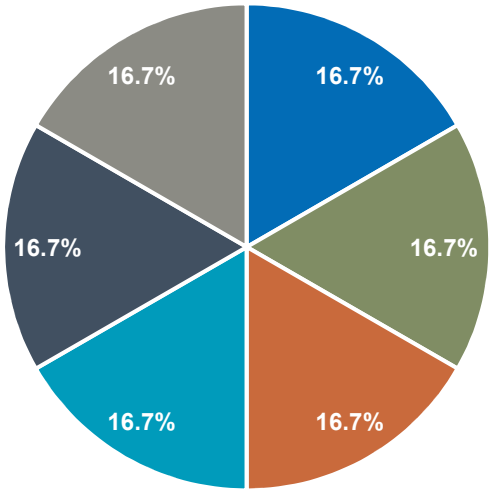
We need to weight the measures in the contingent payment index. We have considered three options for determining the weighting.

The first option is to apply equal weightings to each measure. This would mean that, for our proposal, each measure would receive one-sixth (i.e. 16.67 per cent) of the weighting.

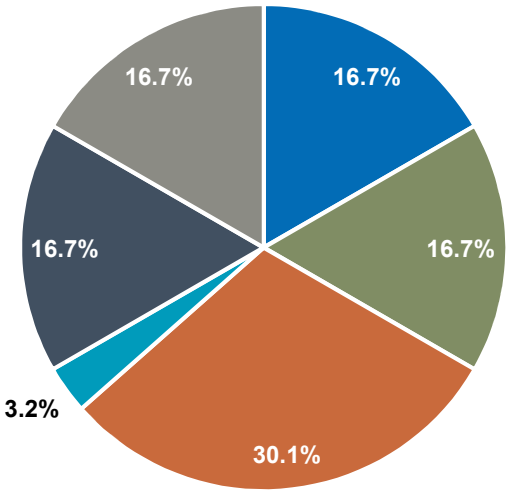
The second option is to group the measures and to apply equal weightings to each group (similar to the first option). Each group of measures would receive one-third of the weighting. We would weight each measure equally, except for the leaks measures, which could be weighted in various ways. In Figure 4-1, we use regulated asset base (**RAB**) values to weight the leak measures.

Figure 4-1: Weighting options

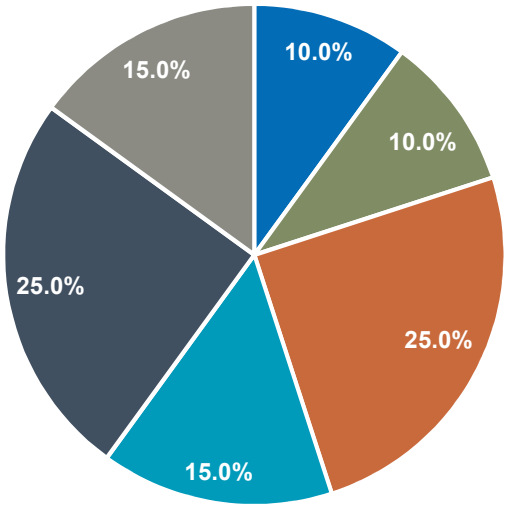
Option 1: Equal weights



Option 2: Option 1 with the weighting between mains and services leak and meter leak measures based on opening RAB



Option 3: Program aligned weights



- Unplanned SAIFI
- Unplanned SAIDI
- Mains and services leaks
- Meter leaks
- Poor quality supply
- Estimated meter reads

The third option is to apply weightings that reflect how closely our performance against the six measures is linked to our proposed capex program, as follows:

- performance is *very strongly* aligned to our capex program - 25% weighting
- performance is *strongly* aligned to our capex program – 15% weighting
- performance is *moderately* aligned to our capex program – 10% weighting

We prefer the third option because it better reflects the service outcomes that could be affected by whether we deliver on our proposed capital program or not.

Question 10

- Should we weight the measures in the contingent payment index based on our capex program?

4.2.4 MEASUREMENT

There is a need to specify the formula for each measure. This is needed both to calculate the targets and to measure and report on our performance.

We have specified in Appendix A the proposed formulae for each of our six proposed measures.

We will use audited or validated data where possible for each measure to ensure it is sufficiently accurate to use to determine financial rewards or penalties under the CESS.

Question 11

- Are the proposed formulae in Appendix B appropriate for each measure?

4.3 CONTINGENT PAYMENT FACTOR

We need to specify how the contingent payment factor would be applied.

