Australian Energy Market Commission

RULE CHANGE

DRAFT RULE DETERMINATION

National Electricity Amendment (Optimisation of Regulatory Asset Base and the Continued Use of Fully Depreciated Assets) Rule 2012

National Gas Amendment (Optimisation of Regulatory Asset Base and the Continued Use of Fully Depreciated Assets) Rule 2012

Rule Proponent(s)
Major Energy Users Inc.

Commissioners
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Henderson
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21 June 2012

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For and on behalf of the Australian Energy Market Commission

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About the AEMC

The Council of Australian Governments, through its Ministerial Council on Energy (MCE), established the Australian Energy Market Commission (AEMC) in July 2005. The AEMC has two principal functions. We make and amend the national electricity and gas rules, and we conduct independent reviews of the energy markets for the MCE.

Summary of draft rule determination

The Australian Energy Market Commission (AEMC or Commission) has determined not to make a rule in response to the Major Energy Users Inc.'s (MEU) rule change requests regarding optimisation of the asset base and continued utilisation of used and useful assets.

The MEU claims that National Electricity Rules (NER) and National Gas Rules (NGR) allow actual capital expenditure (capex) into the asset base with little or no review. The proposed rules intend to ensure consumers only pay for what is necessary by asking the regulator to periodically review the existing asset base to ensure that the assets are only included in the asset base to the extent they are utilised. In addition, the proposed rules would oblige the AER to reject replacement of an asset that can be used productively for further service, even if it is at the end of its economic life.

The Commission acknowledges that energy prices, particularly electricity prices, have risen significantly in recent years and that this has had an impact on consumers, both large and small. Against this background, it is understandable that consumers are seeking ways to address rising prices, such as by seeking to ensure that the economic regulation of network services is undertaken as effectively as possible. In the present case the MEU is requesting an adjustment to the rules regarding the asset base.

However, the Commission does not consider that the MEU has adequately established that the specific problems raised in its rule change requests warrant the solutions it has proposed. The theoretical arguments put forward by the MEU to establish the problems do not appear to reflect the full range of incentives in the NER and NGR. In addition, the MEU's intent that regulated businesses should have incentives to operate as competitive businesses fails to recognise the obligations of regulated businesses to provide services that competitive businesses do not have. This includes obligations to meet reliability standards.

Stakeholders have also not provided evidence to demonstrate that the problems are borne out in practice.

Broadly, the specific problems identified by the MEU could be seen as part of an overall concern of some stakeholders about over-investment in networks and pipelines. The Commission is considering this general problem in electricity in dealing with rule change requests from the Australian Energy Regulator (AER) on network regulation. Among other things, the Commission is doing further work to establish the extent to which, and reasons for why, service providers may overspend against their expenditure allowances. The Commission agrees that some areas of the NER could benefit from enhancement and will address this in its draft rule determination in respect of the AER's rule change requests.

In respect of gas, there are already mechanisms that exist under the NGR which could be used to address the specific concerns of the MEU.

The Commission has also considered the solutions proposed by the MEU. In short the Commission does not consider that these rules would contribute to the National Electricity Objective/National Gas Objective for the following reasons:

- they could increase risk to service providers and thus provide disincentives for future efficient investment;
- they would likely increase the complexity and costs of the regulatory process, reducing its efficiency; and
- they would require the regulator to take a too detailed role in approving a service provider's projects and plans.

Stakeholders are invited to make written submissions in response to the Commission's draft rule determination by 3 August 2012.

Under the National Electricity Law and the National Gas Law, any interested person or body may request that the Commission hold a hearing about the draft rule determination. Any request for a hearing must be made in writing and must be received by the Commission no later than 28 June 2012.

Submissions and requests for a hearing should quote project number "ERC0136/GRC0013" and may be lodged online at www.aemc.gov.au or by mail to:

Australian Energy Market Commission
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SYDNEY SOUTH NSW 1235

Contents

1 MEU's rule change requests

1.1 The rule change requests

In November 2011, the Major Energy Users Inc. (MEU) made requests to the Australian Energy Market Commission (AEMC or Commission) to make rules regarding the optimisation of the asset base[1] and retaining useful assets past their economic life (rule change requests).

The MEU has submitted two requests, one in respect of electricity and one in respect of gas. These requests seek almost identical changes, and are based on the same rationale. As a result, most of this draft rule determination considers these requests together. References to "rules" refer to both the National Electricity Rules (NER) and the National Gas Rules (NGR) unless otherwise stated.

1.2 Rationale for the rule change requests

This section sets out the problems which the MEU believes exist and its rule change requests are designed to address.

Optimisation of asset base

The MEU claims that NER/NGR allow actual capital expenditure (capex) into the asset base with little or no review. The MEU states that there is an implicit incentive on a service provider to maximize its asset base, and therefore profit by building assets which are too large. The proposed rules aim to address this by introducing optimisation for these assets.

In its rule change requests, the MEU has drawn a distinction between competitive and regulated businesses. The MEU states that in a competitive environment a firm would not be able to recover the whole cost of the assets that are under-utilised, as consumers would not be willing to pay for this over-investment and would move to competitors. In contrast, under the current rules, the MEU is concerned that actual capex is allowed to be included in the asset base with little or no review, and there is no requirement in the rules to assess whether the assets provided are appropriately sized for the service being provided.[2] This is likely to be increasingly significant as a result of policies such as those relating to climate change which may mean assets will become under-utilised and possibly redundant. Consumers would be required to pay a rate of return to service providers for assets that are under-utilised or not utilised. In the MEU's view this is not intended by the National Electricity Objective (NEO) or the National Gas Objective (NGO).[3]

The MEU considers it is inefficient for consumers to pay for assets which are not used or significantly under-utilised. Therefore, there should be an incentive on service

1 The term "asset base" is used in this document to refer to both the regulatory asset base under the NER and the capital base under the NGR.

2 MEU, Optimisation of Asset Base and Use of Fully Depreciated Assets Rule change request, October 2011, pp. 9, 10.

3 Id, p. 7.

providers[4] not to over invest in assets. However, it is accepted that it may be more efficient to build an under-utilised asset if there is a strong expectation that in the next few years the spare capacity will be utilised, subject to justification through a test or checks.[5]

Continued use of fully depreciated assets

The MEU also states that in a competitive market, service providers would not replace assets which are still useful. The MEU considers that an asset should be retained by the service provider if it is still useful, even if it is fully depreciated. That is, fully depreciated assets should not automatically be replaced by new assets if existing assets are useful. However, the MEU is concerned that the automatic replacement of fully depreciated assets is incentivised under the current rules because there are no regulated returns derived from a fully depreciated asset.[6]

Under the current rules, regulated revenues are set ex ante by the regulator for a regulatory period.[7] Depreciation and return on capital are calculated based on the asset base. If an asset is at the end of its financial life, any use beyond this time will not derive any regulated revenues for the business. That is, this asset is excluded from the asset base.[8]

1.3 Solution proposed in the rule change requests

The rule proponent proposes to resolve the problems discussed above by making rules that:

- require the regulator to review the valuation of all assets when assessing the asset base as part of a regulatory determination[9] to ensure that the value of the assets used reflects the minimum value necessary. This would provide a limitation to ensure that only necessary assets, appropriately sized for the service, are included in the asset base. The asset base would only allow a return on assets to the extent they are used; and
- require the regulator to take steps to assess the requirement for replacement of an asset and not approve the replacement of the assets that are still functional. This would limit the replacement of assets which are still useful, thereby avoiding over-investment.

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4 In this draft determination, the term "service providers" is used to refer to electricity network service providers and gas service providers.

5 Id, p. 14.

6 Id, p. 10. The AEMC notes that recovery of operating expenditure would still be possible.

7 The term "regulatory period" is used in this document to refer to both a regulatory control period under the NER and an access arrangement period under the NGR.

8 MEU, Optimisation of Asset Base and Use of Fully Depreciated Assets Rule change request, October 2011, pp. 10, 14.

9 In this document, references to "regulatory determination" mean a distribution determination under Chapter 6 of the NER, and revenue determination under Chapter 6A of the NER or an access arrangement decision under the NGR.

The proponent's rule change requests include proposed rules. The electricity proposal covers both electricity distribution and transmission.

1.4 Consultant

The Commission has engaged a consultant, Covec, to provide independent economic advice on the issues raised in the rule change requests. The report produced by Covec can be found on the AEMC's website.

1.5 Commencement of rule making processes

On 1 December 2011, the Commission published a notice under section 95 of the National Electricity Law (NEL) and section 303 of the National Gas Law (NGL) advising of its intention to commence the rule making processes and the first round of consultation in respect of the rule change requests. A consultation paper prepared by the AEMC staff identifying specific issues or questions for consultation was also published with the rule change requests. Submissions closed on 20 January 2012.

The Commission received 14 submissions on the rule change requests as part of the first round of consultation. They are available on the AEMC's website.[10] A summary of the issues raised in submissions and the Commission's response to each issue is contained in Appendix A.

1.6 Extension of time

On 16 February 2012 and then on 10 May 2012, the AEMC gave notices under the relevant provisions of the NEL and NGL to extend the period of time for the making of the draft rule determination.

In each case the extension was to ensure that there was adequate time to assess the issues raised in the rule change requests.

1.7 Consultation on draft rule determination

In accordance with the notices published under section 99 of the NEL and section 308 of the NGL, the Commission invites submissions on this draft rule determination by 3 August 2012.

In accordance with section 101(1a) of the NEL and section 310(2) of the NGL, any person or body may request that the Commission hold a hearing in relation to the draft rule determination. Any request for a hearing must be made in writing and must be received by the Commission no later than 28 June 2012.

Submissions and requests for a hearing should quote project number "ERC0136/GRC0013" and may be lodged online at www.aemc.gov.au or by mail to:

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10 www.aemc.gov.au

2 Commission's considerations (electricity and gas)

In assessing the rule change requests the Commission considered:

- the Commission's powers under the NEL and NGL to make the rule;
- the rule change requests;
- submissions received during first round consultation;
- technical advice received from Covec;
- revenue and pricing principles;
- the rule change requests submitted by the Australian Energy Regulator (AER) on the economic regulation of network services [ERC0134/GRC0011]; and
- the Commission's analysis as to the ways in which the proposed rule will or is likely to, contribute to the NEO and the NGO.

There is no relevant Standing Council on Energy and Resources (SCER) Statement of Policy Principles relating to these rule change requests.[11]

11 Under section 33 of the NEL/section 73 fo the NGL, the AEMC must have regard to any relevant SCER statement of policy principles in making a rule.

3 Draft rule determination (electricity)

3.1 Commission's draft determination

In accordance with section 99 of the NEL the Commission has made this draft rule determination in relation to the rules proposed by the MEU.

The Commission has determined it should not make the proposed rules.

The Commission's reasons for making this draft rule determination are set out in section 3.5.

3.2 Commission's power to make the rule

The Commission is satisfied that the proposed rules fall within the subject matter about which the Commission may make rules. The proposed rules fall within section 34 of the NEL as they relate to 34(1) (a)(i), the operation of the national electricity market, and 34(1)(a)(iii), the activities of persons (including registered participants) participating in the national electricity market or involved in the operation of the national electricity system. Further, the proposed rules fall within items 18, 19, 21, 26B, 26C, and 26E of schedule 1 to the NEL as they relate to the principles to be applied, the assessment of investment, the asset base, the depreciation, and rate of return to be considered, by the AER in exercising or performing an economic regulatory function or power relating to the making of a transmission or distribution determination.

3.3 Rule making test

Under section 88(1) of the NEL the Commission may only make a rule if it is satisfied that the rule will, or is likely to, contribute to the achievement of the NEO. This is the decision making framework that the Commission must apply.

The NEO is set out in section 7 of the NEL as follows:

> "The objective of this Law is to promote efficient investment in, and efficient operation and use of, electricity services for the long term interests of consumers of electricity with respect to:
>
> (a) price, quality, safety, reliability and security of supply of electricity; and
>
> (b) the reliability, safety and security of the national electricity system."

For the electricity rule change request, the Commission considers that the relevant aspect of the NEO is the promotion of the efficient investment in electricity services for the long term interests of consumers with respect to price, quality, safety, reliability and security of supply.[12]

12 Under section 88(2), for the purposes of section 88(1) the AEMC may give such weight to any aspect of the NEO as it considers appropriate in all the circumstances, having regard to any relevant SCER Statement of Policy Principles. In this instance, there is no relevant SCER statement of policy principles.

