

Review of incentives schemes for networks

Draft Decision – Analysis for Australian Energy Council

Key points



The basic framework employed by the AER – incentive-based regulation – is predicated on ongoing information asymmetry between regulator and the network service providers (NSPs) it regulates.



Despite this, the AER has played down the impact of information asymmetry on its ability to evaluate NSP forecasts and has missed an opportunity to utilise tools deployed by other regulators to elicit accurate forecasts. Its proposed solution of a “bright line” level of underspend at which incentive strength decreases will have no impact on forecasting accuracy.



The AER has also underestimated the potential for cost substitution between capital and operating expenditure. The emerging role of customer energy resources with the capability to provide services back to the grid has opened up a new opportunity for optimising between network investment and payments to customers and other service providers. This would be best achieved by clear parity of incentive strength between capital and operating expenditures.



A total expenditure (totex) framework could potentially be even more effective in driving NSPs to optimise total network costs, as it is doing in other jurisdictions such as the UK. However, this would be a very significant change of approach and require a rule change.



Service quality incentives such as the STPIS can be important counterweights to efficiency incentives. However, where NSPs are able to earn additional revenue on service quality, the implication is that they have had to spend extra resources to do so. But if they are simultaneously earning revenue on efficiency incentives, the AER should consider the risk that service quality targets have been set at a level too easy to achieve.

Introduction

Boardroom Energy has been asked by the Australian Energy Council (AEC) to review and comment on the Australian Energy Regulator's (AER) Draft Decision on its Review of Incentives.

The AER has largely decided to retain its existing incentive framework, with only minimal changes. The framework comprises:

- the Efficiency Benefit Sharing Scheme (EBSS),
- the Capital Expenditure Sharing Scheme (CESS) and
- the Service Standards Performance Incentives Scheme (STPIS)

The EBSS and the CESS are incentives to drive efficient levels of expenditure on operating expenditure (opex) and capital expenditure (capex) respectively, and the STPIS is an incentive to drive better service quality.

The AER's confidence in its existing incentive structures are driven by its view that it is successfully reducing the information asymmetry between itself and the network service providers (NSPs) it regulates; that its approach to benchmarking is an effective driver of efficiency; that there is little to no scope for substitution between opex and capex; and that requiring NSPs to explain outturn variances is an effective guard against overforecasting.

However, the AER has provided limited evidence to support these views or to address stakeholder concerns that – taken as a whole – the regulatory settlement may be unduly generous to NSPs. It has, accordingly, ignored a range of regulatory tools available to it that could more effectively address concerns around overforecasting and capex bias.

The AER's Draft Decision

The AER is consulting stakeholders on the performance of and potential changes to three specific incentive schemes:

- the Efficiency Benefit Sharing Scheme (EBSS),
- the Capital Expenditure Sharing Scheme (CESS) and
- the Service Standards Performance Incentives Scheme (STPIS)

The EBSS and the CESS are incentives to drive efficient levels of expenditure on operating expenditure (opex) and capital expenditure (capex) respectively and have been in place since 2013. The STPIS is an incentive to drive better service and has been in place since 2008.

The AER released a discussion paper in December 2021 and received a range of submissions from networks, consumers and retailers. The draft decision proposes modest changes to the schemes:

- EBSS - no change, but AER intend to “improve transparency about opex outcomes”.¹
- CESS - varying the sharing factor (currently 30% for all underspend and overspend) to allow an NSP to retain only 20% of savings for any underspend that exceeds 10% of its capex allowance, greater transparency of the reasons for actual capex variations from the allowance.
- STPIS - retain, but review the transmission STPIS later this year.

As set out in the next section, when considering the impact of expenditure schemes, the AER needs to take a holistic look at how its regulatory tools are working. This point has already been made by other stakeholders in this review.

Taking a holistic overview is not easy for the AER to do. Analytically, the challenge is setting up a reasonable counterfactual – what would be the outcomes if the AER had done things differently? The ambiguity in this precludes definitive judgments, however, there are two broad indicators that suggest that framework could be improved in customers’ favour.