One option is to apply the same approach that is used in the Victorian CESS. As noted in section 2.6.2, and illustrated in Figure 2-1, the contingent payment factor in the Victorian CESS includes a sliding scale and a lower performance threshold:

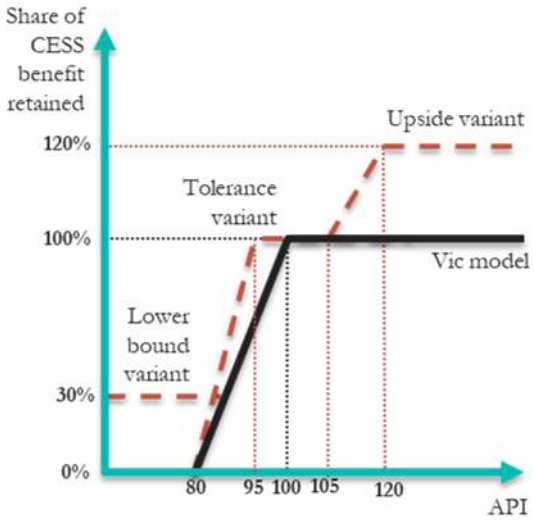
- A GDB receives a 30 per cent share of the reward of an underspend if its service performance (as measured by the asset performance / contingent payment index) is at, or above, the target.
- A GDB receives no share of the reward of an underspend if its service performance falls below the lower performance threshold. In this case, all of the benefit of the underspend would pass to consumers.
- A GDB receives a share of the 30 per cent reward of an underspend along a sliding scale if its service performance falls within a range. It receives more of the benefit the closer its service performance is to the top of the range and less of the benefit the closer its service performance is to the bottom of the range.

Alternatives that the AER considered, but rejected, for the Victorian GDBs included:

- Applying an upside variant so that the contingency payment factor is applied symmetrically. This would mean that a GDB would be incentivised to improve its service performance above the target.
- Applying a lower bound variant by limiting the downside for a GDB by putting a floor (i.e. above zero) on the reduction in the 30 per cent that is available to the GDB, regardless of the level of its service performance.
- Changing the tolerance variance by flattening or steepening the scaling rate (i.e. or slope of scaling).

Figure 4-2 illustrates these options.

Figure 4-2 – Options for the contingent payment factor



We understand that the AER rejected the upside variant and the lower bound variant for the Victorian GDBs because it wanted the CESS:

- Not to reward a GDB for improved performance
- To focus the GDB on maintaining service performance when it underspends its capex allowance, and
- Remove any CESS reward for an underspend when service performance falls below a defined lower level.

We support adopting the AER's approved approach from the Victorian CESS.

Question 12

- Should the contingent payment factor be set on the same basis as in the Victorian CESS?

5. NEXT STEPS

This section lists our key consultation questions, invites stakeholders to make a submission on this consultation paper and provides details of our upcoming CESS deep dive workshop.

5.1 HOW TO MAKE A SUBMISSION

Consultation questions are identified throughout this consultation paper and are summarised in section 5.2. However, stakeholders are encouraged to provide feedback on any issue they consider relevant. We will consider all submissions in preparing our proposal to the AER.

Stakeholder submissions should be made by 5pm on 12 April 19, addressed to:

Ana Dijanosic, Regulatory Manager, Gas Markets, Jemena

Email: ana.dijanosic@jemena.com.au

- Address: 99 Walker Street, North Sydney, NSW, 2060

Any questions on this consultation paper can also be directed to the above Jemena representative.

5.2 SUMMARY OF CONSULTATION QUESTIONS

We invite stakeholders to respond to the questions raised in this consultation paper. Stakeholders should feel free to respond to some, or all, of the questions.

Question 1

- Are there any other objectives than affordability, safety and reliability, fairness and innovation that should inform the development of a CESS?

Question 2

- Should there be other principles than proportionate, targeted, consistency, efficient and manageable allocation of risk that inform the design of a CESS?

Question 3

- Should we adopt the same CESS mechanism as applies to the Victorian GDBs? What changes, if any, should be made?

Question 4

- Should we include unplanned SAIFI as a measure in the contingent payment index?

Question 5

- Should we include unplanned SAIDI as a measure in the contingent payment index?

Question 6

- Should we include leaks in mains and services and leaks in meters as measures in the contingent payment index?

Question 7

- Should we include confirmed poor supply as a measure in the contingent payment index?

Question 8

- Should we include estimates of meter reads as a measure in the contingent payment index?

Question 9

- Should the targets for the proposed six measures be set using the same approach as for the Victorian CESS and the electricity STPIS?

Question 10

- Should we weight the measures in the contingent payment index based on our capex program?

Question 11

- Are the proposed formulae in Appendix B appropriate for each measure?

Question 12

- Should the contingent payment factor be set on the same basis as in the Victorian CESS?

5.3 CESS DEEP DIVE WORKSHOP

We will hold a “deep dive” workshop on the proposed CESS. We invite stakeholders to register to attend the workshop.

What: Jemena Gas Network Capital Expenditure Sharing Scheme Forum

When: 9 April 2019 from 9:30am to 1:30pm.

Where: Level 14, 99 Walker St, North Sydney

RSVP: Please email anadijanosic@jemena.com.au by 1 April 2019

5.4 TIMEFRAME FOR AA PROCESS

The following are other key dates for our AA process.