3.4 Other requirements under the NEL

In applying the rule making test in section 88 of the NEL, the Commission has taken into account the revenue and pricing principles as required under section 88B of the NEL as the rule change request relates to matters specified in items 18, 19, 21, 26B, 26C and 26E in schedule 1 to the NEL.

3.5 Summary of Commission's decision

As set out above efficient investment is one of the cornerstones of the NEO. The economic regulation that is applied to electricity distribution and transmission network services takes an incentive-based approach to achieving efficient investment. This means that, rather than the NER setting out prescriptively what expenditure a service provider may undertake, an efficient benchmark level is set and the service provider is given incentives to beat this benchmark.

In the AEMC's directions paper on the AER rule change requests,[13] the Commission agrees that the capex incentive mechanism in the NER could benefit from enhancement. This includes how the regulatory asset base is set and changes over time. While the Commission considers that the NER do not provide electricity network service providers (NSPs) with an incentive to spend more than the allowed capex, there may be an incentive on NSPs to defer capex in an inefficient way. Currently under the NER any capex above the allowance approved by the AER is automatically rolled into the regulatory asset base and is not subject regulatory scrutiny at all, which creates a risk that such expenditure may be inefficient. This will be addressed in that rule change process.

In considering the capex incentives, it is also important to bear in mind the obligations that electricity NSPs have to provide a service. These obligations come from, among other things, the reliability standards that apply in each jurisdiction. To a certain extent, an electricity NSP is obliged to invest in order to meet these reliability standards.

The Commission is sympathetic to the concerns of consumers that energy prices are rising, and understands that consumers are seeking ways to ensure those prices represent efficient costs. However, ,the Commission does not consider that the MEU has adequately established that the problems raised in its rule change request warrant the solutions it has proposed. Little empirical evidence has been provided on the extent to which electricity network assets are under-utilised and the theoretical arguments put forward do not reflect the complexity of the relative positions of regulated and competitive businesses.

The position is similar for the "used and useful" assets component (relating to the replacement of fully depreciated assets) of the rule change request. Having said that, the Commission encourages stakeholders to provide any evidence – whether qualitative or quantitative – of the existence of these problems.

At a general level the problems raised by the MEU are similar to the problems raised by the AER in its rule change requests on network regulation that are currently being

13 References in this document to the AER rule change requests mean the Economic Regulation of Network Services Rule Changes, project ERC0134/GRC0011.

considered by the Commission. Both the MEU and the AER have identified and are seeking to address the problem of inefficient over-investment in networks. The Commission will explore those problems in greater depth in the AER rule change requests, including (in addition to dealing with capex incentives, as described above) considering the process by which the AER sets expenditure allowances, and how the rate of return is set.

For both aspects of the rule change request for electricity, submissions highlighted how the current NER arrangements work. That is, the AER undertakes a thorough review of forecast capex before the capex allowance is set. In addition, the AER has the power to approve or adjust the depreciation schedules which set the economic life of assets. These can be harmonised with the engineering/actual life of the assets.

The Commission has considered the rule proposal put forward by the MEU on its merits. In short the Commission does not consider that these rules would contribute to the NEO for the following reasons:

- they could increase risk to service providers and thus provide disincentives for future efficient investment;
- they would likely increase the complexity and costs of the regulatory process, reducing its efficiency; and
- they would require the AER to take a too detailed role in approving a service provider's projects and plans.

The Commission's detailed reasoning on these points is set out in sections 6.1, 6.2, 7.5.2, and 8.5.2 of this draft rule determination.

The Commission considers that the decision not to make a rule would be supported by the revenue and pricing principles for the following reasons:

- while there may be some benefits in terms of the overall utilisation of networks (Principle 6), the proposed rules are likely to have a negative impact on incentives for investment (Principles 2 and 5); and
- the current arrangements already provide disincentives for inefficiency and over investment (Principles 2 and 5).

The Commission's consideration of the proposed rules against the revenue and pricing principles is set out in sections 7.5.1, 7.5.2, 8.5.1 and 8.5.2 of this draft rule determination.

4 Draft rule determination (gas)

4.1 Commission's draft determination

In accordance with section 308 of the NGL the Commission has made this draft rule determination in relation to the rules proposed by MEU.

The Commission has determined it should not make the proposed rules.

The Commission's reasons for making this draft rule determination are set out in section 4.5.

4.2 Commission's power to make the rule

The Commission is satisfied that the proposed rules fall within the subject matter about which the Commission may make rules. The proposed rules fall within section 74 of the NGL as they relate to 74(1)(a)(i), access to pipeline services, 74(1)(a)(ii), the provision of pipeline services, and 74(1)(a)(iii), the activities of registered participants, users, end users and other persons in a regulated gas market. Further, the proposed rules fall within items 43, 44, and 45 of schedule 1 to the NGL as they relate to the capital base, the assessment, or treatment of, investment in covered pipelines and new facilities, and the economic framework and methodologies to be applied by the regulator or the dispute resolution body.

4.3 Rule making test

Under section 291(1) of the NGL the Commission may only make a rule if it is satisfied that the rule will, or is likely to, contribute to the achievement of the NGO. This is the decision making framework that the Commission must apply.

The NGO is set out in section 23 of the NGL as follows:

> "The objective of this Law is to promote efficient investment in, and efficient operation and use of, natural gas services for the long term interests of consumers of natural gas with respect to price, quality, safety, reliability and security of supply of natural gas."

For the gas rule change request, the Commission considers that the relevant aspect of the NGO is the promotion of the efficient investment in natural gas services for the long term interests of consumers with respect to price, quality, safety, reliability and security of supply.[14]

4.4 Other requirements under the NGL

In applying the rule making test in section 291 of the NGL, the Commission has taken into account the revenue and pricing principles as required under section 293 of the

14 Under section 291(2), for the purposes of section 291(1) of the NGL the AEMC may give such weight to any aspect of the NGO as it considers appropriate in all the circumstances, having regard to any relevant SCER Statement of Policy Principles. In this instance, there is no relevant SCER statement of policy principles.

NGL as the rule change request relates to matters specified in items 43, 44, and 45 of schedule 1 to the NGL.

4.5 Summary of Commission's decision

As set out above efficient investment is one of the cornerstones of the NGO. The economic regulation that is applied to gas pipelines takes an incentive-based approach to achieving efficient investment. This means that, rather than the NGR setting out prescriptively what expenditure a service provider may undertake, an efficient benchmark level is set and the service provider is given incentives to beat this benchmark.

The NGR provide for scrutiny of capex both before and after it is undertaken. Beforehand, the regulator approves the benchmark level of capex. Afterwards, the regulator may exclude from the asset base any capex which was not prudent or efficient. In addition, the regulator may include in an access arrangement a mechanism to remove redundant assets from the asset base.

In considering the capex incentives, it is also important to bear in mind the obligations that gas service providers have to provide a service. These obligations come from, among other things, reliability and gas quality standards that apply in each jurisdiction. To a certain extent, a gas service provider is obliged to invest in order to meet these reliability standards.

The Commission is sympathetic to the concerns of consumers that energy prices are rising, and understands that consumers are seeking ways to ensure those prices represent efficient costs. Given this overall view, the Commission does not consider that the MEU has adequately established that the problems raised in its rule change request warrant the solutions it has proposed. Little empirical evidence has been provided on the extent to which gas pipeline assets are under-utilised and the theoretical arguments put forward do not reflect the complexity of the relative positions of regulated and competitive businesses. The position is similar for the "used and useful" assets component of the rule change request (which relates to fully depreciated assets). Having said that, the Commission encourages stakeholders to provide any evidence – whether qualitative or quantitative – of the existence of these problems.

For both aspects of the rule change request, submissions highlighted how the current NGR arrangements work. The scrutiny of capex described above does not appear to be given sufficient weight by the MEU.

The Commission has considered the rule proposal put forward by the MEU on its merits. In short the Commission does not consider that these rules would contribute to the NGO for the following reasons:

- they could increase risk for service providers and thus provide disincentives for future efficient investment;
- they would likely increase the complexity and costs of the regulatory process, reducing the efficiency of the process;
- the NGR already include mechanisms which could be used to address the MEU's concerns; and

- they would require the regulator to take a too detailed role in approving a service provider's projects and plans.

The Commission's detailed reasoning on these points is set out in sections 6.1, 6.2, 7.5.1, 7.5.2, and 8.5.2 of this draft rule determination.

The Commission considers that the decision not to make a rule would be supported by the revenue and pricing principles for the following reasons:

- while there may be some benefits in terms of the overall utilisation of networks (Principle 6), the proposed rules are likely to have a negative impact on incentives for investment (Principles 2 and 5); and
- the current arrangements already provide disincentives for inefficiency and over investment (Principles 2 and 5).

The Commission's consideration of the proposed rules against the revenue and pricing principles is set out in sections 7.5.1, 7.5.2, 8.5.1 and 8.5.2 of this draft rule determination.

5 Commission's assessment approach (electricity and gas)

This chapter describes the Commission's approach to assessing the rule change requests in accordance with the requirements set out in the NEL and NGL (and explained in chapters 3 and 4).

In assessing any rule change request against the NEO and NGO the first step is to consider the counterfactual arrangements against which the rule change is being compared. In the present case the counterfactual arrangements are the current provisions under the rules. The current rules are summarised in sections 7.1 and 8.1.

In assessing these rule change requests, the Commission has considered the following factors:

- recovery of efficient costs – whether the proposed rules are likely to allow businesses to be able to fully recover the efficient level of costs required to deliver secure and reliable supplies to customers;
- efficient utilisation – whether the proposed rules would ensure actual costs which are rolled into the asset base reflect actual utilisation of an asset, and provide the appropriate signals for efficient utilisation;
- investment incentives – whether the proposed rules would have an impact on incentives to invest in services that would benefit customers: first, by the reduction of the asset base through creating disincentives for replacing fully depreciated assets; and secondly, by the reduction of the asset base where the value of assets would be based on the degree of their utilisation. It will also be relevant to consider whether this increased investment risk could justify a higher cost of capital; and
- regulatory process - whether the proposed rules would create complexity or uncertainty in the regulatory process: firstly, by requiring the regulator to assess whether assets are redundant with service providers being required to demonstrate that the asset is at the end of its functional life; and secondly, by requiring the regulator to assess whether assets are under-utilised with service providers being required to show how much an asset has been utilised.

Prior to assessing the rule change requests against these factors, the next chapter sets out the approach to capex incentives and other relevant rule change requests being considered by the Commission.

6 Approach to incentives

6.1 Incentive regulation

In the electricity and gas sectors, the approach to regulation that has been adopted is price/revenue cap regulation. Under this form of regulation, a price or revenue is set ex ante for a regulatory period, regardless of what actual costs during the regulatory period turn out to be. A service provider that underspends gets the benefit of this for the remainder of the period. A service provider that overspends bears the costs of the investment for the reminder of the period. This type of regulation provides strong incentives for regulated businesses to reduce costs and undertake efficient investment (though as set out in section 6.3 below, the power of this incentive appears to decline towards the end of the regulatory period). This is because reducing costs would not lead to any change to the price/revenue during the regulation control period. Therefore, the firm and its managers have the maximum incentive to minimise their costs in order to maximise their profit margin within that period.

The AEMC is considering the incentive mechanisms described here in the AER rule change requests, as explained further in section 6.3 below.

In addition, capex is not allocated to particular projects and it is up to the service provider to manage its projects and its business plan in the most efficient way. Aside from some review of a service provider's proposed projects at the start of the period to determine the appropriate ex ante level of capex, the regulator is not involved in detailed decisions relating to which capital projects are undertaken by a service provider and how they are undertaken. This is appropriate as the regulator will not have access to the same information about a service provider's network/pipeline as the business itself, and will not have the same experience of running a network. It should be the service provider, rather than the regulator, which is responsible for the detailed decisions about what expenditure is to be undertaken.

6.2 MEU rule change requests

The rule change requests from the MEU would require the regulator to be much more closely involved in the detail of specific capital projects. In respect of the optimisation changes, the regulator would be required to assess particular assets of a service provider, determine their utilisation, and then consider whether there are broader network/pipeline considerations which might justify a larger asset which is not fully utilised. In respect of assets at the end of their economic life, the regulator would be required to consider each asset to be replaced to determine if the asset being replaced is at the end of its functional life. In both cases the regulator would be required to consider an electricity network at a level that is not currently required. In respect of gas pipelines, the regulator would also be required to consider the pipeline at an increased level of detail, though given the current arrangements including possible ex post review, the difference from the current approach would not be so great.