AER’s own analysis of outperformance indicates a premium of around 1 per cent return on assets has been achieved on average. This is effectively an additional return to equity. Given the current risk premium to equity (i.e. the premium above the risk-free rate) is only 3.6%, this is a material increment. This suggests that the balance of incentives favours the networks, especially given the incentive properties of the framework are structured to be symmetrical.

AER’s productivity analysis indicates a rising trend for opex but a declining trend for capex. This suggests incentive properties of the current regulatory settlement are better at driving opex efficiency than capex efficiency. However, it does not follow from this observation that capex incentives specifically need to be strengthened relative to opex incentives, or that the opex framework is not capable of further improvement. It is also hard to reconcile falling capex productivity with capex outperformance – while not definitive evidence of excess ex ante allowances, it does suggest that more work may be required to ensure efficient capex forecasts.

Incentives and incentive properties

In evaluating incentive schemes, it’s important to consider how the regulatory settlement would operate in their absence. The AER’s approach is a variant of incentive-based regulation, where an ex ante revenue allowance is set for a regulatory reset period (typically five years) and the NSP is incentivised to find cost savings. Absent specific incentive schemes, the savings are retained to the end of the reset period and then the AER adjusts the Regulatory Asset Base (RAB) in the case of capex, or factors the observed opex savings into its base year analysis for the next period. In this way, customers get the benefit of lower future prices in return for the NSP being able to earn extra profit in the current period. So the basic framework has *incentive properties* even if it does not have specific incentive schemes in place. The other elements of the process by which allowed revenue is determined, such as the methods for estimating efficient costs ex ante, whether there are revenue drivers, pass-through, re-openers or other uncertainty mechanisms, service quality standards and penalties for failing

¹ AER, Draft decision - review of incentive schemes, December 2022, p18

to meet them, etc. all have incentive properties too. So, it's important to consider the whole framework holistically in evaluating incentive schemes and their effectiveness.

To that end, the AER's proposal to consider large transmission projects separately reflects the fact that the revenue allowances for these projects may be set differently (i.e. often via the contingent project application (CPA) process outside of a normal reset, and with tenders for major works already carried out) and so they may be subject to different incentive properties from other capex. However, the AER will need to carefully consider what the incentive properties of alternative approaches are, how they interact with the CESS, and how they will protect consumers from the risk of bearing excess costs. For example, if a large project's cost estimate includes a share of general overheads, there may be perverse incentives to allocate more or less overhead to the project if the project is subject to different incentive arrangements for the rest of the capex.

A fuller discussion of incentive-based regulation and incentive properties can be found at Appendix A to this report.

The importance of accurate forecasting

Under the AER's propose-respond building block approach², where an NSP's forecast is a key input into the determination of the allowance, the regulator must consider ways to elicit accurate forecasts. The underlying incentive is for the NSP to over-forecast, resulting in higher revenue allowances and easier cost incentive targets. This is not to make any specific allegations against Australian NSPs, but it's important to retain the logic of incentives in evaluating an IBR framework.

However well-calibrated the incentives are, if the baseline expenditure is set too high, then incentive payments will be poor value for customers' money.

The AER considers it has made progress over recent years to reduce the information asymmetry that can result in inaccurate forecasts and excess allowances. The draft decision asserts that information asymmetry "inevitably reduces over time as we progressively better understand how each NSP operates in practice".³ The evidence presented includes a comparison of aggregate forecast and actual capex from 2010-2021 (figure 5 in the draft decision). Strictly speaking this is not the correct metric. In some cases individual NSP's actual costs may exceed the forecast. This is still a variance between forecast and actual albeit in the opposite direction. Accordingly, a better metric would be the sum of the *absolute* differences between forecast and actual for each *individual* NSP regulatory period.

It's also unclear what the extent of stochastic variation between forecast and actual might be and therefore what might be the true underlying trend.

There are two further concerns with this assertion by the AER. Firstly, if the AER has indeed reduced the information asymmetry, then that is welcome, but it is unlikely to have fully eliminated it. Indeed, the AER admits as much in its consideration of changes to the CESS, noting: "Despite improvements in our

² See Appendix 1 for an explanation of this approach.