Proposal submitted to AER: By 30 June 2019

Submissions to AER on proposal: August 2019

AER Draft Decision published: November 2019

Revised proposal to AER: January 2020

Submissions to AER on revised proposal: February 2020

AER Final Decision published: April 2020

Start of next AA period: 1 July 2020

Appendix A
Assessment of candidate measures for contingent payment index

Jemena

A1. OVERVIEW OF CANDIDATE MEASURES FOR CONTINGENT PAYMENT INDEX

Measures Criteria	Unplanned SAIFI	Unplanned SAIDI	Unplanned CAIDI	Customer hours off supply	Leaks: Mains & Services; Meters	UAG	Confirmed poor supply	Third party hits	Connection timeliness	Emergency response	Estimates of meter reads
Highlighted in customer engagement	Yes	Yes	Yes	Yes	Yes	No	Yes	No	Yes	No	Yes
Relevant to capex program	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	No	Yes
Not covered by existing incentives or controls (i.e. “Yes” = not covered)	Yes	Yes	Yes	Yes	Yes	No	Yes	No	No	No	Yes
Robust historical data	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	Yes
Can incorporate exclusions to avoid outliers in reported data	Yes	Yes	Yes	Yes	n.a.	n.a.	n.a.	n.a.	n.a.	No	n.a.
Within JGN’s control	No	Yes	Yes	Yes	Yes	Partial	Yes	No	No	No	Partial
Not covered by another proposed measure (i.e.	Yes	Yes	No	No	Yes	No	Yes	No	Yes	No	Yes

Measures Criteria	Unplanned SAIFI	Unplanned SAIDI	Unplanned CAIDI	Customer hours off supply	Leaks: Mains & Services; Meters	UAG	Confirmed poor supply	Third party hits	Connection timeliness	Emergency response	Estimates of meter reads
"Yes" = not covered)											
Included in Victorian Asset Performance Index	Yes	Yes	No	No	Yes	No	No	No	No	No	No
Recommendation	**Include**	**Include**	**Exclude**	**Exclude**	**Include x 2**	**Exclude**	**Include**	**Exclude**	**Exclude**	**Exclude**	**Include**

A2. UNPLANNED SAIFI

Potential basis of calculation

$$Unplanned\ SAIFI_t = \frac{\sum_{i=1}^{12} OUF_i^t}{(C^{t-1} + C^t)/2}$$

where:

$\sum_{i=1}^{12} OUF_i^t$ is the summation of the total number of unplanned outages for all customers on the Service Provider's network sourced from annual reporting to the AER for the 12 months in Financial Year *t*;

C^{t-1} is the total customer numbers on the Service Provider's network at the end of the Financial Year *t* – 1 sourced from annual reporting to the AER;

C^t is the total customer numbers on the Service Provider's network at the end of the Financial Year *t* sourced from annual reporting to the AER.

Criteria	Rationale / explanation	Supports inclusion
Highlighted in customer engagement	Our customers told us that they value safe and reliable supply, and want us to maintain (i.e. but to not pay to improve) current service levels. This includes the average frequency of interruptions	Yes
Relevant to capex program	Augmentation and replacement capex both support maintaining (i.e. but not improving) supply reliability, although this capex doesn't have a major impact on reducing the frequency of outages as these are driven by third party hits.	Yes
Not covered by existing other incentives or controls	Not covered because no STPIS or GSL regime covering reliability performance	Yes
Robust historical data exists	Data has been periodically reported to AER since 2011. Attestation provided for 2011-16 and audit for 2016-17 to 2017-18 onwards	Yes
Can incorporate exclusions to avoid outliers in reported data	Measure could be adjusted to exclude outages caused by certain events	Yes
Within JGN's control	The frequency of outage is driven almost exclusively by external events predominately third party hits and upstream gas supply/quality issues. The only outage under JGN control would be related to Jemena damage/outage events	No

Criteria	Rationale / explanation	Supports inclusion
Not covered by another proposed measure	Not covered, although closely related SAIDI, which is another proposed measure. Also closely related to customer hours off supply (CHOS), although this is not a proposed measure	Yes
Included in Victorian Asset Performance Index	Measure included for Victorian GDBs	Yes
Recommendation	Include in Contingent Payment Index	Include

A3. UNPLANNED SAIDI

Potential basis of calculation

$$Unplanned\ SAIDI_t = \frac{\sum_{i=1}^{12} OUD_i^t}{(C^{t-1} + C^t)/2}$$

where:

$\sum_{i=1}^{12} OUD_i^t$ is the summation of the total number of consumer hours off supply lost through unplanned losses of supply for all instances on the Service Provider's network where 5 or more customers were affected sourced from annual reporting to the NSW Fair Trading for the 12 months in Financial Year *t*;

C^{t-1} is the total customer numbers on the Service Provider's network at the end of the Financial Year *t* – 1 sourced from annual reporting to the AER;

C^t is the total customer numbers on the Service Provider's network at the end of the Financial Year *t* sourced from annual reporting to the AER.

Criteria	Rationale / explanation	Supports inclusion
Highlighted in customer engagement	Our customers told us that they value safe and reliable supply, and want us to maintain (i.e. but to not pay to improve) current service levels. This includes the average duration of interruptions	Yes
Relevant to capex program	Augmentation and replacement capex both support maintaining (i.e. but not improving) average duration of supply interruptions, although this capex doesn't have a major impact on reducing duration of outages. Responsiveness to interruptions is also dependent on opex	Yes
Not covered by existing other incentives or controls	Not covered because no STPIS or GSL regime covering reliability performance	Yes
Robust historical data exists	Data has been periodically reported to NSW Technical Regulator. It does not appear that this data will be reported in the RIN. CHOS has been routinely been reported to NSW Technical Regulator which is the key data for this measure.	Yes
Can incorporate exclusions to avoid outliers in reported data	Measure could be adjusted to exclude outages caused by certain events	Yes
Within JGN's	Within limited control, subject to appropriate exclusions	Yes