In addition, the optimisation component of the rule change requests would require the regulator to form a view on the extent to which any underutilisation could be justified. For example, in the case of electricity, an asset may have been built to provide "n-1"

redundancy for another asset. Alternatively, as acknowledged by the MEU at page 16 of the rule change requests, an "under-utilised" asset may be able to be justified if the additional capacity may be needed within a reasonable time period. This would make it more cost-efficient to build a larger asset initially than having to build a smaller asset initially then within a short time build another small asset. These would be very difficult decisions for a regulator to make. That is, where it is appropriate for some (or even many) assets to be utilised below 100% of capacity for most of the time, it is very difficult to determine that a particular asset should be removed from the asset base because it is being under-utilised.

6.3 The AER rule change requests on network regulation

In its rule change requests on network regulation, the AER comments that, for electricity, there are incentives for service providers to spend more than a necessary and efficient level of capex and operating expenditure (opex). Under the current asset base roll forward mechanism, all actual capex incurred within a regulatory period must be automatically rolled into the asset base at the start of the next period, regardless of whether the expenditure is greater than the amount allowed for in the regulatory determination and whether it is efficient.

The AER's rule proposal that only 60% of any capital overspend should be rolled into the asset base seeks to address a similar problem to that raised in the MEU's rule change requests. That is, the AER was concerned that there is the potential for over-investment and that the asset base is being increased beyond an efficient level. This appears to be similar to both of the problems raised by the MEU. In respect of optimisation, the MEU claims that under-utilised assets are currently included in the asset base and that this means it is larger than it should be. Similarly for fully depreciated assets, the MEU claims that replacement assets are being added to the asset base when the existing assets are still able to provide the relevant service.

The AEMC has taken the initial view on the AER rule changes that, leaving the cost of capital aside, there is no incentive in the NER to spend more than the capex allowance, although there is an incentive to defer capex until the end of the regulatory period. However, the AEMC considers that factors separate to the incentive regime may result in capex beyond the allowance. The AEMC considers that the NER could be enhanced to allow for some scrutiny of actual expenditure which differs from the forecasts.

In addition, the AEMC has taken a view that the overall strength of the capex incentive declines as a regulatory period progresses. That is, the incentive power is stronger at the beginning than at the end. This leads to an incentive to defer expenditure to a later time in the regulatory period. The AEMC is considering how to address this incentive to defer as part of dealing with the AER rule change requests.

The AEMC is looking at capex incentives at a general level as part of the AER rule change requests to understand better why and to what extent NSPs spend above the regulatory allowance for electricity. As well, the AEMC is exploring in more detail how using actual or forecast depreciation affects a service provider's behaviour.

To understand reasons for why service providers may overspend their expenditure allowances, the Commission has engaged a consultant to prepare a report focusing on a

selection of electricity NSPs. This may shed further light on the problems that the MEU claims to exist.

Broadly speaking, the MEU 's concerns regarding inefficient investment being permitted parallel those concerns coming out of the AER's rule change requests. The work being done by the Commission in that context may address the concerns of the MEU at a general level. In addition to the work on capex incentives described above, the Commission is exploring in depth the mechanism by which the AER approves expenditure allowances. Another element of those rule change requests is the rate of return, and there may be changes to how the rate of return, including the cost of debt, is set as a result. Together, these different elements should result in different incentives for electricity NSPs in the way they invest.

7 Optimisation of the asset base

This chapter deals with the first part of the MEU's rule change requests, in relation to optimisation of the asset base. The rule change requests would require the regulator to review periodically the valuation of all assets to ensure that the value of the assets used in the building block approach reflects the minimum value necessary to ensure the provision of the services required. This means that only assets actually used at an appropriate level of optimisation would be allowed to be included in the asset base.

7.1 Current rules processes

This section provides an overview of the current processes provided under the rules with respect to rolling forward the asset base, including the treatment of redundant assets.

Electricity

Under the NER, the asset base is rolled forward from one regulatory control period to the next.[15] The amount by which the asset base is increased is based on the total capex undertaken by the NSP during the previous regulatory control period. There is no requirement for an ex post asset utilisation review (nor an ex post prudency review) by the AER, nor a requirement for the asset base to be adjusted according to the degree of utilisation of an asset.[16]

Gas

Similarly in gas, the asset base is rolled forward from one regulatory control period to the next.[17] The starting point is the total actual capex incurred in the previous regulatory control period. The regulator may reduce the amount of capex rolled forward based on a prudency test.[18] However, there is no automatic optimisation of the asset base.

There is a capital redundancy provision (rule 85(1) of the NGR) which provides that a full access arrangement may include (and the regulator may require it to include) a mechanism to ensure that such redundant assets are removed from the asset base. However, this is a discretionary provision and there is no automatic provision that excludes these assets from the asset base.

7.2 Rule proponent's view

This section summarises the views from the MEU about the benefits and costs of the optimisation, and its opinion about rule 85(1) of the NGR.

The MEU considers that its proposal would promote efficient investment and disincentivise over-investment, gold-plating and inflated costings. It claims that the

15 Clauses S6.2.1(c)(1), (d)(2)-(3), and S6A.2.1(c)(1), (d)(2)-(d)(3) of the NER.

16 An ex post prudency review effectively requires the regulator to put itself in the position of a service provider at the time that they were undertaking a particular project to determine if the project was undertaken efficiently.

17 Rule 77 of the NGR.

18 Rules 77(2) and 79 of the NGR.

review of existing assets would result in prices based on efficient investment. Consumers would not need to pay for redundant assets or over-sized assets. It also states that there will be productive, allocative and dynamic efficiency gains arising from the MEU proposal. The MEU expects that there will be a reduction in revenue to the service providers if the proposed rule changes on optimisation are implemented.[19]

The MEU is of the view that the regulator is the appropriate body to determine and assess the age and condition of service providers' assets. It states that the regulator needs to take a similar approach to that which the regulator takes in determining whether new assets may enter the asset base.[20]

The MEU disagrees that the proposed rules could place significant administrative burden on the regulator and service providers. It comments that the data for review is available at regulatory resets. All service providers must already possess and update their asset registers, the life of the assets and the service levels each of the assets provides.[21]

In respect of rule 85(1) of the NGR, the MEU comments that this rule applies only to redundant assets, and does not apply to under-utilised or gold plated assets. In addition it considers the provision is not strong enough as whether it will be applied will depend on the actions from the regulator and the service provider.[22]

7.3 Stakeholder views

This section summarises the submissions in the first round consultation which comment on the existence of the problem raised by the MEU, and also provides a summary of the submissions against each assessment factor set out in chapter 5.

7.3.1 Submissions in respect of the existence of the problem raised by the MEU

Submissions generally do not support that there is a problem as raised by the MEU. Moreover, they submit alternatives to strengthen the incentives for efficient investment and hence facilitate efficient utilisation.

Submissions from electricity NSPs

A number of submissions argue that there is lack of evidence to show that there is a problem.[23] The Energy Supply Association of Australia (ESAA) submits that the analysis from the MEU fails to demonstrate that there is a problem as no evidence is given. The Energy Network Association (ENA) considers that the MEU has not provided clear supporting evidence of the claimed deficiencies in the regulatory regime to justify the proposed amendments.

19 MEU, Optimisation of Asset Base and Use of Fully Depreciated Assets Rule change request, October 2011, p. 16.

20 MEU, Consultation Paper submission, 20 January 2012, p. 6.

21 Id, p. 7.

22 Id, p. 8.

23 Aurora Energy, Consultation Paper submission, 24 January 2012, p. 11; ENA, Consultation Paper submission, 20 January 2012, p. 1; ENERGYGEX, Consultation Paper submission, 20 January 2012, pp. 1-2; ESAA, Consultation Paper submission, 30 January 2012, p. 2.

Electricity NSPs also do not agree that there is an incentive to under forecast expected capex and over invest under the current regulatory framework.[24] They state that they would lose the time value of capital if they spent in excess of the regulatory allowance.

Submissions from gas service providers

Similar to electricity NSPs, gas service providers generally do not support the MEU's view that there is a problem in the current rules in terms of inefficient utilisation and investment.

Envestra submits that the MEU has not provided evidence in its proposal that investment decision making by gas service providers has been inefficient, or that the asset base has been inflated.[25]

Australian Pipeline Industry Association (APIA) notes that service providers are constrained by the same capital restrictions as competitive businesses, and there is not an endless supply of capital to fund inefficient investments.[26] It also rejects the MEU's assertion that there is little or no review by regulators before capex is rolled into the asset base and notes the ex ante and ex post assessments available to the regulator which allow scrutiny of capex.

In respect of existing capital redundancy mechanisms in the NGR, service providers submit that these currently address the problems the MEU has raised. In particular, APIA states that rule 85 of the NGR already addresses the optimisation issue, and it has been used in the past in the application of an equivalent of rule 85(1) of the NGR in 2005 by Independent Pricing and Regulatory Tribunal (IPART).[27] By contrast the ENA states that rule 85 has been rarely used in the past and that as a result it may be unnecessary.[28] United Energy and Multinet Gas also see weaknesses in rule 85 and support its removal.[29] The MEU notes that since rule 85 requires voluntary actions from both the service provider and the regulator, and it applies only to redundant assets, it is inadequate in meeting the interests of consumers.[30]

Submission from the AER

The AER agrees with the MEU that there is a need to strengthen incentives on service providers to incur only efficient capex. However, the AER thinks that there are better ways to deal with the problem that could be created by "low carbon future" policies. The solutions in the AER's rule change process are one option. These might also include more efficient planning processes, efficient capex and pricing mechanisms that encourage efficient locational decisions.[31]

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24 Ausgrid, Consultation Paper submission, 20 January 2012, p. 8; United Energy and Multinet Gas, p. 3.

25 Envestra, Consultation Paper submission, 20 January 2012, p. 2.

26 APIA, Consultation Paper submission, 20 January 2012, p. 5.

27 Id, p. 4.

28 ENA, Consultation Paper submission, 20 January 2012, p. 9.

29 United Energy and Multinet, Consultation Paper submission, 20 January 2012, pp. 9 -11.

30 MEU, Consultation Paper submission, 20 January 2012, p. 8.

31 AER, Consultation Paper submission, 24 January 2012, pp. 4-5.

7.3.2 Submissions against assessment factors

In addition to the submissions above in respect of whether there is a problem in the current rules, this subsection highlights the submissions against each assessment factor set out in chapter 5.

Recovery of efficient costs

Service providers are concerned by the significant risks introduced by the asset base optimisation. They are particularly concerned that an investment that was deemed efficient at the point of time of making the investment decision would be stranded at the optimisation stage if the regulator views the relevant asset as under-utilised. If this is the case, service providers would not be able to recover the costs of this asset through regulated revenues.[32]

Moreover, Aurora and the ESAA also note the potential risk of recovery of the efficient cost and they submit that as a result, the cost of capital would be higher and consumers would need to pay more.[33]

Efficient utilisation

The ENA submits that the relationship between initial expenditure and the degree of asset utilisation is indirect. Therefore, the likely effects of the proposed rules on efficient utilisation of an asset are not clear. They submit that it is user choices about the extent of network/pipeline usage, not the service providers' choices, that determine asset utilisation outcomes.[34]

Grid Australia submits that in practice the MEU's rule change requests would have little effect on the efficiency of pricing to individual customers, and hence the efficiency of the utilisation of the network. Grid Australia submits this is because the MEU proposal would not have a material impact on the locational component of transmission prices.[35]

In addition to the above views, South Australian Department for Manufacturing, Innovation, Trade, Resources and Energy (SA DMITRE) submits that when considering efficient utilisation, it is important to take into account the assets which are required to be available for service as the need arises.[36] Efficient utilisation may in fact require a proportion of network assets to be used below the capacity most of the time.

Investment incentives

The ENA submits that if implemented, the proposals would have a strong negative impact on undertaking investment, particularly regarding the consideration of economies of scale, because the service providers would face the risk of future asset

32 Ausgrid, Consultation Paper submission, 20 January 2012, p. 5; ENA, Consultation Paper submission, 20 January 2012, p. 5; United Energy and Multinet Gas, Consultation Paper submission, p. 9

33 Aurora Energy, Consultation Paper submission, p. 8, p. 6; ESAA, Consultation Paper submission, 30 January 2012, p. 2.

34 ENA, Consultation Paper submission, 20 January 2012, p. 5.

35 Grid Australia, Consultation Paper submission, p.2.

36 SA DMITRE, Consultation Paper submission, p. 1.

stranding. They submit that the proposals would promote short-term incremental network development to meet short-term demand.[37]

SA DMITRE is concerned about the reliability impacts of deterring investment. It also notes that the proposal may impact on other regulatory processes, eg, the Service Target Performance Incentive Scheme (STPIS). It considers that networks should also be built to economic scale and with capacity for forecast growth.[38]

Regulatory process

Service providers also submit that the nature of the regulatory process and the role of the regulator would be fundamentally altered if the rules proposed by the MEU were made.

