Supplementary Discussion Paper

Review of the Draft Statement of Principles for the Regulation of Transmission Revenues

Capital Expenditure Framework

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1. Introduction

Since 1 July 1999, the Australian Competition and Consumer Commission (Commission) has assumed responsibility for the regulation of transmission revenues in the National Electricity Market (NEM) on a progressive basis. It has undertaken first round revenue assessments of each of the transmission network service providers (TNSPs) in the NEM. In assessing the revenue requirements for the TNSPs in New South Wales, TransGrid and Energy Australia, the Commission is conducting its first revenue resets.

The National Electricity Code (Code) sets out the general principles and objectives of the transmission revenue regulatory regime to be applied by the Commission. In part, the Code establishes that the transmission revenue regulatory regime must achieve outcomes which are efficient and cost effective; foster efficient investment; and are reasonably accountable, transparent and consistent over time. Similarly, in its December 2003 statement, the Ministerial Council on Energy (MCE) adopted the following principle to underpin transmission policy in the NEM:

> *"Transmission investment decisions should be timely, transparent, predictable and nationally consistent, at the lowest sustainable cost."*

The regulation of capital expenditure (capex) plays a critical role in determining whether these objectives are met, as capex is one of the biggest drivers of a TNSP's revenue. The current regulatory framework puts the Commission as regulator in the position of attempting to assess the prudency of the investment program after the investments have been made. In undertaking this assessment, the Commission will take into account regulatory test assessments undertaken by TNSPs. The regulatory test is the prudency test set out in the Code to assess the economic efficiency of investment decisions.

In the recent Discussion Paper *Review of the Draft Statement of Principles for the Regulation of Transmission Revenues* (Regulatory Principles Discussion Paper) the Commission proposed adopting an approach for assessing a TNSP's capex that relied more heavily on the regulatory test. Indeed, the Commission noted that revenue caps will accommodate new investment if proposed capex programs satisfy the regulatory test.

The Commission's review of the regulatory test, recent assessment of the Murraylink conversion application, and current reviews of the revenue caps of TransGrid and EnergyAustralia have led it to question whether the objectives and principles outlined above can be best achieved under the NEM's current transmission investment framework.

This paper explores a different approach to transmission investment in the NEM, one that relies more on assessing a firm cap on TNSP investment - that provides incentives for economic efficiency and reduces regulatory uncertainty. As this potentially entails a change in approach to that outlined in the Regulatory Principles Discussion Paper, the Commission believes that it is appropriate to release this Supplementary Discussion Paper.

The paper is structured as follows. The following section describes how TNSP investment is regulated now and traces the history of these arrangements, while section 3 discusses the issues that have arisen under the current arrangements. Section 4 proposes potential reform to the regulation of transmission investment in the NEM, with the introduction of a firm ex-ante cap on capital expenditure. Section 5 discusses circumstances where it may be appropriate to exclude certain investment from the firm ex-ante cap, while section 6 discusses circumstances where it may be appropriate to "re-open" the ex-ante cap. Section 7 outlines implications of the proposed arrangements for the operation of the regulatory test, while section 8 outlines the Commission's process for considering these capital expenditure framework issues.

This Supplementary Discussion Paper should be read in conjunction with the Draft Decision on the regulatory test, which is being released at the same time as this paper.

2. The history of the regulation of transmission investment in the NEM

2.1 Introduction

This section provides background information on how TNSP investment is regulated in the NEM. It draws out the key features of the current framework for the regulation of transmission investment, by discussing the history of these arrangements. It focuses, in turn, on the *Draft Statement of Principles for the Regulation of Transmission Revenues* (Draft Regulatory Principles), the Regulatory Test and the Network and Distributed Resources Code changes.

2.2 The ACCC's regulatory obligations under the Code

Clause 6.2.2 of the Code sets out the objectives of the transmission revenue regulatory regime to be administered by the ACCC. The clause does not prescribe the details of the mechanism that the ACCC should implement, but rather defines the outcomes that the ACCC must seek to achieve. These include:

- an "incentive-based" regulatory regime which provides "an equitable allocation" between service providers and their customers, of the efficiency gains "reasonably expected" by the ACCC;
- "prospectively" providing a revenue stream which includes a "fair and reasonable rate of return" on "efficient investment"; and
- creating "an environment which fosters an efficient level of investment … ".

2.3 Draft Regulatory Principles

The May 1999 Draft Regulatory Principles was a first attempt from the Commission to outline the regulatory framework that it would adopt to achieve these outcomes. In the Draft Regulatory Principles, the Commission noted that there is a dilemma as to how actual and forecast capex should be treated at the start of the regulatory period given knowledge of forecast and actual capex from the previous regulatory period and forecast capex for the next regulatory period.

Accordingly, the Commission noted that it would:

- At the start of the regulatory period roll into the asset base projected capex for the regulatory period when it is scheduled to become operational.
- In relation to capex at the start of the next regulatory period for the previous regulatory period, include in the asset base only actual capital expenditure since the previous review.[1]

[1] ACCC, *Draft Statement of Principles for the Regulation of Transmission Revenues* (Draft Regulatory Principles), p55.