Criteria	Rationale / explanation	Supports inclusion
control	for defined events such as 'acts of God' – bushfires, floods, etc and interruptions caused by upstream suppliers of gas into the networks	
Not covered by another proposed measure	Not covered, although closely related SAIFI, which is another proposed measure. Also closely related to CHOS, although this is not a proposed measure	Yes
Included in Victorian Asset Performance Index	Measure included for Victorian GDBs	Yes
Recommendation	Include in Contingent Payment Index	Include

A4. UNPLANNED CAIDI

Criteria	Rationale / explanation	Supports inclusion
Highlighted in customer engagement	Engagement indicates customers want safe and reliable supply, including to maintain (i.e. but not to pay to improve) average duration of interruptions	Yes
Relevant to capex program	Augmentation and replacement capex both support maintaining (i.e. but not improving) average frequency of supply interruptions, although this capex doesn't have a major impact on CAIDI Responsiveness to interruptions is also dependent on opex	Yes
Not covered by existing other incentives or controls	Not covered because no STPIS or GSL regime covering reliability performance	Yes
Robust historical data exists	Calculated using the unplanned SAIFI and SAIDI data described above	Yes
Can incorporate exclusions to avoid outliers in reported data	Measure could be adjusted to exclude outages caused by certain events	Yes
Within JGN's control	Within control, subject to appropriate exclusions for defined events	Yes
Not covered by another proposed measure	Covered by SAIDI and SAIFI, which are both proposed measures – SAIDI being the product of SAIFI and CAIDI. Also closely related to CHOS, although this is not a proposed measure	No
Included in Victorian Asset Performance Index	Not included for Victorian GDBs	No
Recommendation	Exclude from Contingent Payment Index	Exclude

A5. CUSTOMERS HOURS OFF SUPPLY

Criteria	Rationale / explanation	Supports inclusion
Highlighted in customer engagement	Engagement indicates customers want safe and reliable supply, including to maintain (i.e. but not to pay to improve) current levels of hours off supply	Yes
Relevant to capex program	Augmentation and replacement capex both support maintaining (i.e. but not improving) the current levels of hours off supply, although this capex doesn't have a major impact on CHOS	Yes
Not covered by existing other incentives or controls	Not covered because no STPIS or GSL regime covering hours off supply	Yes
Robust historical data exists	Data has been periodically reported to NSW Technical Regulator. It does not appear that this data will be reported in the RIN	Yes
Can incorporate exclusions to avoid outliers in reported data	Measure could be adjusted to exclude outages caused by certain events	Yes
Within JGN's control	Within control, subject to appropriate exclusions for defined events	Yes
Not covered by another proposed measure	Closely related to both SAIDI, which is a proposed measure – not related to SAIFI as doesn't relate to frequency Also closely related to CAIDI, although this is not a proposed measure	No
Included in Victorian Asset Performance Index	Not included for Victorian GDBs	No
Recommendation	Exclude from Contingent Payment Index	Exclude

A6. LEAKS – REPORTED BY (A) MAINS AND SERVICES (B) METERS

Potential basis of calculation – Mains and services leaks

$$Mains + ServicesLeaks_t = \frac{\sum_{i=1}^{12} MAL_i^t + \sum_{i=1}^{12} SEL_i^t}{(L^{t-1} + L^t)/2}$$

where:

$\sum_{i=1}^{12} MAL_i^t$ is the summation of the total number of publicly reported mains leaks on the Service Provider's network sourced from annual reporting to the AER for the 12 months in Financial Year *t*;

$\sum_{i=1}^{12} SEL_i^t$ is the summation of the total number of publicly reported services leaks on the Service Provider's network sourced from annual reporting to the AER for the 12 months in Financial Year *t*;

L^{t-1} is the total length of mains in the Service Provider's network at the end of the Financial Year *t* – 1 sourced from annual reporting to the AER;

L^t is the total length of mains in the Service Provider's network at the end of the Financial Year *t* sourced from annual reporting to the AER.

Potential basis of calculation – Meter leaks

$$MeterLeaks_t = \frac{\sum_{i=1}^{12} MTL_i^t}{(C^{t-1} + C^t)/2}$$

where:

$\sum_{i=1}^{12} MTL_i^t$ is the summation of the total number of publicly reported meter leaks on the Service Provider's network sourced from annual reporting to the AER for the 12 months in Financial Year *t*;

C^{t-1} is the total customer numbers on the Service Provider's network at the end of the Financial Year *t* – 1 sourced from annual reporting to the AER;

C^t is the total customer numbers on the Service Provider's network at the end of the Financial Year *t* sourced from annual reporting to the AER.