³ AER, Draft decision - review of incentive schemes, December 2022, p22



assessment toolkit and stakeholder engagement, a level of information asymmetry between us, consumers and the NSPs remains. Therefore, the risk of over forecasting capex requirements remains higher than under forecasting.⁴

Secondly, and perhaps more pertinently, the energy sector is experiencing a period of significant transition. Patterns of bulk generation are changing (as reflected in the discussion over the appropriate targets for the market impact component of the STPIS); customer energy resources (CER) are leading to greater two-way flows and changing load profiles on distribution networks, and gas networks are facing existential risks due to decarbonisation unless they can successfully pivot to transporting zero emission gases such as clean hydrogen or biogas.

This means that the sector is facing unprecedented uncertainty. To that end, it has become harder for any party, including the NSP, to “know” what the efficient level of expenditure is. In one sense this makes the AER’s task impossible, in another sense it makes it all the more important to structure the incentive properties of the framework in the best way possible to elicit a response from NSPs that uncovers the efficient level of costs over time. This includes both the design of specific cost incentive schemes and the way in which initial allowances are determined.

Fortunately, the AER does not have to reinvent the wheel. There are several examples of regulatory approaches to incentivise better forecasts or to use regulatory tools such as benchmarking and productivity factors to drive stronger efficiencies. The former are typically aimed at capex while the latter at opex.

Menu regulation

A tool that has been used in the UK and elsewhere to drive accurate capex forecasts is menu regulation. Under menu regulation a set of choices for the regulated business is designed in such a way to elicit accurate forecasts because the regulated business will obtain the best outcome for itself if it chooses consistent with its own best forecast.

This can be illustrated through a type of menu regulation used by Ofgem over multiple price resets called the Information Quality incentive (IQI). The IQI was aimed at eliciting accurate capex forecasts. Ofgem scrutinised the NSPs’ initial business plan and in a similar manner to the AER responded with a set of downward adjustments. Having obtained a “baseline” forecast, Ofgem invited the NSPs to submit a revised business plan. The ratio of the revised business plan to the Ofgem baseline then dictated which column of the IQI an NSP would end up with. This determined the allowed expenditure (expressed as a ratio to the baseline), an efficiency incentive rate (the proportion of overspend/underspend that the business would retain) and an additional income figure (which for higher ratios was a negative figure). These parameters were calibrated so that the maximum reward an NSP could obtain would be when its outturn capex matched its forecast. That is, if it deliberately submitted a higher cost business plan, the lower efficiency rate and additional income parameters would leave it with less income ex post, even though it would have a slightly higher ex ante income. This is illustrated in the table below.

⁴ Draft decision, p28



Figure 1: Example IQI

1. Business plan:baseline	100	105	110	115	120	125	130	135	140
2. Efficiency incentive rate (%)	40	38	35	33	30	28	25	23	20
3. Allowed expenditure:baseline	105	106.25	107.5	108.75	110	111.25	112.5	113.75	115
4. Additional income:baseline	2.5	2.1	1.6	1.1	0.6	-0.1	-0.8	-1.6	-2.4
Total reward:baseline									
Actual expenditure:baseline									
70	16.5	15.7	14.8	13.7	12.6	11.3	9.9	8.3	6.6
80	12.5	11.9	11.3	10.5	9.6	8.5	7.4	6.0	4.6
90	8.5	8.2	7.8	7.2	6.6	5.8	4.9	3.8	2.6
100	4.5	4.4	4.3	4.0	3.6	3.0	2.4	1.5	0.6
105	2.5	2.6	2.5	2.3	2.1	1.7	1.1	0.4	-0.4
110	0.5	0.7	0.8	0.7	0.6	0.3	-0.1	-0.7	-1.4
115	-1.5	-1.2	-1.0	-0.9	-0.9	-1.1	-1.4	-1.8	-2.4
120	-3.5	-3.1	-2.7	-2.5	-2.4	-2.5	-2.6	-3.0	-3.4
125	-5.5	-4.9	-4.5	-4.2	-3.9	-3.8	-3.9	-4.1	-4.4
130	-7.5	-6.8	-6.2	-5.8	-5.4	-5.2	-5.1	-5.2	-5.4
135	-9.5	-8.7	-8.0	-7.4	-6.9	-6.6	-6.4	-6.3	-6.4
140	-11.5	-10.6	-9.7	-9.0	-8.4	-8.0	-7.6	-7.5	-7.4