At the regulatory reset the Commission noted that it would consider reviewing the prudency of large capital expenditures and may seek assurances that the TNSP has complied with the requirements of clause 5.6 of the Code.[2] Such a process necessitates a project-specific assessment of capital expenditure.

The Commission acknowledged that this may encourage the entity to spend what had been forecast, knowing that it will earn a return and not seek to achieve efficiencies in capital expenditure.

Therefore, there was a need to put in place a mechanism to try to ensure that the capex spent was efficient. In the draft statement, the Commission noted that in gas, new facilities investment needed to pass a prudent investment test to be included in the capital base. The Commission proposed that a similar test be implemented for electricity transmission assets.

Statement S5.1 notes that the TNSP's asset base can be increased to recognise capital expenditure. In part it notes that the asset base can be increased by actual cost provided that "the amount does not exceed the amount that would be invested by a prudent TNSP acting efficiently in accordance with good industry practice and to achieve the lowest sustainable cost of delivering services." Statement S5.1 also dealt with the optimisation issue by noting that if the actual capital cost incurred by the TNSP was deemed excessive by the Commission then only the prudent amount of expenditure will be added to the regulatory asset base. Once again, this requires a project-specific assessment of capital expenditure.

2.4 Regulatory Test

While recognising the importance of prudent investment, the Draft Regulatory Principles did not specify the prudency test that was to apply in any great detail. It was not until the introduction of the regulatory test in 1999 that a prudency test became part of the regulatory framework.

There are two limbs to the regulatory test. A transmission augmentation is deemed to have satisfied the test if it maximises the net present value of the market benefits, having regard to a number of alternative projects, timings and market development scenarios. Augmentations required due to an inability of TNSPs to meet network reliability requirements satisfy the regulatory test if they minimise the net present cost of meeting the standard.

Initially, these regulatory test outcomes were linked to a TNSP's capex allowance. From the time of its promulgation at the end of 1999 to March 2002, the Code provided that any investment that satisfied the regulatory test would be rolled-in to the regulatory asset base. During this time, the National Electricity Market Management Company (NEMMCO) was obliged under the Code to conduct the regulatory test for inter-regional investments, and in so doing to establish an Inter-regional Planning Committee (IRPC) to advise it accordingly. NEMMCO's decisions could be reviewed by the National Electricity Tribunal. This appeal route was used when NEMMCO's

[2] The Commission notes that since the time of the writing of the Draft Regulatory Principles, clause 5.6 of the Code has been amended.

decision that TransGrid's SNI, a proposed interconnector joining South Australia and New South Wales, satisfied the regulatory test was appealed to the National Electricity Tribunal.

In developing intra-regional augmentations, TNSPs were required to satisfy the regulatory test. They were entitled to include in their Regulatory Asset Base the capex determined in their application of the regulatory test.

2.5 Network and Distributed Resources Code Changes

The time delays potentially involved in considering a network augmentation proposal under the Code were demonstrated by the SNI process. NEMMCO determined in December 2001 that SNI passed the regulatory test. Subsequently, this was appealed to the National Electricity Tribunal and the Victorian Supreme Court, with a further hearing pending before the Victorian Court of Appeals. These concerns prompted calls to streamline the process for approving network augmentation.

From March 2002, with the Network and Distributed Resources Code change package, substantial changes to the application of the regulatory test took effect. The role of conducting regulatory test assessments for inter-regional projects was removed from the IRPC, which meant that there was no need to separately distinguish inter and intra regional assets.[3] These Code changes introduced a distinction between small assets (less than $10 million) and large assets (greater than $10 million).

Importantly, TNSPs were given the responsibility of applying the regulatory test to inter-regional augmentations. Given that TNSPs were to apply the regulatory test, the Network and Distributed Resources Code change process also overhauled dispute resolution processes. The dispute resolution process developed consists of appeal firstly to a Dispute Resolution Panel (on any matter except whether the investment passes the regulatory test) and then to the Commission (on whether the investment passes the regulatory test) although this latter step only applies for non-reliability augmentations. There is a truncated consultation process for small network assets and interested parties, which does not involve these appeal mechanisms.

The Network and Distributed Resources Code changes also brought important changes in terms of the relationship between the regulatory test and TNSP expenditure. The Code no longer expressly requires the Commission to include an asset in the determination of a revenue cap, even if the project satisfied the regulatory test at the time the test was applied was applied to the project. As such there is now no formal link between these regulatory test outcomes and the TNSP's capex allowance.

[3] While this may be the case, the distinction between inter-and intra-regional projects remains as TNSPs have statutory obligations which only apply intra-regionally. This issue is explored in more detail in Section 5.2 of this Supplementary Discussion Paper.

3. The existing capital expenditure framework

3.1 Introduction

The Commission is reviewing the operation of this transmission investment framework as part of its process to finalise the regulatory principles. This section will discuss issues surrounding this framework. This section will first discuss whether the current approach to the treatment of capital expenditure and the proposed methodology for asset valuation are consistent. Following this, issues associated with the operation of the regulatory test will be outlined. Finally, the potential intrusiveness of the current approach will be discussed.