Criteria	Rationale / explanation	Supports inclusion
Highlighted in customer engagement	Engagement indicates that customers want to maintain safety and overall customer service experience, of which leaks' performance is a part	Yes
Relevant to capex program	Meter replacement and broader asset replacement capex programs support managing leaks over time, although capex doesn't have a major impact on leaks	Yes

Criteria	Rationale / explanation	Supports inclusion
	and reducing levels	
Not covered by existing other incentives or controls	Not covered because no STPIS or GSL regime covering leaks' performance Indirectly related to UAG	Yes
Robust historical data exists	Publicly reported leaks' data, and kilometres of mains' data, has been periodically reported to AER since 2011. Attestation for 2011-16 and audit from 2016-17 to 2017-18 onwards	Yes
Can incorporate exclusions to avoid outliers in reported data	Not relevant	n.a.
Within JGN's control	Within control, subject to level of targets	Yes
Not covered by another proposed measure	Indirectly related to UAG, although this is not a proposed measure	Yes
Included in Victorian Asset Performance Index	Measure included, although Victorian GDBs have three separate measures – one each for mains, services and meters – rather than the two proposed for JGN	Yes
Recommendation	Include in Contingent Payment Index	Include

A7. UNACCOUNTED FOR GAS

Criteria	Rationale / explanation	Supports inclusion
Highlighted in customer engagement	Not raised in engagement, as JGN is proposing to maintain its UAG incentive targets and cost pass through mechanism	No
Relevant to capex program	Meter replacement and broader asset replacement capex programs support managing gas measurement and containment over time, although capex doesn't have a major impact on UAG	Yes
Not covered by existing other incentives or controls	UAG incentive targets and cost pass through mechanism currently apply	No
Robust historical data exists	UAG data is periodically reported to AER	Yes
Can incorporate exclusions to avoid outliers in reported data	Not relevant	n.a.
Within JGN's control	JGN has limited control as it procures gas to replenish the difference between the measured quantities of gas entering and leaving its gas network	No
Not covered by another proposed measure	Indirectly related to leaks, which is a proposed measure	No
Included in Victorian Asset Performance Index	Not included for Victorian GDBs	No
Recommendation	Exclude from Contingent Payment Index	Exclude

A8. CONFIRMED POOR SUPPLY

Potential basis of calculation

$$PoorPressureEvents_t = \frac{\sum_{i=1}^{12} MAPPE_i^t + \sum_{i=1}^{12} SEPPE_i^t + \sum_{i=1}^{12} + MEPPE_i^t}{(C^{t-1} + C^t)/2}$$

where:

$\sum_{i=1}^{12} MAPPE_i^t$ is the summation of the total number of poor pressure events on mains for the Service Provider's network sourced from annual reporting to the AER for the 12 months in Financial Year *t*;

$\sum_{i=1}^{12} SEPPE_i^t$ is the summation of the total number of poor pressure events on services for the Service Provider's network sourced from annual reporting to the AER for the 12 months in Financial Year *t*;

$\sum_{i=1}^{12} MEPPE_i^t$ is the summation of the total number of poor pressure events on meters for the Service Provider's network sourced from annual reporting to the AER for the 12 months in Financial Year *t*;

C^{t-1} is the total customer numbers on the Service Provider's network at the end of the Financial Year *t* – 1 sourced from annual reporting to the AER;

C^t is the total customer numbers on the Service Provider's network at the end of the Financial Year *t* sourced from annual reporting to the AER.

Criteria	Rationale / explanation	Supports inclusion
Highlighted in customer engagement	Engagement indicates customers value safe and reliable supply as well as customer service performance This measure relates to low pressure events. It is a measure of reliability, but doesn't include system outages. It reflects the need for JGN to balance connecting new connections, while maintaining service performance for existing customers	Yes
Relevant to capex program	Connections and augmentation capex both impact this measure, although improving supply quality is not a major focus of the capex program Maintaining performance of this measure demonstrates JGN is not degrading its assets to achieve customer growth / market expansion	Yes
Not covered by existing other incentives or controls	Not covered	Yes
Robust historical data exists	Attestation provided for 2011-16 and audit for 2016-17 to 2017-18 onwards	Yes

Criteria	Rationale / explanation	Supports inclusion
Can incorporate exclusions to avoid outliers in reported data	Not relevant	n.a.
Within JGN's control	Within control	Yes
Not covered by another proposed measure	Somewhat related to SAIDI and SAIFI, although this measure doesn't include system outages because it is a measure of service quality rather than outage	Yes
Included in Victorian Asset Performance Index	Not included for Victorian GDBs	No
Recommendation	Include in Contingent Payment Index	Include

A9. THIRD PARTY HITS

Criteria	Rationale / explanation	Supports inclusion
Highlighted in customer engagement	Not directly raised in engagement, although generally relates to maintaining safe and reliable supply	No
Relevant to capex program	Doesn't relate closely to the capex program, except for the shallow mains' program This measure predominantly relates to opex for the dial-before-you-dig program	No
Not covered by existing other incentives or controls	Third party has a minor contribution to UAG, which is subject to UAG incentive targets and cost pass through mechanism	No
Robust historical data exists	The RIN includes some data for leaks caused by third party damage	Yes
Can incorporate exclusions to avoid outliers in reported data	Not relevant	n.a.
Within JGN's control	No	No
Not covered by another proposed measure	Related to UAG, although this is not a proposed measure. Also related to SAIDI and SAIFI, which are both proposed measures to be included	No
Included in Victorian Asset Performance Index	Not included for Victorian GDBs	No
Recommendation	Exclude from Contingent Payment Index	Exclude