Source: Oxera, *Assessing approaches to expenditure and incentives*, 2007

The arithmetic properties of the IQI are not in doubt. The main objections to it are likely to be as follows:

1) It has been frequently described as complex, including by Ofgem itself. However, the operation of the incentive can be illustrated by the matrix table above, which indicates it is not that complex. The most complex component is the determination of the baseline, but this has to take place under building block regulation anyway. In fact it avoids the complexity of a second evaluation of the revised business plan because the matrix does all the work.

2) It ostensibly awards the NSP a higher allowance than the regulator's assessment of efficient costs (which for the AER would be in conflict with the rules). In practice, Ofgem knew that its first assessment was relatively aggressive and it typically moved closer to the NSP's forecast in its final assessment because the NSPs had more time to develop their arguments objecting to Ofgem's forecast. So the apparent generosity of the mechanism is somewhat illusory. In any case it may be possible to design the parameters to be less "generous" while still retaining the incentive properties of the matrix to elicit accurate forecasts.

Fast-tracking

An alternative inducement to forecast accurately is to fast-track initial business plans that are capable of acceptance. A key factor in this approach is usually that the NSP can show that it has tested its business plan with consumers and obtained their approval. This dovetails well with the AER's increasing focus on NSPs seeking consumer input to their business plan and indeed there is now scope for NSPs to seek an early signal pathway.⁵ Fast-tracking does not necessarily avoid all regulatory scrutiny, but could significantly reduce it, saving all parties resources and giving NSPs a reason to seek the fast track.

Benchmarking and productivity factors

A further alternative, more oriented to opex, is to rely less on NSPs' business plans and more on benchmarking and productivity assumptions. There is a lot of scope for the AER to put more weight on benchmarking and require all NSPs to attain frontier performance in order to earn their cost of capital - currently the AER allows NSPs to be 25% less efficient than its benchmarking indicates is the efficiency frontier. If the AER's assertions that it has reduced information asymmetry are correct then it should be able to be confident enough in its benchmarking to require all NSPs to be much closer to the frontier. Where it considers it unduly harsh to require this immediately, it could use higher productivity factors for less efficient NSPs to drive them towards the frontier over time. Stakeholder recommendations to this review are consistent with this type of approach, including:

- Increased productivity assumptions or a sliding scale of EBSS incentive rates based on NSP's productivity proposals (CCP) and
- linking productivity assumptions to benchmark performance (NICE).

⁵ AER, Better resets handbook, December 2021, p9



The AER's bright line approach to the CESS

One tool that is unlikely to be effective is the AER's proposed "bright line" approach to varying the strength of CESS incentives. The proposal is that if an NSP underspends its capex forecast by more than 10% it receives a reduced incentive rate on underspending beyond the 10% (a 20% sharing factor instead of the standard 30%). The AER asserts that this "will reduce incentives for NSPs to overstate their expenditure requirements by reducing CESS payments (compared to the current CESS) when outperformance is high." But since the application of the revised CESS is not dependent on whether an NSP makes a high forecast or not, it does no such thing, as this worked example should illustrate.

Consider two NSPs who both expect to incur \$100 capex in the next regulatory period. NSP A includes \$100 in its business plan, while NSP B includes \$110. AER accepts both forecasts. Due to unexpected factors both NSPs eventually spend \$90. Under the revised CESS, NSP A has just reached the 10% underspend threshold and so receives $(\$100 - \$90 \times 30\%)$, or \$3 under the CESS. Its total income is thus \$103.