3.2 Investment incentives

In the Regulatory Principles Discussion Paper, the Commission noted that an approach to asset valuation that relied on periodic revaluation of assets created a high level of uncertainty for TNSPs. The ability of the regulator to optimise assets meant that the TNSP might not be compensated for all of its capital expenditure. Therefore, in the Discussion Paper, in order to provide certainty for the TNSPs, the Commission proposed an approach to asset valuation where the jurisdictional asset base would be locked in.

The Discussion Paper did not, however, explicitly address the process for reviewing capital expenditure. Under the current regulatory framework, a capex allowance is one of the fundamental "building blocks" used to determine the revenue cap at the commencement of the regulatory period. At the end of the regulatory period, there is an ex-post assessment of actual capital investment against the regulatory test.

The Commission's current processes of assessing the revenue requirements of TransGrid and EnergyAustralia have highlighted problems with an ex-post framework. Notably, in circumstances where actual capital investment exceeds the capital expenditure allowance an ex-post framework increases the potential for optimisation. These optimisation powers are inconsistent with an aim of creating greater certainty. As noted above, improving certainty has been an important driver on the Commission's thinking on other regulatory issues, such as asset valuation.

While an objective of the regulatory framework is to provide greater certainty for investors, it is important that this is combined with appropriate "checks and balances." The current framework attempts to address this goal through the regulatory test. Therefore, if the project passes the regulatory test, the TNSP has a high degree of confidence that the project will not be optimised.

However, the TransGrid and EnergyAustralia processes highlight that this is less than straight forward. The discussion of the regulatory test issues below demonstrates some potential problems with the regulatory test. Therefore, the Commission believes that there may be a need to move to an ex-ante assessment rather than an ex-post

assessment of new investment if an environment of greater regulatory certainty is to be achieved.

3.3 Concerns with the operation of the regulatory test

This discussion above suggests that the regulatory test plays a key role within this capex framework. The process of applying the regulatory test and regulatory test outcomes are designed to give certainty to the TNSPs that their capex programs will not be subject to ex-post optimisation.

However, to generate this certainty it would appear that the regulatory test and its application must be unambiguous, transparent and objective. It is debatable whether this is the case. The sensitivity of regulatory test modelling to input assumptions involves a high degree of judgement, as does the classification of projects as reliability or non-reliability augmentations. This sensitivity of regulatory test modelling to input assumptions means that it is difficult to envisage the regulatory test providing unequivocal results. Therefore, it is unlikely to provide "black and white" certainty for investors.

Further, the regulatory framework relies on interested parties effectively evaluating a TNSP's application of the regulatory test. It is questionable whether interested parties have the skills, expertise or resources to make a sufficiently informed assessment of whether a TNSP has applied the test thoroughly and impartially. To accurately assess a TNSP's application of the regulatory test, an interested party would need to undertake detailed costings of various alternative projects. This is a highly specialised task which requires a significant commitment of resources. As such, many applications of the regulatory test do not undergo critical assessment by interested parties. This means that there is some uncertainty as to how the regulator will assess these applications of the regulatory test at the end of the regulatory period.

3.4 Intrusiveness of current approach

As noted above, the Commission has the ability to optimise inefficient investments from the TNSP's asset base. The Draft Regulatory Principles provides that "prudent expenditures that were required and took place, but were not previously forecast, will be rolled into the regulatory asset base"[7] and that the Commission's ability to optimise inefficient investment would "provide the market discipline to write-down an inappropriate investment".[8] The optimisation authority is also established in the Code. Therefore, if the costs of projects were higher than forecast, then the Commission would undertake a project-specific assessment of the prudency of those projects. It merits noting that the Draft Regulatory Principles explicitly recognised that forecast capital expenditure was likely to differ from actual capital expenditure[9] and thus envisaged that project-specific efficiency assessments would be necessary.

This has definite implications for the shape of the regulatory regime to be adopted. The Commission's task in determining which projects are efficient is not a

[7] Draft Regulatory Principles, page 64.
[8] Draft Regulatory Principles, page 43.
[9] Draft Regulatory Principles, page 95.

straightforward task. It requires detailed analysis and potentially involves a time and resource intensive analysis of the costs and benefits of each project. In the context of the current TransGrid and EnergyAustralia revenue resets, the Commission is having to assess the adequacy of the regulatory test processes undertaken by TransGrid and EnergyAustralia across a range of projects. The Commission is discovering that this is potentially an extremely intrusive form of regulation.

Such a project-specific approach has been criticised because of the degree of intervention it implies in the day-to-day decisions of TNSPs. It requires the regulator to be closely involved in determining the appropriateness of key business investment decisions. This degree of regulatory intervention in the operation of commercial enterprise is seen by some as intrusive and interventionist on the part of the regulator and inappropriate in the context of a light-handed regulatory regime. Such a degree of intervention may also potentially impinge on the ability of TNSPs to meet their statutory obligations.

In fact, it would appear that an approach that relies on an ex-post assessment of a TNSP's individual projects is moving away from an incentive-based regime. The level of detail that the regulator is required to go into to assess whether a TNSP has applied the regulatory test correctly essentially involves micro-management of the TNSP's decision-making processes. This shares much in common with a rate of return regulatory approach.