Electricity NSPs submit that the MEU solutions would be difficult to implement for the following reasons:

- increased complexity and costs of the regulatory process;[39]
- lack of AER resources/ability;[40]
- a compensating adjustment to the risk-adjusted returns of the network would be needed;[41] and
- AER guidelines needed to assist implementation.[42]

The AER also agrees that there are practical issues in terms of the implementation of the proposal.[43]

7.4 Consultant view

With respect to the MEU's optimisation approach, Covec's overall view is that if over-investment is perceived to be a real problem, ex post optimisation is not a good way of dealing with it due to the backward looking nature of the approach, the increase in implementation costs, the negative impact on efficient investment, and the risk of not being able to recover efficient costs. Covec observes that ex post optimisation is not currently used in many jurisdictions and suggests that there may be other less costly and intrusive ways to address this problem raised by the MEU. The efficiency sharing approach used in the UK by Ofgem is one example of an alternative to ex post optimisation.[44]

37 ENA, Consultation Paper submission, 20 January 2012, p. 5.

38 SA DMITRE, Consultation Paper submission, pp.1-2.

39 Aurora Energy, Consultation Paper submission, p. 8; ENA, Consultation Paper submission, 20 January 2012, pp. 4, 9; ESAA, Consultation Paper submission, 30 January 2012, p. 2.

40 ENA, Consultation Paper submission, p. 5.

41 Aurora Energy, Consultation Paper submission, p. 6; ESAA, Consultation Paper submission, 30 January 2012, p. 2.

42 Jemena, Consultation Paper submission, 20 January 2012, p. 14.

43 AER, Consultation Paper submission, 24 January 2012, pp. 2-3.

44 Covec, Initial views on rule changes proposed by MEU, 6 February 2012, p. I.

In Covec's view, if the ex post optimisation approach is implemented, over the long run there would be neither a gain nor a loss to consumers, or to the regulated firm. Assets being written out of the asset base would be balanced by a need to compensate the service providers via setting a higher cost of capital since there would be increased risk to service providers.[45]

Covec considers that the MEU's optimisation proposals are applying an ex-post efficiency standard that is incompatible with the ex ante basis for setting capex allowances. Under optimisation, assets for which a previous investment decision may have been prudent and efficient on the basis of a forward looking analysis can subsequently be written out of the asset base.[46]

7.5 Conclusions

The following subsections provide the AEMC's response as to whether there is a problem and the conclusions in respect of each of the key assessment factors set out in chapter 5.

7.5.1 Response to the problems raised by the MEU

As discussed in the MEU rule change proposals and the submissions from service providers, the arguments that there is a problem in the current rules are based on whether there are incentives for over-investment and whether the rules in this area are appropriately mimicking competition.

Regulated service providers and competitive markets

The MEU states that the basic intent of regulation is to provide surrogate competitive pressure to maximise efficiency.[47] The MEU also observes that regulated service providers lack a number of constraints that apply to competitive businesses. In particular, a regulated service provider continues to receive a return on an asset that is not fully utilised.

The AEMC is supportive of the view that regulation is intended to mimic as far as reasonably possible the incentives and disciplines in a competitive market. However, as acknowledged by Covec, regulation does not seek to completely replicate competitive conditions.[48] Regulators try to promote an outcome which is consistent with the workable competitive market, not a perfect competitive market.

Moreover, in certain ways regulated businesses do not have the same choices and options as companies in a competitive market. This creates significant differences in the business environment for regulated businesses. In particular, they have obligations to provide a service that does not exist for most competitive businesses, and they are limited in the rate of return they can earn on their investments. For example, before making a long term commitment a competitive business would usually make an

45 Id, p. 4.

46 Id, p. ii.

47 MEU, Optimisation of Asset Base and Use of Fully Depreciated Assets Rule change request, October 2011, p. 7.

48 Covec, Initial views on rule changes proposed by MEU, 6 February 2012, p. 4.

assessment of the relevant market and invest only if it had formed the view that its likely return compensated it for the level of risk and allowed it a profit. This is not the case for electricity and gas businesses, which may have to invest to meet expected demand growth against the risk that demand growth may not eventuate - a risk that is not compensated for in the rate of return determination for the regulated business.

These obligations come from, among other things, the reliability standards in each jurisdiction. Service providers must provide certain services, and at a specific standard. In electricity, for example, distribution NSPs must meet jurisdictionally determined reliability standards or outcomes. The requirements differ between jurisdictions but they can require the distribution NSP to meet some or all of certain design planning criteria, reliability performance standards, and certain requirements relating to the worst served customers in a network area.

Also following on from this, once a regulated service provider has made an investment in response to a request for service, if a customer ceases to use the service, there may be limited scope for them to find an alternative user of the service or to sell the assets. A regulated business is therefore more susceptible to its assets being stranded.

In summary, the AEMC's view is that the incentives and challenges of the regulated service providers and the competitive businesses are not as simple as the MEU suggests. It is important to take into account the additional obligations for regulated businesses when considering the extent to which the rules should attempt to mimic competition.

Incentive for over-investment

The MEU has stated that the lack of an optimisation provision in the current rules provides an incentive for regulated businesses to over-invest.[49] It believes that due to the lack of an ex-post review of capex and the automatic rolling in of actual capex, actual capex is likely to contain inefficient investments.[50]

As an initial point, the AEMC shares the view put forward in many submissions that the MEU has not provided evidence of this problem existing in practice.[51] To what extent are there under-utilised assets as part of electricity networks or gas pipelines? Has this under-utilisation resulted from an under-utilised asset being built, or was it caused by an appropriately sized asset becoming stranded by unforeseen factors? The AEMC welcomes further evidence on this point.

At a theoretical level the problem has also not been established either. In the directions paper for the network regulation rule changes, the AEMC stated, in respect of electricity, that the "capex incentives in the NER do not create an incentive for a NSP to

49 MEU, Optimisation of Asset Base and Use of Fully Depreciated Assets Rule change request, October 2011, p. 6.

50 Id, p. 7.

51 Aurora Energy, Consultation Paper submission, p. 11; ENA, Consultation Paper submission, 20 January 2012, p. 1; ENERGYGEX, Consultation Paper submission, 20 January 2012, p. 1; Envestra, Consultation Paper submission, 20 January 2012, p. 2; ESAA, Consultation Paper submission, 30 January 2012, p. 2.

spend more than its allowance in its regulatory determination".[52] A similar point could be made for gas. The reason for this is, as set out in section 6.1 above, after a regulatory determination is made a service provider's revenue is fixed and it retains the benefit of any underspend and bears the costs of an overspend. This provides a strong incentive to minimise expenditure, particularly in respect of overspends where the service provider will bear the financing costs of its investment until the start of the next regulatory period. In other words, the service provider would lose the time value of its capital.[53]

Finally, leaving the incentives in the rules to one side, the MEU has not mentioned capital constraints that may restrict the business's ability to undertake expenditure. These apply whether a business is regulated or competitive. As APIA notes, most regulated businesses do not have an excessive supply of capital and raising and refinancing debt operates as an ongoing discipline.[54]

Specific mechanisms in the NGR

Additional mechanisms relevant to the problems identified by the MEU exist in the NGR. The first of these is rule 85, which gives the regulator the power to include a capital redundancy mechanism in an access arrangement. The second of these is the ex post prudency review available to the regulator as part of rule 77 which excludes capex which is not prudent or efficient from the asset base. As described above, stakeholders have different views on the efficacy of rule 85. In general, it would appear that neither mechanism has been employed regularly in the past. However, the MEU has not adequately established why these provisions in the NGR do not act as a deterrent against under-utilised assets being built.

Principles 2 and 5 of the revenue and pricing principles provide:

- that a service provider should be provided with a reasonable opportunity to recover at least the efficient costs the service provider occurs in providing services; and
- that a reference tariff /price charged by the service provider should allow for a return commensurate with the regulatory and commercial risks involved in providing the service.

In this regard the NGR already provide incentives to promote economic efficiency, and prevent over-investment.

In summary, the MEU has not adequately established that inefficiently under-utilised electricity and gas assets are being constructed. In particular the MEU has not adequately explained how the current provisions are inadequate.

7.5.2 Analysis of proposed rules

Recovery of efficient costs

52 AEMC, Economic Regulation of Network Service Providers, and Price and Revenue Regulation of Gas Services, Directions Paper, 2 March 2012, Sydney, p. 40; this comment is only applying to electricity, but the same principle applies to gas.

53 Ausgrid, Consultation Paper submission, 20 January 2012, p. 2.

54 APIA, Consultation Paper submission, 20 January 2012, p. 5.

On the whole, the recovery of efficient cost is a less significant factor in respect of the optimisation component of the MEU's rule change. The rule change requests would appear to have the effect of transferring more of the risks for assets becoming redundant to service providers.[55] For example, some capex may be deemed efficient at the time it is incurred on the basis of information available at the time, but due to a change in market conditions the relevant assets may become redundant. Thus costs that were approved as efficient on an ex ante basis would not be recovered. As Covec points out, ex post optimisation imposes a second efficiency standard on service providers, which may create uncertainty in the recovery of efficient costs.[56] Service providers in submissions have expressed a particular concern that they may not be able to recover their efficient costs.[57]

However, any shift of risk to service providers may result in an adjustment to the cost of capital. The allowed rate of return for service providers is determined based on the level of risk involved in investing in network assets. Given that under the MEU proposal risks are transferred to service providers, the AEMC takes the view that it is likely that an adjustment to the risk-adjusted rate of return of the network would be required if optimisation is implemented.

Continuing this theme, Covec takes the view that,[58]

> "provided the WACC [weighted average cost of capital] increment was properly estimated, it would be actuarially fair compensation, and over the long-run (e.g. several regulatory periods) there would be neither a gain or a loss to consumers, or to the regulated firm."

Thus, the risk of service providers not recovering costs under the MEU rule change is likely to be low in the long term on the basis that they should be compensated for any added risks through the cost of capital.

Efficient utilisation

The aim of the MEU's rule change request in respect of optimisation is to ensure that consumers do not fund assets that are redundant or under-utilised. If this proposal was implemented, it would send a signal to service providers not to invest in assets with a higher chance of becoming redundant. Even if, as the MEU acknowledges, some assets that are not being used should be retained in the asset base (for economies of scale reasons, for example), the AEMC agrees that the proposal should result in the overall degree of utilisation of assets in the system increasing to some extent. In terms of the revenue and pricing principles, this reflects principle 6, which provides that regard should be had to the economic costs and risks of the potential for under and over investment by a service provider in an asset with which the service provider provides

55 MEU, Optimisation of Asset Base and Use of Fully Depreciated Assets Rule change request, p. 16.

56 Covec, Initial views on rule changes proposed by MEU, 6 February 2012, p. 2.

57 Aurora Energy, Consultation Paper submission, p. 6; Ausgrid, Consultation Paper submission, 20 January 2012, p. 5; ENA, Consultation Paper submission, 20 January 2012, p. 5; ESAA, Consultation Paper submission, 30 January 2012, p. 2; United Energy and Multinet Gas, Consultation Paper submission, p. 9.

58 Covec, Initial views on rule changes proposed by MEU, 6 February 2012, p. 4.

services. That is, the rule change requests would appear to address the utilisation of the network/pipeline, and may increase utilisation to an extent.

Service providers suggest that the MEU's optimisation proposal is unlikely to lead to increased asset utilisation because it is user choices, not service providers' choices, that dominate asset utilisation outcomes.[59] The AEMC's view is that, while some user choices will be hard to predict, service providers will be able to expect some of these. This should enable service providers to respond to a certain extent to incentives not to build assets which have a chance of being under-utilised.

Investment incentives

If ex post optimisation of the asset base is implemented as proposed by the MEU, this would provide a signal to discourage service providers from undertaking capex that has a higher risk of being under-utilised. This is because of the risk of stranding through ex post optimisation. This should have an effect of increasing the overall utilisation of the network, as discussed above.

However, optimisation might also provide signals to service providers not to invest even if the investment is efficient over the longer term due to considerations of economic scale and forecast growth. In addition, a service provider may also be reluctant to make investments for improving reliability if it is concerned that this investment could be optimised out of the asset base in future.