NSP B has exceeded the threshold. It thus receives $(\$110 - \$99 \times 30\%) + (\$99 - 90 \times 20\%)$, or \$5.10. Its total income is thus \$115.10 and it has been amply rewarded for its excess forecasting.

Transparency measures

The AER has also proposed to require NSPs to be more transparent in their reasons for outturn variances. This is a relatively low-cost approach. But it has some cost and continues a trend of the AER seeking to solve problems in the regulatory framework with yet more regulation.

It also is likely to be of limited value. If an NSP had deliberately overforecast, it is unlikely to reveal this fact when providing justification for an outturn variance. If it is a stochastic variation, then the NSP's explanation is likely to be some version of "things worked out differently than we expected" which provides limited insight.

In any case, the proposed capex transparency measure should be on variations to NSP's forecast not the AER's allowance, which is what the draft decision appears to suggest. The variation to its own forecast is what the NSP can and should be accountable for. Reconciling outturn to the AER allowance also puts too much weight on the idea that the AER's allowance represents a substitute business plan.

One area where greater transparency may be fruitful is the trend to involving independent consumer panels in resets. The AER cites AusNet's step down in capex forecasts following its NewReg trial. It's not possible to draw firm conclusions on cause and effect from a single pilot of course. But another example might be the current Victorian gas distribution resets in which the NSPs responded to customer feedback by removing hydrogen readiness expenditure from their business plan. Even if customer panels are having some positive effect, they represent a complement rather than a substitute for regulatory scrutiny and appropriate incentives.



Balancing efficiency incentives

A key rationale for designing specific efficiency incentives is to ensure a balanced incentive between capex and opex expenditures. The extent to which this is important depends on two factors. The first is how easy it is for NSPs to allocate or apportion costs such as general overheads between capex and opex. Concerns about their ability to police the boundary between capex and opex was a material driver of Ofgem's introduction of the totex approach (see below)

The second is to what extent there are opportunities for NSPs to genuinely substitute between opex and capex.

The AER seems unconcerned by either factor, stating that because NSPs have asserted there is little scope to affect the allocation of costs, that "there is little scope for the imbalance in sharing ratios to distort NSP behaviour."⁶

This assertion is somewhat unconvincing, given its reliance on NSP assertions regarding cost classification and completely ignores the possibility of genuine substitution.

NSPs have substantial amounts of overheads, much of which is capitalised. At a minimum, it appears likely that there is some scope for NSPs to influence the extent of capitalisation, or of allocation of costs into the overheads pool. ICT costs are also becoming increasingly relevant to NSP expenditure, and while hardware may be straightforwardly capex, there may be less clarity around software, especially as providers increasingly move to software-as-a-service.

Some activities consist of a mixture of capex and opex. For example, Ausgrid's recently published proposal includes a diagram of its costs that identifies four expenditure programs that are a blend of opex and capex: CER, Cyber security, Enterprise Resource Platform and Customer Information Systems.⁷ Collectively, these account for over \$400m of costs.

It is also highly probable that there are opportunities to substitute between opex and capex and that these opportunities may be increasing with the rise of CER. Payments to customers (or retailers, or generators/storage in the case of transmission) for them to use their resources in ways that benefit the network could be an efficient substitute for capex in some cases. Even in the case of more traditional expenditure options, there is a balance between replacement and upgrade capex versus monitoring and maintenance opex. Where there is increasing uncertainty as to whether there will be ongoing capacity growth, such as on the gas networks, balancing these trade-offs becomes increasingly important

Note that incentives typically are intended to operate at the margins and so it is not necessary that all or most of an NSP's cost base to be substitutable for there to be merit in formally equalising incentive rates.

There are two ways to seek to equalise efficiency incentives. The first is to attempt to directly equalise by ensuring the same incentive rate between the two types of expenditure. This is simply a matter of arithmetic. As AER notes, when the EBSS and CESS were first used together, the CESS was fixed at 30% partly in order to align with the strength of the EBSS. The decline in the rate of return has reduced the strength of the EBSS to closer to 20%.