4. Options for the reform of transmission investment regulation

4.1 Introduction

This section considers options for the reform of transmission investment regulation. Given the issues associated with a regulatory approach based on project-specific assessments, the Commission believes that it may be appropriate to move towards a model based on a firm ex-ante cap on investment. This analysis leads to a discussion of the preferred approach and issues associated with its implementation.

4.2 The ex-ante cap regulatory approach

The Commission believes that it may be appropriate to move away from an approach based on project-specific regulation to an approach based on a firm ex-ante cap on the total investment for the forecast period.

The ex-ante approach would involve the TNSP proposing a five-year capex allowance, which would be assessed by the Commission. The Commission would establish a firm cap at the start of each regulatory control period. This would be expressed as a profile of spending for each year of the control period, rather than as a specified list of investments and their expected costs. TNSPs would be free to decide which projects to build and when to build them with the knowledge that as long as the aggregate cost of those projects is less than the cap, then they are authorised to recover the cost of these investments through regulated charges. However, if a TNSP invests more than the cap, this additional investment will not be included in its regulated asset base.

This investment cap would be established on the basis that it represents the level of spending necessary to ensure that a prudent TNSP is able to meet its statutory and Code obligations, taking account of the likely changes in the factors driving the need for and cost of investment. The profile of capped spending will be included in the determination of revenues for the regulatory control period.

The potential benefits of this approach are that, depending on how it is applied, a firm ex-ante cap can help address the issues of regulatory intrusiveness and uncertainty for investors, which were discussed in the previous section.

Concerning regulatory intrusiveness, once the firm ex-ante cap is set, the TNSP would not be subject to any project by project assessment by the regulator. The cap would not outline which projects must be developed and the regulator would not intervene to define how the TNSP should allocate its funds between competing projects. This approach is likely to be a more "light handed" approach to the regulation of capex than a project-specific assessment.

Concerning regulatory uncertainty, there would be no ex-post optimisation of the TNSP's investments under the cap. Provided that the cost of its projects is less than

the cap, there is no risk that the regulator will attempt to assess the prudency of the TNSP's investments at the end of the regulatory period.

Issues for consideration

Interested parties are invited to comment on the merit of the Commission setting a firm capex allowance on an ex-ante basis.

4.3 Implementation Issues

A first issue associated with a shift to an ex-ante approach concerns the basis on which the cap is set. There are a diversity of approaches with varying degrees of rigour that could be used to assess allowed investment limits with an ex-ante cap regime. One approach would be to undertake a very detailed review of firm-specific conditions to attempt to assess the prudent level of future investment. In establishing the price cap on regulated network businesses in Britain, Ofgem conducts a detailed assessment of the firm's investment needs and then determines what it deems to be the efficient level of capital expenditure for the future control period. This is likely to be a comparatively resource-intensive approach.

Another approach would be to rely less on firm-specific analysis, and more on other information, such as historic expenditure levels, benchmarks or other comparative assessments or economy-wide efficiency measures. This approach can be expected to be comparatively less resource intensive (although this is not necessarily the case). For example, in establishing the price caps for regulated electricity network companies in Holland, Dte, the Netherlands electricity regulator uses econometric methods to determine price changes required to bring firms closer to what it deems to be the frontier level of efficiency.

The Commission believes that the capex review process conducted as part of the current "building blocks" approach is a workable basis on which to set an ex-ante cap. However, it would appear that greater rigour would be required in the establishment of a firm cap than currently applies in the determination of the forecast capex allowance, since it would not be subject to ex-post optimisation.

Issues for consideration

Interested parties are invited to comment on the basis on which a firm ex-ante cap should be set.

Assuming that the capex target is set accurately, a second issue concerns the incentive properties of an ex-ante cap. In circumstances where they will retain a share of capex underspend, the TNSP has the incentive to invest less than that provided for in the cap. While the TNSP should be rewarded if this is achieved through improved

efficiency, it would be a significant concern if the underspend jeopardised reliability of the network.

A recent Ofgem consultation document highlighted the difficulties inherent in a regime that rewards underspend in an environment where there is a lack of incentives to promote service quality:

> *"Companies also have an incentive to underspend the projected level of capex that is estimated by the regulator as they retain a significant share of the underspend, although this may be offset by financial incentives (and other obligations) on the delivery of outputs. These obligations and outputs include ... specific incentives ... such as quality of supply. In the absence of output incentives and other obligations, the incentive on a company is therefore not to invest as they earn a greater return from the price control from taking this decision."*[10]

In the NEM at present, the TNSPs have to meet statutory reliability requirements. Therefore a critical issue is whether these reliability requirements and others that may be subsequently developed provide sufficient safeguards to ensure that any capex spending reductions are not achieved at the expense of service quality.

If capex underspend is achieved while reliability levels are maintained, the issue then becomes one of what benefit sharing mechanisms should be put in place. There are a variety of potential measures that could be adopted. At one end of the spectrum, an incentive scheme could be put in place whereby if the TNSP invests less than that provided for under the cap, it retains any underspend during the period. However its actual level of investment would be rolled into the regulatory asset base. This would generally create strong incentives to minimise capex spending.