Therefore, on one hand optimisation would put pressure on service providers to reduce inefficient investment. On the other hand optimisation could undermine, rather than promote efficient investment. To put it simply, as Covec says, there is a risk that certain assets will not be installed.[60] For example, APIA points out that smaller size investment is likely to be more attractive for service providers because it is less likely to be optimised out of the asset base in future. This may result in a substantially greater capex requirement in the long run, thereby increasing the overall cost for transportation.[61] It is also likely that the MEU's proposal would deter investment in assets for which demand is hard to predict, as Grid Australia states.[62]

Covec is particularly concerned about the risk of under-investment. In addition to the comments above, it notes that under-investment can result from:[63]

- differences between the actual capex and the prescribed optimised value;
- conflicts between whole of network optimisation and incremental growth; and
- access prices being linked to current rather than historic costs.

Principles 2 and 5 of the revenue and pricing principles refer to promoting efficient investment in networks/pipelines and the potential for under or over investment. The analysis set out here suggests there is the risk of underinvestment as a result of the MEU rule change requests.

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59 ENA, Consultation Paper submission, 20 January 2012, p. 5.

60 Covec, Initial views on rule changes proposed by MEU, 6 February 2012, p. 6.

61 APIA, Consultation Paper submission, 20 January 2012, p. 8.

62 Grid Australia, Consultation Paper submission, 20 January 2012, p. 17.

63 Covec, Initial views on rule changes proposed by MEU, 6 February 2012, p. 7.

Regulatory process

As discussed above, service providers and Covec are of the view that ex post optimisation would be difficult to implement. The AEMC agrees that ex post optimisation would increase the complexity and costs of the regulatory process.

First, under this approach, at each reset the regulator would be required to consider the degree of utilisation of every asset in the asset base.[64] This is a task that would require significant regulator resources, as well as data from service providers. The regulator may also be required to carry out independent audits or checks of assets in order to verify the accuracy of service provider's data concerning the extent of utilisation of assets. This would require significant time to undertake, noting the regulator is already time constrained under the current regulatory process.

Secondly, if optimisation is implemented, the AEMC considers that good regulatory practice implies that transparency and consistency need to be provided to regulated businesses. Therefore detailed rules about how optimisation is to be undertaken need to be in place in advance and clear guidelines from the regulator would need to be prepared to assist implementation.[65] Covec also agrees there would be a need for guidelines, and that this will need to be assessed (by the regulator presumably) every time a change to the guidelines is requested.[66] This will add to the regulatory burden.

64 Aurora Energy, Consultation Paper submission, 24 January 2012, p. 8; ENA, Consultation Paper submission, 20 January 2012, p. 4.

65 Jemena, Consultation Paper submission, 20 January 2012, p. 14.

66 Covec, Initial views on rule changes proposed by MEU, 6 February 2012, p. 5.

8 Continued use of fully depreciated assets

This chapter deals with the second part of the MEU's rule change requests. For an asset that has been fully depreciated, the MEU proposes that the regulator may only approve the replacement of this asset if the asset has passed its useful life and cannot be used productively for further service.

8.1 Current rules processes

Under the NER/NGR, the regulator sets the capex allowance for a service provider for an upcoming regulatory period, based among other things on the proposal provided by the relevant service provider. The rules are reasonably prescriptive about how the allowance is to be set, and only capex which is efficient and prudent is likely to be approved by the regulator. The regulator does not approve individual projects, and while the capex allowance determines the return the service provider may receive, it does not constrain the capex program the service provider may undertake. In setting the allowance the regulator may take into account the extent of assets which have reached the end of their economic life, but no rule prevents the regulator from approving capex in respect of the replacement of assets which have reached the end of their economic life but which continue to be functional.[67]

Under the NER/NGR, the regulator also has the power to approve depreciation schedules. This includes the power to reject proposed depreciation schedules.[68] This should allow the regulator to have some measure of control over the economic lives of assets.

8.2 Rule proponent's view

In the MEU's view, its rule change would impose no costs on service providers. Further, any additional cost to the regulator in terms of carrying out a revenue reset would be minimal. If the used and useful assets are retained once they are fully depreciated, the MEU considers that there would be no increased risk to the service providers, but consumers would receive lower costs.[69]

The MEU suggests that its approach will best achieve the goal of minimising the unnecessary replacement of depreciated assets which are still useful. It considers the approach is consistent with incentive regulation.[70]

The MEU is of the view that retaining useful but fully depreciated assets would lead to greater symmetry in the treatment of end of life assets, since a regulated business is currently allowed to earn a return on the new assets where it removes assets that are not fully depreciated but need replacing because of system needs.[71]

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67 6.5.7, 6A.6.7 of the NER; 78 of the NGR.

68 6.5.5 and 6A.6.3 of the NER; 89 of the NGR.

69 MEU, Optimisation of Asset Base and Use of Fully Depreciated Assets Rule change request, October 2011, p. 16.

70 MEU, Consultation Paper submission, 20 January 2012, January 2012, p. 9.

71 Id, p. 7.

8.3 Stakeholder views

8.3.1 Submissions about the existence of the problem raised by the MEU

Most service providers submit that under the current rules, a business makes more money if it retains an asset in service for longer than expected, because it can defer the replacement cost. They submit that there is lack of evidence of the problem identified by the MEU.[72]

Submissions from service providers generally disagree that they replace assets for the reasons that the MEU provided in its proposal. Ausgrid submits that its asset replacement decisions are not based on economic life of assets, but on the condition of the assets from an engineering perspective, and also taking into account safety and reliability.[73] Indeed, the ENA submits that service providers are rewarded for the deferral of replacement capital.[74]

Furthermore, service providers also generally consider that there are mechanisms that limit the early replacement of assets. Ausgrid states that under the current rules, the regulator reviews Ausgrid's asset management practices and replacement expenditure so it has the ability to substitute its own replacement expenditure forecasts when determining regulated revenues. It also submits that an audited network management plan is required to be submitted to the Director-General of New South Wales Industry and Investment under the Electricity Supply (Safety & Network Management) Regulation 2008.[75] SA DMITRE submits that there is a mechanism to ensure NSPs do not inefficiently depreciate assets in the form of the regulator's approval of the economic life of assets.[76]

However, Aurora agrees with the MEU that the current NER regime incentivises replacement of fully depreciated regulated assets because the regulated revenue stream from an asset is a function of the asset value, therefore this can potentially lead to the replacement of a serviceable asset solely to retain a revenue stream.[77]

8.3.2 Submissions against assessment factors

In addition to the submissions above in respect of whether there is a problem in the current rules, this subsection highlights the submissions against each assessment factor set out in chapter 5.

72 ENA, Consultation Paper submission, 20 January 2012, pp. 1, 7; ESAA, Consultation Paper submission, 30 January 2012, p. 2

73 Ausgrid, Consultation Paper submission, 20 January 2012, p. 2

74 ENA, Consultation Paper submission, 20 January 2012, p. 7.

75 Ausgrid, Consultation Paper submission, 20 January 2012, p. 2.

76 SA DMITRE, Consultation Paper submission, 23 January 2012, p. 2.

77 Aurora Energy, Consultation Paper submission, 24 January 2012, p. 2

Recovery of efficient costs

The only submission received on this point is from the ENA. It is concerned that a return on capital actually employed to deliver safe and reliable services cannot be recovered if the proposed rule changes are implemented.[78]

Efficient utilisation

The ENA submits that significant complexity in tracking and adjusting the asset base created by the proposed rule changes would lead to problems providing a consistent ongoing reflection of the actual value of the assets invested to deliver the services.[79] Grid Australia notes that the MEU proposal would not have a material impact on the efficiency of the utilisation of assets as the MEU proposal would have no significant impact on the locational component of transmission prices.[80]

Investment incentives

The ENA submits that the proposed rule changes disincentivise network investment due to increased investment risk.[81] As a result, the service providers are concerned that the overall investments would likely be lower over time and incentives to undertake efficient expansion and upgrading work would be discouraged. Among all submissions from service providers, Aurora is the only one that considers that the MEU proposal would have a minimal effect on investment.[82]

Regulatory process

The ENA submits that the proposed rule changes mean that the regulator is to make engineering-style assessments of particular assets and that is beyond its role as an economic regulator. This need would likely require a more exhaustive, intense regulatory process with a higher level of regulatory uncertainty as to whether the outcome would meet the revenue and pricing principles contained in the NEL and NGL.[83]However, Aurora considers that the MEU proposal would add minimal administrative costs to the regulator.[84]

The AER notes that asset-by-asset assessment of capex proposals would create significant assessment costs.[85]

8.4 Consultant view

In respect of the replacement of assets which are fully depreciated but still useful, Covec considers that the source of the issue is the prediction error. It takes the view that asset lifetimes could be under- or over- estimated, and that these errors occur with

78 ENA, Consultation Paper submission, 20 January 2012, p. 8.

79 Id, p. 8.

80 Grid Australia, Consultation Paper submission, 20 January 2012, p. 19.

81 ENA, Consultation Paper submission, 20 January 2012, p. 8.

82 Aurora Energy, Consultation Paper submission, 24 January 2012, pp. 6, 10.

83 Ausgrid, Consultation Paper submission, 20 January 2012, pp. 3, 7, 8; ENA, Consultation Paper submission, 20 January 2012, pp. 7-9.

84 Aurora Energy, Consultation Paper submission, 24 January 2012, pp. 6, 10.

85 AER, Consultation Paper submission, 24 January 2012, p. 3.

approximately equal probabilities. To ensure consumers and firms are treated equally, both early death and long-lived assets could be dealt with through regulatory measures. Alternatively, treatment would also be symmetrical if neither is dealt with through regulatory measures. Covec is concerned that the proposal of the MEU is asymmetrical as it only deals with long-lived assets.[86]

In addition, as described in chapter 7, Covec sees incompatibilities between the MEU's ex ante approach in respect of fully depreciated assets and the ex post approach taken in respect of optimisation.[87]

Finally, Covec notes that the approach to fully depreciated assets proposed by the MEU has been applied in some jurisdictions internationally. However, its use has not been extensive, and when applied it has been controversial.[88]

8.5 Conclusions

The following subsections provide the AEMC's response as to whether there is a problem and the conclusions in respect of each assessment factor identified in chapter 5.

8.5.1 Response to the problem raised by the MEU

In respect of the replacement of fully depreciated assets, the problems identified by the MEU could be characterised as follows:

- Problem 1 - a service provider has an incentive to seek approval of an allowance to replace a fully depreciated asset in order to maintain a revenue stream from the asset; and
- Problem 2 - the rules do not impose sufficient "checks" on the service provider doing this.

As an initial observation, no evidence has been provided to the AEMC, either in the MEU's proposal or in submissions, that such asset replacement is happening in practice. The AEMC would welcome evidence that shows that fully depreciated assets are, or are not, being replaced even though they are still functional.

In terms of problem 1 above, the AEMC accepts that there may be certain benefits to a service provider in retaining a revenue stream from an asset being used to provide a service.[89] Among other things, this will assist the service provider to avoid the risk of bearing the cost of a timely replacement when the asset fails. However, there appear to be a number of countervailing factors which mean this effect is less significant.

First, while the current rules provide that a regulated business will receive a return on capital, the rate of return is subject to change. For electricity distribution NSPs, for example, the AER sets out its proposed approach in a statement of regulatory intent but the rate of return is only finalised at the regulatory determination for the NSP. This may mean, for example, that the relationship between the rate of return set by the AER and

86 Covec, Initial views on rule changes proposed by MEU, 6 February 2012, p. 11.

87 Id, p. 13.

88 Id, pp. 13-14.

89 Aurora Energy, Consultation Paper submission, 24 January 2012, p. 2.

the business's actual cost of capital may change over time. This lack of certainty will dampen the incentive to replace depreciated assets that are still functional.

Second, as pointed out in submissions,[90] most service providers do not have access to an excessive supply of capital and are likely to have to raise debt to fund the replacement of depreciated assets. This raises a range of complex considerations for a service provider, such as how highly leveraged the service provider's business is. While there may be the potential of a revenue stream for the replacement asset, this may not justify the capital-raising that would be required to build it.

Finally, the overall capex incentive mechanism has already been discussed in chapters 6 and 7 above. This will create a disincentive to overspend and an incentive to underspend during a particular regulatory period. It also means that the service provider will seek to defer any capex as long as possible.[91] Where there is already a functional asset being used to provide a service, there will be benefits to the service provider in deferring replacement of the asset within the relevant regulatory period to reduce its financing costs. This will allow it to retain more cash flow upfront for a certain time within the period.