⁶ AER, Draft decision - review of incentive schemes, December 2022, p17

⁷ Ausgrid, 2024-2029 Regulatory proposal, January 2023, p62



In practice it is a simple matter of arithmetic to set the EBSS at a fixed value, and thus equalise it to the CESS. The AER would just have to calculate the net present value (NPV) of opex saving (or overspend) at the end of the reset period and then make a revenue adjustment up or down in the next period to achieve the desired percentage incentive rate. This was Ofgem's practice before it moved to a totex approach (see below). Given this is a low cost solution there appears no reason why the AER should not apply it, even if it is uncertain how important incentive equalisation is in practice.

Totex approaches

The second approach is to adopt a total expenditure (totex) approach that seeks to sidestep the risk of differences between capex and opex by applying efficiency incentives to all costs together. A useful resource to understand in detail how totex approaches have been used by other regulators is a report prepared by Frontier Economics for the AEMC in 2017 examining totex frameworks.⁸ Countries such as the Netherlands and Germany have been applying totex incentives for many years. Both continue to set separate ex ante opex and capex allowances, but the ex post incentives are applied to total expenditure. This goes some way to addressing issues with inefficient capex/opex substitution and also negates any attempt to allocate actual costs to one type of expenditure rather than another (although this could assist with obtaining higher allowances in the next reset period, depending on the method for determining ex ante allowances).

British regulators Ofgem and Ofwat have gone further still, implementing ex ante totex frameworks. While there is some consideration of expenditure along capex and opex lines for the purposes of benchmarking, for example, the allowance is based on an amount of total costs with a fixed percentage treated as "fast money" - recoverable in each year of the reset period and "slow money" - added to the RAB and depreciated over a weighted average asset life. Key to the proportional allocation is a financeability assessment, which was already a component of these regulator's assessment before they adopted a totex approach.

Were the AER to seek to apply such an approach, it would require changes to the rules which currently specify that the AER must make an allowance for each of capex and opex. The AER has also only used financeability in a very limited way (as a cross check in its rate of return instrument process) and would need to develop its financeability assessment further.

Nonetheless, the AER has been unduly dismissive of both the need for equalisation of efficiency incentives and consideration of the methods that could be used to achieve them. In particular there would be value in understanding the evidence from other regulators of what impact such approaches have had on cost management.

Service Quality Incentives

Ensuring service quality levels are maintained – and improved when it is cost-effective to do so – are a useful counterbalance to the risk that efficiency incentives drive networks to underspend and allow the network to degrade over time. The AER proposes to retain its long-standing STPIS incentive for

⁸ Frontier Economics, Total expenditure frameworks, December 2017



reliability. It is also introducing a new small-scale incentive scheme (SSIS), with networks empowered to propose specific scheme design, and has a demand management incentive scheme (DMIS) too. The growth in service quality incentives increases the importance of calibrating them correctly.

Transmission networks are seeking a review of the market impact component (MIC). This may be justifiable, but the fact that this appears to be the only change sought by networks, is indicative of the role of information asymmetry in incentive design. Networks will undoubtedly highlight cases where incentive schemes have become unfavourable to them, but have no reason to highlight cases where schemes are unduly generous. The AER needs to bear this asymmetry in mind when considering proposals for the SSIS.

Notably, the STPIS has been a source of significant additional revenue for electricity distribution networks. While consumers have enjoyed reliability improvements, which has driven the incentive payments, the AER cannot be sure that the reliability improvements would not have happened in any case. Presumably, if they are incremental improvements, NSPs had to incur extra costs not in their business plans to achieve them. Yet, NSPs have generally outperformed on the efficiency side as well. Unsurprisingly, consumers may wonder how they can tell they are getting value for money for these incentive payments. The AER should examine opportunities to tighten STPIS targets with the expectation that outcomes will be closer to a net payment of zero, or that NSPs that perform well on the STPIS are performing less well on efficiency incentives (because it is more cost effective for them to improve reliability than to make extra efficiency improvements).