At the other end of the spectrum, a scheme could be put in place whereby if the TNSP invests less than that provided for in the cap, it does not retain any of the underspend. Such a scheme does not create any incentives for the TNSP to minimise capex spending. In fact, TNSPs would have the incentive to spend up to the level of the cap.

There are a variety of incentive schemes that could be developed which fall between these two extremes. The Commission seeks the views of interested parties on the incentive scheme that they believe is appropriate.

Issues for consideration

Interested parties are invited to comment on whether statutory reliability requirements provide sufficient safeguards against an inefficient capex underspend.

Interested parties are invited to comment if there are any other mechanisms that provide safeguards against an inefficient capex underspend.

[10] Ofgem (2003), *Developing network monopoly price controls: Initial conclusions*, June 2003, p 33.

If they do not believe that the statutory reliability requirements or other mechanisms provide these safeguards, interested parties are invited to comment on how these service quality incentives could be set.

Interested parties are invited to comment on the benefit sharing mechanisms that could be put in place to deal with capex underspend.

5. Operation of an exclusions regime

5.1 Introduction

This section will explore in further detail the implementation of a firm ex-ante cap, by discussing whether it is appropriate to apply the ex-ante cap to all TNSP investment.

One drawback of a pure ex-ante approach is that while some capex is predictable, such as replacement capex, other investment is lumpy and cannot be accurately predicted. Therefore, a more appropriate ex-ante cap could be established by excluding certain projects from the ex-ante cap. In such circumstances, all projects excluded from the cap would need to be subjected to project-specific assessment.

While this has some intuitive appeal, as the number of excluded projects increases, so too does the need for project-specific assessment. In addition, for each exclusion, it is necessary to develop administrative arrangements to ensure that the cost of the excluded project (and any consequential investment) is not included in the ex-ante cap. Deciding whether or not to exclude specific projects from the ex-ante cap therefore appears to be a trade-off between the benefit of a potentially more accurate ex-ante cap, and detriment of additional administrative controls and increased project-specific assessment.

There are a number of possible ways to distinguish investments that could be included in the ex-ante cap, from investments that could be subjected to project-specific approval. Specifically, should:

- intra-regional investments be included in the cap, but inter-regional investments be subjected to project-specific approval;
- small network projects be included in the cap, but large network projects be subjected to project-specific approval;
- investment to replace aged assets (i.e non-augmentation investment) be included in the cap, but augmentation investment be subjected to project-specific approval;

[12] Inter-regional investment is not necessarily just the physical infrastructure that crosses the boundaries between TNSPs, but can also be augmentations of the network within the boundaries of a NEM region that has the effect of increasing the transfer capacities between regions. Such intra-regional investment may be justified partly on the grounds of the increased inter-regional transfer capacity that it provides, but partly also on the basis of the benefits - such as improved reliability and increased intra-regional transfer capacity - that it provides to transmission users within the region. The Commission believes that there appears to be no simple answer to this issue and notes that the IRPC is currently tasked with distinguishing between intra-regional and inter-regional investment. Rather than developing rigid rules to determine the inevitably arbitrary classification of investment as intra-regional or inter-regional, the Commission believes it appropriate to deal with this problem on a case-by-case basis subject to the over-riding principle that the classification of investment that meets intra-regional needs and also augments inter-regional capacity, should be based on its main purpose. This definitional issue merits further detailed consideration and we propose to do this in light of comments on this Supplementary Discussion Paper.

- investment planned to meet statutory reliability requirements be included in the cap, but non-reliability investment be subjected to project-specific regulation; and

- highly certain future projects be included in the cap, but less certain investments be subjected to project-specific regulation.

Each of these is explored in more detail in the remainder of this section.

5.2 Excluding inter-regional investment from the ex-ante cap

The Commission favours a project-specific approach to the regulation of inter-regional investment, with a cap on intra-regional investment[12]. The reason for this is relatively straight forward. The transmission networks that cover the NEM are planned by four independent TNSPs. Their statutory obligations extend to the provision of reliable transmission services within their own area only. The determination of the ex-ante cap in respect of intra-regional investment is therefore directly related to the level of investment needed to ensure that a TNSP is able to meet these statutory obligations efficiently. The incentive on TNSPs established by the cap on intra-regional investments, is therefore to meet their statutory obligations at least cost.

However, TNSPs have no obligation to develop interconnectors to neighbouring regions, or to make intra-regional investments whose main purpose would be to increase inter-regional power flows. Rather, such inter-regional investments are likely to arise as a result of negotiated agreements between neighbouring jurisdictions and their respective TNSPs on the benefits that would arise from such investment, and on the allocation of investment costs between TNSPs. It would be theoretically possible to set an ex-ante cap on proposed inter-regional investments, but without statutory obligations to relate the proposed investments to, it is difficult to see how TNSPs would justify (and the Commission assess) such investments ex-ante.

Finally, interconnector projects are intrinsically less predictable than intra-regional investments. They are driven by NEM-wide cost-benefit assessments and, as discussed, involve multi-region political (and in some cases commercial) agreements. For all of these reasons it would seem that a project-specific regulatory approach is likely to be more appropriate for inter-regional projects.