A10. CONNECTION TIMELINESS

Criteria	Rationale / explanation	Supports inclusion
Highlighted in customer engagement	Engagement indicates customers value timely efficient connections	Yes
Relevant to capex program	Relates directly to connections capex	Yes
Not covered by existing other incentives or controls	JGN already has strong incentives to connect customers in a timely manner, especially because it operates under a price cap	No
Robust historical data exists	The data is not reported in the RIN Good quality data exists for electricity to gas conversions; however, equivalent data is not available for new homes and medium density / high rise connections	No
Can incorporate exclusions to avoid outliers in reported data	Not relevant	n.a.
Within JGN's control	Not fully within JGN's control as timeliness of connections between acceptance of offer and construction can be impacted by other parties' decisions / behaviour, including customers, developers and service providers	No
Not covered by another proposed measure	Not covered	Yes
Included in Victorian Asset Performance Index	No measure included for Victorian GDBs	No
Recommendation	Exclude from Contingent Payment Index	Exclude

A11. EMERGENCY RESPONSE

Criteria	Rationale / explanation	Supports inclusion
Highlighted in customer engagement	Not directly raised in engagement, although generally relates to maintaining safe and reliable supply	No
Relevant to capex program	Doesn't relate closely to capex program This measure predominantly relates to opex and restoration of supply	No
Not covered by existing other incentives or controls	Not covered	No
Robust historical data exists	No	No
Can incorporate exclusions to avoid outliers in reported data	Not applicable	No
Within JGN's control	Partly within JGN's control in terms of field response crew availability and depot dispersion across the network, although also depends on many other environmental factors	No
Not covered by another proposed measure	Related to SAIDI and SAIFI	No
Included in Victorian Asset Performance Index	No measure included for Victorian GDBs	No
Recommendation	Exclude from Contingent Payment Index	Exclude

A12. ESTIMATES OF METER READS

Potential basis of calculation

$$EstimationRate_t = \frac{\sum_{i=1}^{12} EREADS_i^t}{\sum_{i=1}^{12} TREADS_i^t}$$

where:

$\sum_{i=1}^{12} EREADS_i^t$ is the summation of the total number of estimated cyclic (non-daily) meter reads (i.e. monthly and quarterly read meters, and excluding special meter reads) for the Service Provider's network for the 12 months in Financial Year *t*;

$\sum_{i=1}^{12} TREADS_i^t$ is the summation of the total number of cyclic (non-daily) meter reads for the Service Provider's network for the 12 months in Financial Year *t*.

Criteria	Rationale / explanation	Supports inclusion
Highlighted in customer engagement	Engagement indicates customers want to reduce impact of estimated residential and small business meter readings	Yes
Relevant to capex program	Estimated reads are related to our meter replacement program and IT spend (life-cycle replacement is required to avoid data quality issues which can lead to estimated bills).	Yes
Not covered by existing other incentives or controls	Not covered, although note that estimated reads are provide to retailers, not end customers	Yes
Robust historical data exists	Yes, compliance reports were provided to the AER for the period May 2016 until January 2018	Yes
Can incorporate exclusions to avoid outliers in reported data	Within limited control, subject to appropriate exclusions for defined events such as 'acts of God' – severe storms, bushfires, floods, etc	Yes
Within JGN's control	Partly – there are some genuinely "uncontrollable events" that cannot be avoided that prevent meters being read. Meter readers assign an "uncontrollable skip code" for these events (e.g. locked gate, refused access)	Yes
Not covered by another proposed measure	Not covered	Yes
Included in	No measure included for Victorian GDBs	No

Criteria	Rationale / explanation	Supports inclusion
Victorian Asset Performance Index		
Recommendation	Include Contingent Payment Index	Include

Appendix B
Proposed Contingent Payment Index

Jemena

B1. PROPOSED CONTINGENT PAYMENT INDEX

The Contingent Payment Index is calculated for the 2020-25 Access Arrangement period as follows:

(1) Calculate the arithmetic average of the annual unplanned SAIFI for all customers for each of the four Financial Years from 1 July 2020 to 30 June 2024, measured for each year *t* as follows:

$$Unplanned\ SAIFI_t = \frac{\sum_{i=1}^{12} OUF_i^t}{(C^{t-1} + C^t)/2} \times 1000$$

where:

$\sum_{i=1}^{12} OUF_i^t$ is the summation of the total number of unplanned outages for all customers on the Service Provider's network sourced from annual reporting to the AER for the 12 months in Financial Year *t*;

C^{t-1} is the total customer numbers on the Service Provider's network at the end of the Financial Year *t* – 1 sourced from annual reporting to the AER;

C^t is the total customer numbers on the Service Provider's network at the end of the Financial Year *t* sourced from annual reporting to the AER.

(2) Calculate the arithmetic average of the annual unplanned SAIDI for all customers for each of the four Financial Years from 1 July 2020 to 30 June 2024, measured for each year *t* as follows:

$$Unplanned\ SAIDI_t = \frac{\sum_{i=1}^{12} OUD_i^t}{(C^{t-1} + C^t)/2} \times 1000$$

where:

$\sum_{i=1}^{12} OUD_i^t$ is the summation of the total number of consumer hours off supply lost through unplanned losses of supply for all instances on the Service Provider's network where 5 or more customers were affected sourced from annual reporting to the NSW Fair Trading for the 12 months in Financial Year *t*;

C^{t-1} is the total customer numbers on the Service Provider's network at the end of the Financial Year *t* – 1 sourced from annual reporting to the AER;

C^t is the total customer numbers on the Service Provider's network at the end of the Financial Year *t* sourced from annual reporting to the AER.