Next steps

To summarise the preceding discussion, this report recommends that the AER:

- Consider greater use of regulatory tools such as menu regulation to better incentivise accurate capex forecasting.
- Apply its benchmarking results more directly, to drive opex efficiency of all networks closer to the frontier.
- Abandon its “bright line” step down in capex incentive strength for large underspends.
- Equalise incentives for capex and opex, by the simple expedient of setting the EBSS strength at 30 per cent.
- Carry out a review of totex approaches to consider whether they are appropriate in the Australian context.
- Calibrate the STPIS scheme to minimise the risk of windfall gains to NSPs (or windfall losses, though this seems less likely).
- Clearly specify the incentive properties of any proposed alternatives to applying the CESS to large transmission projects.
- Transparency requirements should aim for a comparison between NSP forecasts and outturn costs, rather than AER allowances and outturn costs.



Appendix 1: Introduction to incentive-based regulation

To evaluate regulatory incentive schemes, it's important to understand how they fit into an overall regulatory framework, what they are expected to achieve and what the counter-factual outcome would be if they were not in place.

The Australian Energy Regulator (AER) uses a basic framework known as incentive-based regulation (IBR) in setting the allowed revenues for the energy networks it regulates. Under IBR, the regulator sets an ex-ante maximum revenue allowance for each business it is regulating, usually expressed as an annual amount for each year of a multi-year period (typically five years). This creates an incentive for the business to spend less than the allowance, which enables it to make extra profits. The value to the customers of the business is that by incurring lower expenditure it is revealing information to the regulator that allows it to set lower allowances in the next regulatory period. A key premise of network regulation is asymmetry of information – that the network knows better than the regulator what its efficient costs look like (and even the network is operating under uncertainty). So it is not an option for the regulator to simply be better at setting revenue allowances. It has to rely in part on incentivising the network to be efficient and in so doing reveal its efficient costs.

There are many variants of IBR. One is whether the allowance is set at the level of total revenues or of prices. Fundamentally, the incentives to reduce costs exist in both cases, albeit in the latter case there is also an incentive to generate additional volumes, since this results in greater revenue. Accordingly, the remainder of this paper will focus on revenue regulation rather than price regulation unless otherwise specified, noting that the arguments are generally applicable in both cases.

A key component of IBR is the method used to determine revenues. There are two broad approaches: CPI-X and building blocks.

CPI-X regulation

The first is known as CPI-X or RPI-X where CPI/RPI are measures of price inflation across an economy.⁹ This acknowledges that the NSP faces underlying upward cost pressures due to inflation but that (as is demanded of competitive firms in an economy) inflation is offset by productivity gains (the “X” factor in CPI-X). The advantages of this approach include its simplicity and the fact that it continues to drive the costs of the regulated business down, across multiple price control periods (providing the regulator is able to maintain a positive X-value). Another key advantage is that it does not require the regulator to attempt to overcome the significant information asymmetry between it and the regulated business because it does not require the regulator to evaluate a detailed business plan.

Building block regulation

⁹ CPI or the consumer price index is the prevalent inflation metric in Australia so this term is used here, however, the term originated in the UK at a time when the retail price index (RPI) was the prevalent inflation metric there. Determining which measure of inflation to use can itself be the subject of much regulatory debate.



The alternative, which is used by the AER (and many other regulators), is a building block approach. This entails making forecasts of expenditure, of financing costs, depreciation rates and tax payments. These building blocks are then combined to determine allowed revenue. Typically the regulator requires detailed business plans from the business in order to inform its allowances. It will then scrutinise, challenge and potentially adjust the business plans where it is not convinced that expenditure is justified. This element of the process is typically called propose-respond.

The building block approach is much more resource-intensive than CPI-X and requires that the regulator is confident it can substantially address the information asymmetry in its evaluation of business plans. Its advantage over CPI-X is that it is more flexible in responding to industry developments that might lead to a step change in costs. More often than not, though, step changes in costs are upward, which can lead to consumers doubting the regulator's ability to effectively control costs and drive efficiency.