Issues for consideration

Interested parties are invited to comment on whether inter-regional investment should be excluded from the firm ex-ante cap.

5.3 Excluding large projects from the ex-ante cap

It could be argued that large capital projects should be subject to detailed, project-specific regulatory review. Depending on the small/large cut-off, it will be possible to limit the number of projects for detailed review by the ACCC, and hence ameliorate some of the unattractive consequences that would arise if a project-specific approach was applied to the full intra-regional investment program. This approach may necessitate a change in the current Code threshold of a large and small network asset.

On the other hand, as argued earlier, there is reason to prefer an ex-ante cap to a project-specific approach. For this reason the Commission does not see merit in a "blanket" exclusion of large projects from the ex-ante cap. However, there may be an argument that large investments that are also highly uncertain could introduce significant errors into the ex-ante cap. This is discussed later below.

A further problem with a small/large projects approach is that it may create incentives for gaming. For example, if the TNSP receives a firm cap for its smaller projects, it is incentivised to aggregate a number of smaller projects into a larger project in order to potentially receive additional revenue. This would also have the effect of increasing the number of project-specific assessments that the Commission would be required to undertake.

Issues for consideration

Interested parties are invited to comment on whether large network investments should be excluded from the firm ex-ante cap.

If they believe this to be appropriate, interested parties are invited to comment on the suitable threshold for delineating large and small projects.

5.4 Excluding augmentation investment from the ex-ante cap

It could be argued that the ex-ante capex target should be based on expected *replacement* investment (i.e. investment to replace aged or defective assets) only, since this is more predictable than *augmentation* investment. Replacement capex is likely to be the smaller part of the total investment budget. Therefore an ex-ante cap based on replacement capex is likely to cover a relatively small proportion of total capex only. The main argument for this approach hinges on the possibly greater uncertainty of augmentation investment relative to replacement investment, which may not always be the case.

Issues for consideration

Interested parties are invited to comment on whether augmentation investment should be excluded from the firm ex-ante cap.

5.5 Excluding "non-reliability" investment from the ex-ante cap

It could be argued that "reliability" investments should be included in the ex-ante cap, but that "non-reliability" investments should be subject to project-specific assessment. Intuitively, this option appears appealing as the Code currently distinguishes between reliability and non-reliability augmentation. Further, "reliability" investments are covered by jurisdictional reliability requirements, while other augmentations are not. Therefore, if non-reliability augmentations form part of an ex-ante cap, it could be argued that as there is no link between this investment and the requirement to maintain service standards, it may be in the interest of the TNSP to cut back on this non-reliability investment.

However, in practice the distinction between "reliability" investment and other augmentation investment has proven to be problematic. In 2002 the IRPC was tasked with developing a consistent definition of reliability investment in the NEM, and has not been able to bring this matter to a resolution to-date.

To date all TNSPs, other than VENCorp, have only ever applied the "reliability" arm of the Regulatory Test to intra-regional investments. This suggests that establishing the ex-ante cap on the basis of expected "reliability" augmentations only, will mean that the ex-ante cap effectively covers all (or at least most) intra-regional investment.

But this does not explain why "reliability" and "non-reliability" augmentations should be distinguished. As is set out in the following section, under the ex-ante cap regime considered in this paper the outcome of the regulatory test to intra-regional augmentations (whether "reliability" or "non-reliability" augmentations) has no bearing on the amount of the augmentation to be rolled-in to the regulatory asset base. On the other hand, it could be argued that "non-reliability" projects are more uncertain than "reliability" projects. As is considered later, high levels of uncertainty may justify the exclusion of certain projects from the ex-ante cap.

Issues for consideration

Interested parties are invited to comment on whether non-reliability investment should be excluded from the firm ex-ante cap.

5.6 Excluding uncertain investments from the ex-ante cap

This is likely to be a substantive issue in considering the establishment of a firm ex-ante cap. Consider for example the circumstance in which a single large project could make up a large proportion of a TNSP's expected investment, but that there is only a 50% probability that that project would proceed. In this case, if an amount was provided in the ex-ante cap based on the probability-weighted cost (i.e. 50% probability multiplied by the expected project cost), then if the project did not proceed, TNSPs would effectively be over-compensated through revenue allowed under the ex-ante cap. But on the other hand if the project did proceed, TNSPs would be under-compensated – since the probability-weighted allowance would only cover half the expected cost.

This analysis suggests that all uncertain projects (i.e. probability of proceeding below a high cut-off level) could be excluded from the ex-ante cap and be made subject to project-specific assessment. However, this is not a straight-forward issue. For example, any "under-compensation" due to projects that do proceed (but that were not fully provided-for in setting the cap) may be off-set by "over-compensation" for individual projects that don't proceed (but for which part of the cost at least was included in setting the ex-ante cap).