In terms of problem 2 above, the AEMC accepts that the rules do not currently prohibit the regulator from approving, on an ex ante basis, capex for a service provider to replace an asset which is still functional. The regulator does, however, set a capex allowance which it believes reasonably reflects the efficient costs of a prudent operator. While this is not set on a project by project basis, some "bottom up" analysis of proposed projects, as well as a "top down" comparison of different service providers, would usually form part of the regulator's analysis. If the total does reflect an efficient service provider's capex, this will (in combination with the capex incentives under the regulatory framework that have been described previously) provide an expenditure discipline for the relevant service provider.[92] Within the expenditure allowance set by the regulator, the service provider will have reasonable freedom to manage its capex program to minimise expenditure. At the same time, it is likely to see the allowance as some constraint on capex which does not deliver functional benefits.

This appears to principles 2 and 5 of the revenue and pricing principles, that the rules already provide incentives to promote efficiency and avoid over-investment.

While not acting as a check on the regulator approving replacement of functional assets, the regulator does have the power to reject the depreciation schedules provided by a service provider. If the regulator is consistently finding that assets outlive the economic life set for them in the depreciation schedules, it may take a more aggressive approach to the schedules and require that asset lives be set on a longer basis. By pushing back the date when an asset will cease providing a regulated return, there should be less incentive for an asset to be replaced at an early stage.

90 APIA, Consultation Paper submission, 20 January 2012, p. 5.

91 ENA, Consultation Paper submission, 20 January 2012, p. 7; Envestra, Consultation Paper submission, 20 January 2012, p. 3.

92 Grid Australia, Consultation Paper submission, 20 January 2012, p. 18.

8.5.2 Analysis of proposed rules

Recovery of efficient costs

In respect of assets that have been approved ex ante by the regulator, the MEU's rule change - which only relates to assets that have been fully depreciated - would not affect the recovery of efficient costs. This is because if ex ante approval is not given the service provider may then decide not to build the asset it had proposed.

However, a way in which the recovery of efficient costs may be affected by this rule change proposal is in respect of replacement assets. The risk appears to be that, while a service provider might seek to invest in a new asset because it views the replacement of a fully depreciated asset as required and efficient, the regulator may not take the same view. If the asset is built anyway, there may be an increased risk that the service providers have to bear the financing costs and the time value of the money, before the capex is added to the asset base in next regulatory period. However, this risk should not be significant.

Efficient utilisation

In this case, efficient utilisation means service providers only replace asset at a time close to the end of its functional life. The proposals are likely to result in service providers retaining more assets in service for longer since service providers may not have been allowed capex for their replacement. The MEU's proposals should to some extent therefore achieve greater utilisation of the network. It is unclear whether this increased utilisation will in all circumstances be efficient, particularly if the service provider is pushing assets beyond the point it otherwise would.

Principle 6 of the revenue and pricing principles is therefore relevant, since the MEU's proposal could increase the overall utilisation of the network/pipeline.

Investment incentives

The MEU's proposal in respect of used and useful assets would not have a significant effect on the overall investment incentives for service providers. Since capex allowance for the replacement is to be determined ex ante, this would still leave the service provider with a decision as to whether to proceed with the investment.

In addition, if a service provider views the rule change as creating less flexibility for replacement of assets in circumstances where the life of an asset is not predicted correctly, the service provider would tend to favour assets for which it is easier to predict the life of the assets. This may mean the service provider has an incentive to invest in shorter life assets, which may lead to higher cost in the long term.[93]

Regulatory process

The proposed rules would increase the complexity and the costs in the regulatory process. First, detailed rules would need to be provided in advance and some guidance would need to be provided to assist the implementation.

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93 ENA, Consultation Paper submission, 20 January 2012, p. 5; APIA, Consultation Paper submission, 20 January 2012, p. 8.

In addition, the rule could impose a significant additional burden on the regulator. The regulator would be required to assess ex ante whether an asset which a service provider seeks to replace is still useful. As discussed in chapter 6, this would oblige the regulator to assess the network/pipeline on an asset by asset basis, a task which would require more time and resources. It would also require the regulator to make engineering-style assessments of a service provider's assets, as noted by Ausgrid and the ENA.[94] It would likely require more data than the regulator currently uses.

94 Ausgrid, Consultation Paper submission, 20 January 2012, pp. 3, 7, 8; ENA, Consultation Paper submission, 20 January 2012, pp. 7-9

Abbreviations

AEMC	Australian Energy Market Commission
AER	Australian Energy Regulator
APIA	Australian Pipeline Industry Association
Capex	Capital Expenditure
Commission	Australian Energy Market Commission
ENA	Energy Network Association
ESAA	Energy Supply Association of Australia
IPART	Independent Pricing and Regulatory Tribunal
MEU	Major Energy Users Inc.
NEL	National Electricity Law
NEO	National Electricity Objective
NER	National Electricity Rules
NGL	National Gas Law
NGO	National Gas Objective
NGR	National Gas Rules
NSPs	Networks Service Providers
Opex	Operating Expenditure
SA DMITRE	South Australian Department for Manufacturing, Innovation, Trade, Resources and Energy
SCER	Standing Council on Energy and Resources
STPIS	Service Target Performance Incentive Scheme

A Summary of issues raised in submissions

The table below provides a summary of the issues raised by stakeholders in their submissions to the consultation paper. The table, ordered by component of the rule change requests, sets out the Commission's response to each issue.

Issue	Stakeholder	AEMC Response
First part of the rule change requests - optimisation of asset base		
Whether there is a problem (regulated service providers and competitive markets)		
	APIA (p. 2) submits that the need for regulation to replicate a competitive market is not a requirement of the NEO or the NGO. APIA (p. 6) states that "replication of competitive markets is not considered by either the NGO or the Revenue and Pricing Principles. The NGO and RPP are concerned with maximising efficiency."	Regulation does not seek to completely replicate competitive conditions. Regulators try to promote an outcome which is consistent with the workable competitive market, not a perfect competitive market.
	Jemena Limited (p. 3) submits that the MEU proposal overlooks the fact that businesses that operate in competitive markets have strategies and practices available to them that are not available to regulated businesses.	Noted. In certain ways regulated businesses do not have the same choices and options as companies in a competitive market. Among other things, they may have obligations to meet reliability standards. See section 7.5.1 of this draft rule determination for further discussion.
	The ENA (p. 8) and Ergon Energy (p. 4) submit that it should also be acknowledged that firms operating in competitive environments have opportunities that are not available to regulated NSPs. They can: • Revalue assets throughout their lives; • Earn significantly higher returns which exceed the original cost of financing successful investments; • Withdraw capital from the delivery of services where the cost of financing is not met; and • Front-load depreciation to reduce the level of commercial risk from some	Noted. As above.

Issue	Stakeholder	AEMC Response
	investments.	
	The MEU (p. 5) submits that the two proposals reflect the practices of commercial competitive enterprises. It states that if a business is subject to competition, an asset is either closed down and written off if it is not able to add profitability of the business, or operated at a lesser output and the asset value written down to a level where the asset value reflects its value to the business.	See discussion above.
Whether there is a problem (incentive for over-investment)		
	Ausgrid (pp. 2, 8) does not support that there is an incentive to under forecast expected capital expenditure under the current regulatory framework, and the existing rules already provide effective incentives to ensure that capital expenditure is not in excess of approved allowances. It submits that if it under forecasts and spends in excess of the regulatory allowance, it would lose the time value of capital spent in excess of the regulatory allowance; or it needs to delay capital expenditure from other projects, or delay other projects to pay for an under forecast capital project.	Noted. See sections 6.1 and 6.3 of this draft rule determination for further discussion on this matter. The Capex incentive mechanism is being considered at general level by the AEMC in the context of the AER rule change requests on network regulation.
	United Energy and Multinet Gas (p. 3) state that the MEU's claims that the rules provide incentives to over-invest are unfounded, as engineering resources and skills are used to develop condition-based expenditure plans that optimise costs and service performance.	
	ESAA (p. 2) submits that the arguments in the MEU proposal fail to acknowledge the basic form of incentive-based regulation embodied in the National Electricity and Gas Rules. Under this form of regulation, if a service provider spends more than expected to do this it bears a portion of the extra cost and if it can do so more cheaply it retains a portion of the savings.	
	Aurora (p. 11) submits that the MEU provided no evidence that DNSPs build outsized assets to maximise the value of the regulatory asset base and so maximise their revenue. Moreover, it submits that an indication of what an efficient level of asset utilisation might be has not been provided. Aurora	Noted. See section 7.5.1 of this draft rule determination for further discussion on this matter.

Issue	Stakeholder	AEMC Response
	therefore suggests not changing the rule because the MEU couldn't show that there is a problem.	
	The ENA (p. 1) considers that the MEU has not provided clear supporting evidence of the claimed deficiencies in the regulatory regime to justify the proposed amendments. In particular, no substantive evidence of a systematic incentive to overspend has been demonstrated in the material included in the rule proposal, nor has the claimed issue of unjustified replacement of depreciated assets been supported with empirical, or even anecdotal, evidence. ENERGEX (p. 1), Envestra (p. 2) and ESAA (p. 2) take a similar view.	
Whether there is a problem (specific mechanism in the NGR)		
	APIA (p. 2) and Envestra (p. 3) submit that the NGR already have mechanisms addressing many of the issues the MEU has relied on as justification for the rule change proposal (Rule 77, 79, 84 and 85). Moreover, APIA (p. 4) notes that 85(1) has been used in the past under corresponding provisions in the predecessor to the NGR, the Gas Code.	There are mechanisms relevant to the optimisation of asset base in the NGR. They are provided in rule 85 and rule 77. One gives the regulator the power to include a capital redundancy mechanism in an access arrangement; one is the ex post prudency review available to the regulator as part of rule 77 which excludes capex which is not prudent or efficient from the asset base. The MEU has not adequately established why the provisions in the NGR do not act as a deterrent against under-utilisations of assets. See section 7.5.1 of this draft rule determination for further discussion on this matter.
	United Energy and Multinet Gas (p. 5) notes that the NGR presently provide scope for a mechanism to be included in an access arrangement to remove assets from the asset base that ease to contribute in any way to the delivery of pipeline services. However, United Energy and Multinet Gas note that rule 85(1) does not mandate the removal of under-utilised assets from the asset base. They do not support the duplication of rule 85(1) from the National Gas Rules in light of current regulatory practice and the inherent difficulties in exposing network service providers to stranded asset risk. Moreover they would support the removal of rule 85(1).	
	The ENA (p. 9) submits that rule 85 of the NGR has generally had limited practical operation under the gas regime, because of the rarity of capital redundancy arising in an interconnected gas network. It is noted that Rule 85 is identical to a provision which has operated under the prior National Gas Code since 2000 without regulatory bodies seeing a need to generally apply such	

Issue	Stakeholder	AEMC Response
	powers in any material cases. Nonetheless an important feature of the rule is the requirement (rule 85(4)) that the regulator must take into account the possible consequences of any stranding decision. The lack of any substantial use of these provisions in the gas regime suggests that their replication in the electricity rules may be otiose.	
	Jemena Limited (pp. 11-12) submits that although access arrangements include redundancy mechanisms, those mechanisms have been invoked only infrequently. Jemena would not support duplication of the NGR provisions in the NER because of the uncertainty that it would create for investors in electricity infrastructure.	
Recovery of efficient cost		
	Aurora (p. 6) notes that an increase in the equity beta value in the WACC formula may be appropriate to address the increased investment risk introduced by the proposed optimisation approach. ESAA (p. 2) takes the same view.	The Commission is of the view that the risk of service providers not recovering costs under the MEU rule change is likely to be low in the long term on the basis that they should be compensated for any added risks through the cost of capital. See section 7.5.2 of this draft rule determination for further discussion of this.
	Ausgrid (p. 5) considers that the MEU's proposed regulatory asset base optimisation would introduce significant risks to investors. For example, if replacement expenditure was retrospectively considered unnecessary by the AER, DNSPs would not be able to recover the costs of these assets through regulated revenues. The likelihood of not being able to recover the costs of an asset would be uncertain, which would further increase risk and thus further increase investor's required rate of return.	
	United Energy and Multinet Gas (p. 9) submit that the proposed rule change would create significant uncertainty and regulatory risk regarding cost recovery. Furthermore, United Energy and Multinet Gas (p. 12) note that the proposed rule change focuses on allocative efficiency at the expense of the total cost recovery. They submit that a reduction in total network revenue as a result of the under-utilisation of a particular network asset will adversely affect the achievement of productive and dynamic efficiency.	