Absent any specific incentive designs, there are incentives under a building block approach to spend less than the regulatory allowance on both operating expenditure (opex) and capital expenditure (capex). The determinants of the strength of the incentives are set out in greater detail in the next section; however, the point is that it is better to think in terms of the *incentive properties* of a regulatory settlement rather than simply in terms of specific incentive design. These incentive properties are a consequence of the overall design of the framework, and ideally should be designed to drive the NSP to minimise its total long-term expenditure while meeting its service requirements (and other relevant obligations, e.g. safety). Achieving this requires a combination of regulatory tools. These include:

- Setting challenging but realistic cost targets for networks at or near the efficiency frontier.
- Setting similar targets for less efficient networks, noting that these may be very hard to achieve initially.
- Incentivising ongoing efficiency gains by networks.
- Being able to capture savings in one period for customers in the next period.
- Setting an unbiased rate of return, i.e. just enough to allow an efficient network to finance its activities.
- Setting challenging but realistic targets for service levels (where these are determined by the regulator. Monitoring to ensure these targets are achieved.
- Mechanisms for managing uncertainty (such as pass-through, re-openers), noting that these should aim for symmetry.
- Being able to detect - via output measures for example - any signs of inefficient deferral of expenditure leading to long-term degradation of the network.

Incentive strengths

Under a basic building block approach, the incentive strength will vary both between opex and capex and when in the period the saving is made. For opex, the saving is retained in full by the NSP and if it is a recurring saving will continue until the next price control. So the earlier in the period the stronger the incentive to save (in practice, given that the next price control is determined before the end of the previous one, the final year becomes the best time to make savings as these will be allowed to persist until the end of the next price control).



In the case of capex, the building blocks approach is set up so that the NSP recovers the cost of a capex investment over time through regulatory depreciation. This means that it also needs to receive a return on capital invested on the undepreciated balance. So the strength of the incentive depends on which year of the price control it makes the capex saving, the allowed rate of return and the depreciation rate (which may vary depending on the asset class).

The variation in incentive strength between different years of a price control period is known as periodicity, and regulators have long been concerned that it could drive an inefficient cyclical spending pattern that is not in customers' interest. Additionally there has been concern that there may be materially different incentive strengths between opex and capex which may distort spending decisions.

Accordingly, regulators including the AER have sought to address concerns re periodicity and differences in incentive rates by designing specific incentive schemes: "Our incentive guidelines supplement the price and revenue cap framework to provide even incentives for efficiency through the regulatory period"¹⁰

But these specific incentive schemes still work in conjunction with the other incentive properties of the regulatory framework, and so it is essential to think about the whole framework when considering the effectiveness of the CESS/EBSS.

It's also important to consider the overall *results* of the regulatory framework, which inform stakeholder views on the individual elements. The AER's own analysis indicates that across several years, electricity NSPs' actual returns have exceeded their allowed cost of capital by 1-2% (100-200 basis points)¹¹. As the AER noted in its discussion paper, "Between 2013 and 2020, the regulated rate of return declined from around 6 per cent to around 3 per cent (in real terms)"¹². In a context of recent very low returns on equity (as low as 3% real return on equity) that is a significant gain for NSP shareholders. Consumer representatives have expressed concern that this may indicate the overall framework is over-generous.

This is important context for the AER's review of incentive schemes. While the AER notes that the aggregate impact of the three specific incentive schemes is a modest 2 per cent of overall revenues for the past 5 years¹³, consumer concerns are likely to be broader and encompass the risk that some of this reward may be "money for nothing" because cost allowances have been inadvertently set too high (or STPIS targets have been set at a level too easy to achieve). Accordingly, any review of the incentives should also encompass how the costs/targets are set.

¹⁰ AER, Draft decision - review of incentive schemes, December 2022, p5

¹¹ AER, Electricity network performance report, July 2022 and AER, Gas Network performance report, December 2022

¹² AER, Discussion Paper – review of expenditure incentive schemes, December 2021, p35

¹³ AER, Draft decision - review of incentive schemes, December 2022, p5

List of sources:

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