Further, arrangements to exclude specific projects from the ex-ante cap can become extremely complex. It is likely to be necessary to define the project that is excluded in detail so that the ex-ante cap properly reflects the remaining investment. But some large projects may involve investments in various parts of the network and in a wide range of equipment (lines, transformers, switch-gear etc.). Some of the investment that makes up the project may need to proceed anyway, even if the rest of the project does not proceed.[13]

Another problem is that the decision to proceed with many transmission projects is dependent on whether other projects proceed. For example, proceeding with a specific project now, may defer or advance the need to invest in other projects. So even if a defined uncertain large project is excluded from the ex-ante cap, whether or not that project is actually developed can affect other investments that are included in the cap.

Therefore, deciding how to treat uncertain large projects in establishing an ex-ante cap is a complex issue. While there are good reasons to exclude such projects from the ex-ante cap, this creates its own problems. We propose to give this issue further detailed consideration in the light of comments from interested parties to this discussion paper.

[13] For example, a failing substation may need to be replaced even if the main project (for which that substation is part) does not proceed. This raises the problem of judging whether the cost of replacing that substation be included in the ex-ante cap or whether it should be excluded from the cap, along with the rest of the project.

Issues for consideration

Interested parties are invited to comment on whether uncertain investment should be excluded from the firm ex-ante cap.

5.7 Project-specific regulation of investment excluded from the ex-ante cap

Projects that are excluded from the ex-ante cap will be subject to project-specific assessments. The Commission envisages that the following regulatory arrangements would apply for such projects:

- The proponent/s of the project would be expected to conduct the regulatory test for each project, as they do now.

- The proponent/s would be expected to actively liaise with the Commission in the development of the application of the test, and the Commission will issue a determination on whether the project passes the test, *before* investment funds are committed. Suitable procedures and protocols will need to be developed to ensure the smooth working of this arrangement so that the Commission is able to deliver an opinion on the application of the test, shortly after the proponent has completed the test.

- Having completed the regulatory test, the issue is then to determine what amount should be included in the regulated asset base for that project. This issue arises because there may be a variation between the actual design and cost of a project, and the design and cost specified in the regulatory test.

It should be noted that there are potentially significant differences between this application of the Regulatory Test and the current arrangements for the application of the Regulatory Test to augmentations. Firstly, under this potential arrangement the Commission would assess the proponent's application of the Regulatory Test *before* (significant) funds are committed by the TNSP. At present the Commission is not required to comment on the application of the regulatory test, unless the application of the test has been appealed by an interested party. But, through the determination of TNSP revenue controls, the Commission is currently able to "optimise" assets after they have been built.

Second, the development of project-specific incentives would potentially relate the actual cost of a project to the amount of that cost that TNSPs will be allowed to include in their regulated asset bases. At present there is no formal link between the outcome of the regulatory test and the determination of the regulated asset base by the Commission.

Issues for consideration

Interested parties are invited to comment on whether the Commission should assess whether the project passes the regulatory test *before* invested funds are committed.

5.8 Arrangements applicable to separate networks planners and owners

The Commission regulates the revenue of two TNSPs in Victoria. SPI PowerNet is a privately owned company that owns, operates and maintains most of the transmission network. VENCorp is a statutory authority with sole responsibility for planning and directing the augmentation of the shared transmission network. VENCorp does not own any transmission assets itself. Instead, it procures electricity transmission services in relation to augmentation works from SPI PowerNet under long-term Network Agreements. The costs of those augmentation works are then passed onto transmission users via a mechanism that allows it to alter its TUoS charges to deal with fluctuating costs.

SPI PowerNet's regulated revenue is determined by the Commission. However, capex included in SPI PowerNet's control covers investment needed to maintain and replace existing assets only, and does not include provision for augmentations to the network which is covered by the long-term Network Agreement with VENCorp.

The Commission does not envisage any change to the arrangements for the regulation of investment planned by VENCorp in the event that an ex-ante cap is introduced. The main reasons for this are that, unlike other TNSPs, VENCorp is a planning authority only - it has no obligation to develop the projects it plans and does not own those projects. In addition, while it is accountable for ensuring that the most efficient projects are planned and developed, it is not financially accountable if the cost of the project that is developed exceeds the cost of the projects that it planned. Establishing an ex-ante cap on VENCorp would therefore not be appropriate as it exposes them to risks which they are not accountable for.

In the case of SPI Powernet, the Commission proposes to set an ex-ante cap on its maintenance and replacement expenditures. For augmentation investments, there will be no cap on either SPI PowerNet or VENCorp.

6. Off Ramps

6.1 Introduction

The previous section considered the options for distinguishing which projects should be included in an ex-ante cap. This section considers whether it is appropriate to "re-open" the overall investment cap, and discusses the circumstances under which this potentially should happen.

6.2 Are "off-ramps" appropriate?

The Commission believes that the specification of "off-ramps", which would re-open the investment cap, potentially has an important part to play in a broader ex-ante framework. These "off-ramps" would establish conditions under which the investment cap will be "re-opened" during or after the regulatory control period. The Commission believes that the principle of "off-ramps" is that they should protect the TNSP from losses attributable to factors that have caused changes in the necessary (efficient) level of investment, that could not have been foreseen at the time that the cap was established, and over-which the TNSP has little or no control. Further, the Commission believes that it would need to be demonstrated that these events have a material impact on the need for transmission investment. The Commission also considers that the range of "off-ramps" should necessarily be limited and clearly defined. In view of the importance that they are likely to play as a protection against unforeseen events, the Commission seeks the views of interested parties on whether "off-ramps" are appropriate.