Issue	Stakeholder	AEMC Response
Efficient utilisation		
	The ENA (p. 5) submits that the likely effects of the proposed rule on efficient utilisation of an asset are ambiguous due to the indirect relationship between initial capital, operating costs and the degree of asset utilisation. Once installed, user choices about the extent of network usage dominate asset utilisation outcomes and network service providers have little control over utilisation outcomes.	While some user choices will be hard to predict, service providers will be able to expect some of these. This should enable service providers to respond to a certain extent to incentives not to build assets which have a chance of being under-utilised.
	Ausgrid (p. 7) submits that the current rules provide effective incentives for utilisation of assets. Under the current rules, the AER is required to determine whether forecast capital expenditure reasonably reflects the efficient costs that a prudent electricity distribution network service provider (DNSP) would incur in maintaining quality, reliability and security of electricity supply. If existing assets are under-utilised the AER can consider this in determining whether future capital expenditure should be allowed.	The Commission agrees with the MEU that the proposal should result in the overall degree of utilisation of assets in the system increasing to some extent.
	Grid Australia (p. 2) submits that the proposal from the MEU in practice would have little effect on the efficiency of pricing to individual customers, and hence the efficiency of the utilisation of the network. This is because the locational element of existing transmission prices already provides a signal for the efficient use of the transmission network that is able to account for surplus capacity on the network. This locational element would be materially unaffected by whether or not underused assets were optimised. The efficient use of the network would be improved by addressing the pricing rules directly, rather than through the costly measure approved.	
	SA DMITRE (p. 1) submits that it is important to distinguish between assets which are required to be available for service as the need arises and assets genuinely surplus to requirement. One example in its submission is that South Australian electricity networks are constructed to service a peak demand which is about double the average demand, and thus a proportion of network assets are used below their capacity most of the time. Another example is that the Adelaide	

Issue	Stakeholder	AEMC Response
	Central Area electricity transmission supply is provided with built in back-up capacity to meet supply security standards.	
	The MEU (p. 8) considers that the AER rule change proposal does not deal with the efficient utilisation of assets. It submits that the rule changes need to reflect changes in market structures and circumstances. It provides some examples of assets that are likely to become redundant or under-utilised under these circumstances, such as displacement of high carbon emitting generators, introduction of new gas-fired generators, emergence of new renewable energy sources, reduction in demand from major industrial loads, and relocation of major industrial activities off shore or within Australia.	As set out in the AEMC's directions paper on the AER rule change requests, the Commission considers that the capex incentive mechanism in the NER could benefit from enhancement. This includes how the regulatory asset base is set and changes over time. However, as discussed in section 7.5.1 of this draft rule determination, the Comission does not consider that the MEU has adequately established that the problems raised in its rule change rquests warrant the solutions it has proposed.
Investment incentives		
	Ausgrid in its letter states that the MEU proposal is inconsistent with the ex ante nature of the current regulatory framework. It also considers that the proposed changes will significantly increase investment risk and raise the cost of capital. Ausgrid (p. 5) notes that the MEU 's proposed asset base optimisation would provide significant disincentive to invest in capital and this would threaten the reliability and security of electricity supply, as well as the safety and reliability of electricity networks.	On one hand optimisation would put pressure on service providers to reduce inefficient investment, on the other hand optimisation could undermine, rather than promote efficient investment. This is due to the risk that certain assets will not be installed or that smaller sized investment is likely to be more attractive for service providers. See section 7.5.2 of this draft rule determination for further discussion on this matter.
	APIA (pp. 1-2) submits its concern about the uncertainties and the incentives created by the proposed changes. It also submits that the implementation of this rule change would create further incentive for inefficient under-investment, through suboptimal sizing of pipelines, designed only for current demand, and through increased perception of regulatory risk that acts either as a deterrent to further investment or increases the cost of financing existing investment.	
	APIA (p. 8) considers the proposed rule change would lead to less efficient investment in energy infrastructure:	

Issue	Stakeholder	AEMC Response
	• expect investment in smaller increments of capacity to avoid the potential for reductions in the review. The result will be a substantially greater capex requirement in the long run, thereby increasing the cost of gas transportation; • expect the increase in the systematic risk of the businesses thereby increasing the value of Beta used in calculating the cost of equity under the CAPM; and • the focus is on minimising the risk of stranding as a result of re optimising of their capital bases at regulatory reviews.	
	ENERGEX (pp. 1-2) submits that the rule change request would create disincentives and uncertainty to network investments. Also that it represents a change in the fundamental nature of the forward-looking incentive-based approach adopted by Australian policy-makers and regulatory bodies.	
	The ENA (p. 1) submits that the proposal surrounding the re-optimisation of network business's regulatory asset bases would create new disincentives to investment and additional regulatory risks requiring offsetting compensation for the risk that past investments will be stranded. The ENA (pp. 5, 9) also submits that the proposal explicitly contemplates investment which was made on a prudent ex ante basis, not being able to be recovered by the network. In addition, it notes that the prospect of investment being stranded at a future regulatory reset is likely to deter the making of efficient investment which has a material risk of assets being optimised prior to a full regulated return being achieved; if implemented, the proposal would strongly undermine incentives to invest in a timely manner with a view to capturing economies of scale, due to the risk of future asset stranding; the proposal would promote short-term incremental network development to meet short-term demand.	
	The ENA (pp. 4-5) submits that the re-opening of established regulatory asset base values from the MEU faces a number of serious disadvantages: • creates an incentive to sub-optimally undersize network assets to meet short-term demand within a regulatory period rather than minimise economic	

Issue	Stakeholder	AEMC Response
	costs to serve over the life of the relevant assets; • could create distorted incentives for networks to reduce refurbishment capital expenditure, or undertake operating expenditure in preference to refurbishment capital expenditure where such costs are not recognised in replacement cost valuation approaches; and • does not provide stronger incentives as decisions to invest are irreversible, as only future decisions, still made in an environment of uncertainty as to whether demand will meet forecast, can be influenced.	
	Envestra (p. 3) submits that the rule change request is likely to reduce investment as there will be an increased risk that the AER will disallow capital expenditure incurred in the previous regulatory period, thereby stranding assets. It states that most private sector companies, through capital rationing and asset management plans, aim to defer investment as long as possible, and are more likely to underspend approved capital allowances.	
	Envestra (p. 5) submits that a preferred approach would be to develop a regime that provides natural gas distributors with incentives to optimise capital expenditure.	
	Ergon Energy (p. 5) submits that it believes the proposed rule change would have negative impact on investment through uncertainty and inefficiency. This would lead to an increase in the cost of capital as a higher return would be demanded to offset increasing risk. Inefficient investment would be promoted as DNSPs would be encouraged to build only for current demand, rather than building for the future (i.e. allowing excess capacity for growth). Ergon Energy (p. 8) believes a more appropriate avenue to introduce a capex incentive mechanism could be through the Efficiency Benefit Sharing Scheme (EBSS). It notes that Clause 6.5.8(b) of the rules currently provides the AER with the power to introduce a capex incentive scheme via the EBSS.	
	Grid Australia (pp. 6, 16, 17) does not consider that the proposed solution to introduce an assessment to optimise assets will promote the efficient investment	

Issue	Stakeholder	AEMC Response
	in the electricity transmission network. It considers that the proposal to optimise assets will discourage efficient investment by providing downside risk to investors that such an investment may be removed from the asset base (even if it was efficient at the time of making the investment decision), particularly for interconnection and like projects. It notes that it is likely that the MEU's proposal would deter investment in assets for which demand is hard to predict.	
	Jemena Limited (p. 10) submits that the overall effect will be negative. MEU's proposals, if adopted, will introduce a significant new asymmetric incentive which will increase service providers' cost of capital.	
	Aurora Energy (p. 6) considers that the introduction of the ex post optimisation of regulatory asset base would have a negative impact on investment. It submits that the incentive to invest is unlikely to be attractive if a return is provided upon only a portion of the investment, with that portion being proportional to the utilised fraction of the infrastructure. Furthermore, Aurora considers that the uncertainty due to potential, unquantifiable reduction in return does not provide a positive incentive for investment.	
	The AER (p. 3) notes that in a review in 2004 the ACCC noted at the time that locking in the RAB provides the regulator with greater control over tailoring incentives and also provides more certainty than a revaluation approach.	
	The AER (p. 3) submits that under the existing framework the risk of under-utilisation of network assets resides with consumers rather than NSPs. The MEU rule change proposal would result in a reallocation of risk that may require further regulatory changes in the future.	
	The AER (p. 4) is of the view that the "40/60 sharing factor" sharing mechanism would strengthen incentives to invest efficiently. The AER also suggests focusing on improving asset utilisation through mechanisms that improve the effectiveness of the planning processes and on pricing mechanisms that encourage efficient locational decisions.	

Issue	Stakeholder	AEMC Response
	ESAA (p. 3) suggests that since the regulatory asset base is a key driver of future cashflows, it is essential that investors have confidence that once agreed by the regulator, any additions to the regulatory asset base are carried forward and can earn a return over their economic life. The risk caused by the uncertainty of the return will increase the investor's required cost of capital and will in turn lead to higher costs for consumers.	
	The MEU (p. 4) submits that there will be an incentivisation of efficient investment and a disincentivisation of over-investment, gold-plating and inflated costings. This is because existing investments will be efficiently costed but it will result in encouraging downstream investments, which in turn will encourage demand for energy and hence a need for new efficient investments.	
Regulatory process		
	The ENA (pp. 5-6) submits that the nature of the regulatory process and the role of the regulator would be fundamentally altered by a requirement to apply the additional clauses proposed by the MEU. The AER has indicated in its recent rule change request that it currently lacks the resources and capacity to fully analyse and assess detailed information put forward by businesses in their regulatory proposals under the existing rules.	The AEMC agrees that ex post optimisation would be difficult to implement and it would increase the complexity and costs of the regulatory process. See section 7.5.2 of this draft rule determination for further discussion on this matter.
	Ergon Energy (p. 8) submits that if the proposed rule change is adopted, it should not commence until the regulatory control period subsequent to the next regulatory control period (i.e. 2020–25 for Queensland DNSPs).	
	Grid Australia (p. 19) submits that the MEU proposal would introduce considerable complexity in the regulatory process given it would require the AER to apply an impracticable criterion.	
	Jemena Limited (p. 11) submits that the increase in administrative burden is likely to be considerable if, as implied, there would be rigorous ex post and ex ante reviews of capex, and if regulatory asset base were to be re-optimised at	

Issue	Stakeholder	AEMC Response
	every review.	
	Jemena Limited (p. 14) submits that if MEU's proposals are translated into rules, then the AER would have to develop and publish guidelines detailing how it will: • administer the requirement to optimise businesses' RABs; • determine whether a particular asset replacement is or is not premature. There would then need to be a period of time allowed before any business is required to submit an access arrangement proposal under the new arrangements. It supports the AEMC's considerations about the possible impact on scheduled revenue determination processes, and the timing of rule changes arising from the AER/EURCC proposals, as relevant considerations.	
	MEU (p. 10) suggests that the MEU proposal should commence with the first access arrangement review under the next round of regulatory reset.	
	ESAA (p. 3) considers significant costs will be added to the regulatory process. It considers that the regulator will need to undertake a whole new set of significant and complex analysis on the RAB. Moreover, service providers need to invest greater resources in the regulatory process in order to satisfy the terms of the rule change, and other stakeholders would also be affected if they wished to engage in the process.	
	The ENA (p. 9) submits that each of the proposed rule changes would represent a significantly increased regulatory burden. Asset base revaluation exercises are costly, resource-intensive, and lengthy processes. The carrying out of such exercises on a five yearly basis would substantially add to the overall costs of typical regulatory reviews, a cost which has been estimated by the Brattle Group to exceed $325 million per five year regulatory period.	
	The MEU (p. 7) does not consider that the proposed rule could place significant administrative burden on the AER and businesses as data is available at	