(3) Calculate the arithmetic average of the annual publicly reported leaks for mains and services per kilometre of main of the Service Provider for each of the four Financial Years from 1 July 2020 to 30 June 2024, measured for each year *t* as follows:

$$Mains + ServicesLeaks_t = \frac{\sum_{i=1}^{12} MAL_i^t + \sum_{i=1}^{12} SEL_i^t}{(L^{t-1} + L^t)/2}$$

where:

$\sum_{i=1}^{12} MAL_i^t$ is the summation of the total number of publicly reported mains leaks on the Service Provider's network sourced from annual reporting to the AER for the 12 months in Financial Year *t*;

$\sum_{i=1}^{12} SEL_i^t$ is the summation of the total number of publicly reported services leaks on the Service Provider's network sourced from annual reporting to the AER for the 12 months in Financial Year *t*;

L^{t-1} is the total length of mains in the Service Provider's network at the end of the Financial Year *t* – 1 sourced from annual reporting to the AER;

L^t is the total length of mains in the Service Provider's network at the end of the Financial Year *t* sourced from annual reporting to the AER.

(4) Calculate the arithmetic average of the annual publicly reported leaks for meters per customer for each of the four Financial Years from 1 July 2020 to 30 June 2024, measured for each year *t* as follows:

$$MeterLeaks_t = \frac{\sum_{i=1}^{12} MTL_i^t}{(C^{t-1} + C^t)/2}$$

where:

$\sum_{i=1}^{12} MTL_i^t$ is the summation of the total number of publicly reported meter leaks on the Service Provider's network sourced from annual reporting to the AER for the 12 months in Financial Year *t*;

C^{t-1} is the total customer numbers on the Service Provider's network at the end of the Financial Year *t* – 1 sourced from annual reporting to the AER;

C^t is the total customer numbers on the Service Provider's network at the end of the Financial Year *t* sourced from annual reporting to the AER.

(5) Calculate the arithmetic average of the annual poor pressure events for mains, services and meters per customer for each of the four Financial Years from 1 July 2020 to 30 June 2024, measured for each year *t* as follows:

$$PoorPressureEvents_t = \frac{\sum_{i=1}^{12} MAPPE_i^t + \sum_{i=1}^{12} SEPPE_i^t + \sum_{i=1}^{12} + MEPPE_i^t}{(C^{t-1} + C^t)/2}$$

where:

$\sum_{i=1}^{12} MAPPE_i^t$ is the summation of the total number of poor pressure events on mains for the Service Provider's network sourced from annual reporting to the AER for the 12 months in Financial Year *t*;

$\sum_{i=1}^{12} SEPPE_i^t$ is the summation of the total number of poor pressure events on services for the Service Provider's network sourced from annual reporting to the AER for the 12 months in Financial Year *t*;

$\sum_{i=1}^{12} MEPPE_i^t$ is the summation of the total number of poor pressure events on meters for the Service Provider's network sourced from annual reporting to the AER for the 12 months in Financial Year *t*;

C^{t-1} is the total customer numbers on the Service Provider's network at the end of the Financial Year *t* – 1 sourced from annual reporting to the AER;

C^{t} is the total customer numbers on the Service Provider's network at the end of the Financial Year *t* sourced from annual reporting to the AER.

(6) Calculate the arithmetic average of the annual rate of meter read estimation for each of the four Financial Years from 1 July 2020 to 30 June 2024, measured for each year *t* as follows:

$$EstimationRate_t = \frac{\sum_{i=1}^{12} EREADS_i^t}{\sum_{i=1}^{12} TREADS_i^t}$$

where:

$\sum_{i=1}^{12} EREADS_i^t$ is the summation of the total number of estimated meter reads for the Service Provider's network sourced from annual performance reporting for the 12 months in Financial Year *t*;

$\sum_{i=1}^{12} TREADS_i^t$ is the summation of the total number of meter reads for the Service Provider's network sourced from annual performance reporting for the 12 months in Financial Year *t*.

(7) Convert each of the averages from the measures in paragraphs (1), (2), (3), (4), (5) and (6) above into index scores using the following formula:

$$Index_n = 200 - \left(\frac{Actual_n}{Target_n}\right) \times 100$$

where:

$Index_n$ is the index score for each measure $n = 1,2,3,4,5,6$ corresponding to the measures in paragraphs (1), (2), (3), (4), (5) and (6) above respectively;

$Actual_n$ is the arithmetic average of the actual performance for each measure $n = 1,2,3,4,5,6$ calculated as per paragraphs (1), (2), (3), (4), (5) and (6) above;

$Target_n$ is the arithmetic average of the actual performance for each measure $n = 1,2,3,4,5,6$ as follows:

Unplanned SAIFI	$n = 1\ Target_1 = [3.242]$
Unplanned SAIDI	$n = 2\ Target_2 = [39.817]$
Mains and services leaks	$n = 3\ Target_3 = [0.157]$
Meter leaks	$n = 4\ Target_4 = [7.933]$
Poor quality events	$n = 5\ Target_5 = [0.895]$
Meter read estimation rate	$n = 6\ Target_6 = [0.114]$

(8) Calculate the weighted average of the index scores calculation in paragraph (7) above for each of the measures $n = 1,2,3,4,5,6$ according to the following weights:

Unplanned SAIFI	$n = 1$ [10%]
Unplanned SAIDI	$n = 2$ [10%]
Mains and services leaks	$n = 3$ [25%]
Meter leaks	$n = 4$ [15%]
Poor quality events	$n = 5$ [25%]
Meter read estimation rate	$n = 6$ [15%]

The resulting average is the **Contingent Payment Index**.

Appendix C
Capex mapping of measures

Jemena

C1. CAPEX MAPPING OF MEASURES

In the Victorian CESS development process, the AER had a preference for ensuring the asset performance index measures used in the CESS, adequately cover the breadth of the gas networks' capital expenditure. Having identified the candidate measures, Table C-1 assesses how they link to JGN's capital expenditure, RAB and other relevant incentives.

Table C-1: Mapping measures to the capital investment

Measure	Capex link	RAB link
Performance & reliability | Unplanned SAIDI	Mains replacement – better mains condition should reduce repair times 14% Mains augmentation – better capacity availability can reduce outages duration by supporting supply restoration via other parts of the network 5% Telemetry – better SCADA should reduce response times 0% ICT – Our planned life cycle replacement of our Enterprise Resource Planning, Customer Relationship Management and Incident Management Systems will ensure we maintain our capability to understanding the key drivers of network issues and the impact on customers. 11%	Mains and services 79%
Performance & reliability | Unplanned SAIFI	Mains replacement – better mains condition should reduce frequency of outages 14% Mains augmentation – better capacity availability reduces risks of pressure outages 5% Connections – more new assets and customers should lower the index result (i.e. divide by more customers, and helps lower the average age of the assets) 50% ICT – Our planned life cycle replacement of our Enterprise Resource Planning, Customer Relationship Management and Incident Management Systems will ensure we maintain our capability to understanding the key drivers of network issues and the impact on customers. 11%	Mains and services 79%
Leaks | mains & services	Mains replacement – better mains conditions through replacement should reduce leaks 14% Telemetry – better SCADA should assist in leak identification 0% Connections – more new services should lower the reported leaks on average 50% ICT – Our planned life cycle replacement of our Enterprise Resource Planning, Customer Relationship Management and Incident Management Systems will ensure we maintain our capability to understanding the key drivers of network issues and the impact on customers. 11%	Mains and services 79%
Leaks | meters	Meter replacement – newer meters will lower reported leaks 15% ICT – Our planned life cycle replacement of our Enterprise Resource Planning, Customer Relationship Management and Incident Management Systems will ensure we maintain our capability to understanding the key drivers of network issues and the impact on customers. 11%	Meters 9%
Service quality | confirmed poor supply	Mains replacement – better mains condition should reduce frequency of poor pressure events 14% Mains augmentation – better capacity availability reduces risks of poor pressure events 5%	Mains and services 79%

Measure	Capex link	RAB link
	Connections – more new assets and customers without adequate network capacity will drive a degradation in pressure outcomes for existing customers 50% ICT – Our planned life cycle replacement of our Enterprise Resource Planning, Customer Relationship Management and Incident Management Systems will ensure we maintain our capability to understanding the key drivers of network issues and the impact on customers. 11%	
Service quality | Estimated reads	Meter replacement – newer meters and meter data loggers will lower requirement for estimation 15% ICT – Life-cycle replacement of our IT infrastructure is required to avoid data quality issues which can lead to estimated bills. 11%	Meters and fixed plan 13%

Figure C.5-1: JGN forecast capex (which accounts for 27% of RAB)

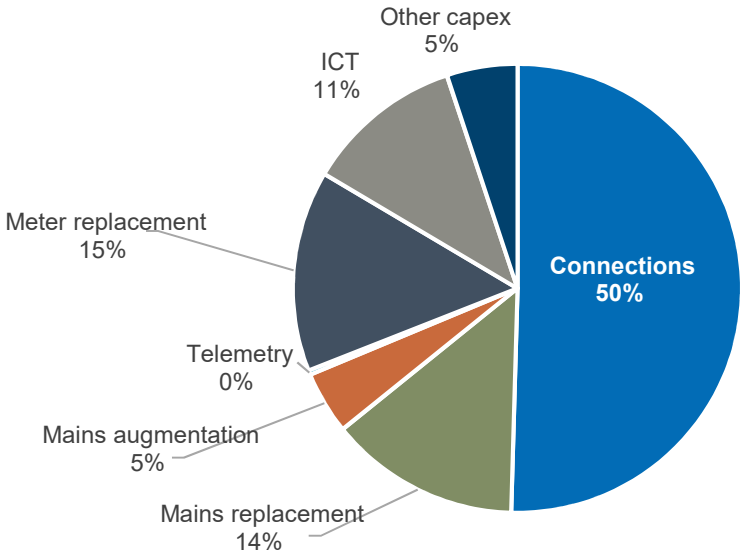


Figure 5-2: JGN's RAB as at 1 July 2020