Issue	Stakeholder	AEMC Response
	regulatory resets. It submits that the regulatory regime allows a regulated business to remove assets that are not fully depreciated but need replacing because of system needs.	
	Aurora (pp. 8, 10) considers that the costs and benefits of the proposed rule are not symmetrically realised. It considers that any administrative burden that falls upon the AER and the service providers will eventually be passed onto the customers through network tariffs and the taxation base. It considers the administrative burden would be significant. This is because the current assessment criteria relate to the total of the forecast capex, not the individual projects that make up the forecast capex. However the MEU rule change request would require the AER to undertake a complete assessment of all capital infrastructure projects. Also, past experience of review implies that a significant amount of resources and time will be required of the AER and service providers.	
	The AER (p. 2) accepts that there is a need to strengthen incentives on network service providers to only incur efficient capital expenditure. However, there are issues that would need to be considered: • an ex post review may be an intrusive and resource intensive process; and • issues in measuring and assessing asset utilisation in energy networks as part of the optimisation process.	
	Envestra (p. 3) submits that detailed assessment of the condition of assets will increase the costs of regulation, requiring the regulator to get more involved in capital expenditure decision making, an area where they have argued previously that they are not well qualified to opine.	
	Envestra (p. 4) submits that the AER would require significant additional effort as the AER needs to assess both forecast capital expenditure and capital expenditure from previous regulatory periods. It points out that it is most likely that natural gas distribution businesses would be required to keep more detailed information on capital expenditure to provide the information required by the	

Issue	Stakeholder	AEMC Response
	regulator.	
	ESAA (p. 2) considers that the proposals add to the regulatory burden not just for the networks, but for other stakeholders including the regulator itself.	
	Jemena Limited (p. 11) submits that the AER would be required to micro-manage the business. The AER is not equipped for that role. Moreover, such a role is inimical to the principles of incentive regulation where it is accepted that businesses themselves are in the best position to plan and manage their assets and operations.	
	The MEU (p. 6) submits that the AER is the appropriate body to determine and assess the age and condition of a regulated network business' asset. The AER is doing this job as it is required to assess the age and condition of the regulated assets as part of the AER's assessments under the regulatory regime. A similar approach should be carried out to do a review of the existing assets. The activity required by this rule change adds little to the AER work scope. In addition, there is no more information requirement to enable the AER to undertake the review.	
	Ergon Energy (pp. 5-6) does not believe it is appropriate for the AER to determine and assess the age and condition of our assets. It submits that this topic was rejected by the AEMC during the 2006 Rule determination process on the Economic Regulation of Transmission Services. Further, it considers that the AER does not have the expertise, resources or the required depth of knowledge to independently determine and assess the age and condition of a particular asset.	
Other		
	The AER (p. 4-5) notes that other proposals may address the issues raised by the MEU: the proposed rule changes to strengthen incentives for efficient capital expenditure; the Transmission Frameworks Review; and Regulatory Investment Test-Transmission. It is of the view that its rule change proposal submitted in September 2011 represents a balanced package of measures capable of	Noted.

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	appropriately addressing the key issues raised by stakeholders, including the MEU.	
	ESAA (p. 2) suggests that the AER rule change process is the appropriate way to consider these issues raised by the MEU.	
	The ENA (p. 5) submits that Australian and international regulatory practices do not support movement to a revaluation approach.	Noted.
Second part of the rule change requests - use of fully depreciated assets		
Whether there is a problem		
	MEU (p. 5) submits that a competitive business will continue to use assets which have been fully depreciated but which are still contributing to the profitability of the business.	Noted.
	APIA (p. 6) submits that the MEU proposed changes are asymmetric. The MEU's depiction is incorrect. It states that "while in a competitive market a business cannot recoup early equipment write offs they can continue to earn returns on assets that have been written down." Therefore, it should be allowed to earn a return from the used and useful assets if they are to be used. Aurora (p. 2) takes the same view.	Noted.
	Aurora (p. 2) agrees with the MEU that the current NER pricing regime incentivises replacement of fully depreciated regulated assets because the regulated revenue stream from an asset is a function of the asset value, therefore this can potentially lead to the replacement of a serviceable asset solely to retain a revenue stream.	While there may be the potential of a revenue stream for the replacement, this may not justify the expenditure that would be required to build it.
	Ausgrid (p. 2) considers that the problems identified by the MEU do not exist. It states that its asset replacement decisions are not based on whether the economic life of assets has expired, but on the condition of the assets from an engineering perspective, and their ability to perform their intended functions	The AEMC agrees that no evidence has been provided on the extent to which service providers replace assets automatically so that they can get a regulated return on those assets. The AEMC is exploring capex incentives

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	safely and reliably.	generally in the context of the AER rule changes on network regulation. A detailed discussion is contained in section 8.5.1 of this draft rule determination.
	SA DMITRE (p. 2) submits that there is a protection mechanism to ensure Network Service Providers do not inefficiently depreciate assets in the form of AER approval of the economic life of assets. Ausgrid (p. 2) also states that the AER has the ability to substitute its own replacement expenditure forecasts when determining regulated revenues.	While not acting as a check on the regulator approving replacement of functional assets, the regulator does have the power to reject the depreciation schedules provided by a service provider. For example, according to 6.12.1(8), if the AER decides against approving the depreciation schedules submitted by the DNSP, it can provide a decision determining depreciation schedules in accordance with 6.5.5(b).
	ESAA (p. 2) submits that a service provider makes more money if it can retain an asset in service for longer than expected regardless of whether there is any asset base that can be related to that asset, because it can defer the replacement cost. It also makes more money if it considers that it can build a smaller rather than a larger asset to meet its requirement. The ENA (p. 7) also takes the view that network businesses are rewarded for the deferral of replacement capital.	Noted. See sections 6.3 and 7.5.1 for further discussion on this issue.
		Noted.
	Ergon Energy (pp. 3-4) and the ENA (p. 7) disagree with the MEU's contention that viable assets are replaced once their depreciated value reaches zero and notes that the MEU does not offer any substantiated evidence that businesses face inappropriate incentives to do so.	Noted. See section 8.5.1 of this draft rule determination for further discussion on this matter.
	Jemena Limited (p. 13) submits that MEU has not produced any evidence that the premature replacement is a problem. It is possible to envisage debates about whether a "premature" replacement was for the purpose of generation profit or was justified/required on some other ground. In addition, the AER would be required to examine the business at the micro level - something it is not equipped to do.	Agree. See section 8.5.1 of this draft rule determination for further discussion on this matter.

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Recovery of efficient cost		
	The ENA (p. 8) submits that the proposed rule changes potentially breach the principle of the recovery of efficient costs by constraining a network firms' capacity to recover a return on capital actually employed to deliver safe and reliable services.	If ex ante approval is not given the service provider may then decide not to build the asset it had proposed. See section 8.5.2 of this draft determination for further discussion on this matter.
Efficient utilisation		
	The ENA (p. 8) submits that the proposed rule changes create substantial additional complexity in tracking and adjusting the regulatory asset base of regulated networks, potentially excluding it from providing a consistent ongoing reflection of the actual value of the assets invested to deliver the services.	The proposals are likely to result in service providers retaining more assets in service for longer since service providers may not have been allowed capex for their replacement. However, it is unclear whether this increased utilisation will in all circumstances be efficient, particularly if the service provider is pushing assets beyond the point it otherwise would.
	Grid Australia (p. 19) submits that the MEU proposal would not have a material impact on the locational component of transmission prices and therefore will have no discernible impact on the efficiency of the utilisation of assets.	
Investment incentives		
	Aurora (p. 6) considers that the proposed rule change would have a minimal effect on investment. Since investment is only required to fund the construction of new infrastructure, the deferral of the need for new construction should have no impact.	The MEU's proposal in respect of used and useful assets would not have a significant effect on the overall investment incentives for service providers. The capex allowance for the replacement is to be determined before the regulatory period. See section 8.5.2 of this draft rule determination for further discussion on this matter.
	The ENA (p. 8) submits that the proposed rule changes significantly affect incentives to invest as they would fail to provide a return on capital employed to deliver regulated services. As a result, there would likely be a lowering of overall investment levels, and the muting or 'chilling' of incentives to undertake efficient expansion and upgrading work on network infrastructure due to concern that a proportion of this investment would be non-recoverable.	

Issue	Stakeholder	AEMC Response
	Grid Australia (pp. 3, 19) submits that the best mechanism to encourage efficient replacement expenditure is to put in place financial incentives (supported by appropriate regulatory obligations) for TNSPs to make efficient decisions with respect to all expenditure, including replacement capital expenditure. If the MEU is proposing an ex-post prudency test for replacement expenditure, regulatory costs will increase and efficient investment may be dissuaded depending on how the test is applied and the level of certainty therein.	Noted.
	The AER (p. 3) agrees with the need to ensure that effective use is made of all assets, including depreciated assets. However it notes that it is not clear that the proposed changes to the rules will alter the incentive on service providers to replace fully depreciated assets during the regulatory period; and asset-by-asset assessment of capital expenditure proposals would create significant assessment costs.	Noted.
	The MEU (p. 9) submits that with respect to the proposal related to the replacement of a fully or partially depreciated asset from being included in the regulatory asset base, it believes that its solution provides an approach which is consistent with incentive regulation.	Noted.
Regulatory process		
	Ausgrid (pp. 3, 7, 8) does not support the amendment to the asset management as it is particularly concerning that the MEU has suggested the AER perform the role of asset manager and approve any asset replacements. The proposed changes would shift focus away from sound engineering based management of energy networks.	The proposed rules would increase the complexity and the costs in the regulatory process. The detailed discussion is contained in chapter 8.5.2 of this draft rule determination.
	The ENA (p. 8) submits that the proposed rule changes result in the AER being required to make judgements which go beyond the scope of an economic regulator, inevitably leading to it being drawn into making contentious engineering-style assessments over the definition of a 'used and useful' network asset. This need would likely require a more exhaustive, intense regulatory	

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	process with a higher level of regulatory uncertainty as to whether the outcome would meet the revenue and pricing principles contained in the National Electricity Law and National Gas Law.	
	The ENA (p. 10) submits that there is insufficient detail as to how the rule proponent envisages the AER acting to ensure this regulatory requirement is met. It is difficult to conceive of the AER being able to meet this rule requirement whilst fostering a stable, certain and incentive-based regulatory framework which underpins efficient ongoing investment.	
Other		
	The ENA (p. 7) also points out that the definition of "replacement" capital expenditure cannot often be readily or clearly separated from other types of capital expenditure (such as augmentation expenditure) which may have multiple underlying drivers. For example, replacement of a transformer with a higher rated transformer can often address both the need to replace an aging asset and the need to increase network capacity.	Noted.
	SA DMITRE (pp. 1-2) submits that the AEMC needs to consider the consequences of the uncertainty caused by the ex-post review from the AER to determine if a depreciated asset is still useable. It is concerned that there is an increasing risk of supply failure if the Network Service Provider is not replacing the end-of-life assets as a result of this uncertainty. When inevitable failure occurs, the costs to consumers and the economy may quickly exceed the asset replacement cost. It also submits that the AEMC needs to consider how in-service assets which form part of the shared network but are not included in the RAB should be taken into account. It points out the MEU proposal does not appear to consider what the consequences will be if not including replacement assets in the RAB on the Service Target Performance Incentive Scheme.	Noted.
	APIA (p. 9) submits that information about asset age and depreciation are	Noted.

Issue	Stakeholder	AEMC Response
	provided. In addition, information supporting ex ante and ex post capex includes information about assets that are (i)replacement in nature; (ii) otherwise needed to stay-in-business; or (iii) associated with growth in demand either to expand capacity or extend its reach. It notes that generally, any assessment of age and condition is supported by expert engineering consultants. It is undesirable ground for the AER to have to undertake decisions.	
	Ausgrid (p. 2) also states that an audited network management plan is required to be submitted to the NSW Director-General of NSW industry and Investment under the Electricity Supply (Safety & Network Management) Regulation 2008.	Noted.
	Grid Australia (p. 18) notes that there is some uncertainty as to whether the MEU is proposing an ex-ante or ex-post assessment of replacement assets. If the MEU's concern is with ex-ante forecasts, then the Rule change proposal is unnecessary as the AER already considers the need for replacement as part of its assessment of revenue proposals. In addition, there are a number of factors for the consideration of replacement. Used and useful test should not be the only factor to determine business' decision.	Noted.
	Ergon Energy (p. 4) suggests that inappropriate investments, such as over-sized assets and replacement of viable assets for revenue improvement reasons, could be effectively handled by auditing NSPs' policies rather than through post investment optimisation.	Noted.
	In Austrid (pp. 3, 7, 8) view, the asset remaining lives in the AER's post-tax revenue model is not an indicator of replacement need or cost and should not be used as one. Ausgrid's replacement plan looks at the age and condition of assets from an engineering perspective as well as the cost trade-off between maintaining existing assets and replacing old assets.	Noted.