Issues for consideration

Interested parties are invited to comment on whether "off-ramps", which establish conditions for re-opening the investment cap, should form part of an ex-ante framework.

6.3 Triggers for off-ramps

If it is accepted that in some circumstances it may be appropriate to re-open the investment cap, the question becomes one of what the trigger for the review should be.

An initial threshold issue is whether the "off-ramps" provision should be utilised in circumstances where a portion of the initial investment cap has not been spent. It could be argued that as the TNSP has not allocated its full capex allowance, the unexpected investment should be funded through the unspent portion of the cap in the first instance. However, it could also be argued that if the TNSP is achieving efficiency gains, it should not be penalised for investment necessitated by factors beyond its control. The Commission seeks the views of interested parties on this issue.

A further issue concerns the events which could trigger the "off-ramps" provision. The Commission believes that typical "off-ramps" may include force majeure events and other specific, identifiable events. These events may include unexpected load growth or unexpected generation. The Commission believes that it would be preferable if the principles of the "off-ramp" could be agreed to ex-ante. The Commission seeks the views of interested parties on whether it is possible to specify the events that would trigger the "off-ramps" provision up front and what these events should be.

Issues for consideration

Interested parties are invited to comment on whether the investment cap should be "re-opened" in circumstances where the initial investment cap has not been fully expended.

Interested parties are invited to comment on what events should be considered under any "off-ramp" provisions.

6.4 "Off-ramps" process

A final issue concerns the process by which the investment cap would be re-opened. Potentially the cap could be "re-opened" on application by the TNSP on a project by project basis. Alternatively, an annual or mid-term review of the TNSP's capex could be introduced, which could develop thresholds for re-opening the cap.

Issues for consideration

Interested parties are invited to comment on the process by which the investment cap could be re-opened.

7. Implications of the proposed investment framework arrangements for the regulatory test

7.1 Introduction

This section considers options for the reform of the regulatory test in view of the proposed investment framework set out in the previous sections. It begins by considering the Code obligations on TNSPs to apply the regulatory test and how the need for this may be affected by the adoption of an ex-ante cap regulatory approach. It then considers the role of the regulatory test in the assessment of projects which sit outside the firm ex-ante cap.

7.2 The role of the regulatory test for projects inside the firm ex-ante cap

The Code currently requires TNSPs to apply the regulatory test to all network augmentations, with different consultation processes for new large and new small network assets. In the case of new small network assets a TNSP will essentially consult on a proposed new small network asset through its Annual Planning Report. The process for the construction of a new large network asset is lengthier and more onerous. The applicant must publish a notice setting out a detailed description of the project. However, unlike small network assets where there is no opportunity for appeal, large network assets can be disputed to either the dispute resolution panel or to the Commission, providing that the augmentation is not a reliability augmentation.

In a framework where a firm cap is set and there are no ex-post reviews of the efficiency of individual projects, the role of the regulatory test is brought into question. The Commission understands that the NEM jurisdictions, as part of their MCE work program, are currently considering this issue and are looking to develop amendments to the Code. The Commission will work with the NEM jurisdictions to assist them determine the case for Code changes and evaluate the effectiveness of any proposals. In any discussions with the jurisdictions, the Commission will take into account all responses received to this paper.

In the absence of Code changes, the Commission believes that the regulatory test could be amended in such a way that it continues to play a valuable role. The regulatory test could be amended to become more a consultative tool for projects within the firm ex-ante cap. For example, it could still continue to provide the market with information on the need for the project, possible alternatives, line routes and their relative costs. However, it would no longer rank the various alternative projects.

This still leaves the role of the Code's dispute processes unresolved. Under a regulatory test which is largely a consultative document, the Commission would see the Code's dispute processes as adding an administrative and regulatory burden on TNSPs for no useful purpose. One solution may therefore be for the Commission to amend the distinction between new small and new large network augmentations[14].

[14] Chapter 10 of the Code expressly provides the Commission with the ability to amend the distinction of a new large network asset. In particular it states:

Significantly raising the threshold of projects such that they effectively become new small network augmentations would limit the use of the disputes process.

While these solutions have their weaknesses, the Commission believes that they could provide a workable solution in the context of the Code framework.

7.3 The role of the regulatory test for projects outside the firm ex-ante cap

As discussed in Section 6, the Commission envisages that the regulatory test will play a key role in the economic assessment of projects which are not covered by the ex-ante cap. The main difference under an ex-ante framework would be that TNSPs would actively engage the Commission during the application of the regulatory test and the Commission will thereby provide an opinion on whether the project satisfies the test, at the same time that the test is being run. The Commission will also consider whether project-specific delivery incentives should also be established and performance against this incentive will determine the amount of the cost of the project which will be included in the Regulatory Asset Base. This active involvement is similar in many respects to the approach adopted by the Commission in its assessment of the Murraylink Transmission Company conversion application.

There are two issues that will need to be addressed to allow this to happen. The first is the Commission's ability to re-open a revenue cap during a regulatory period. Clause 6.2.4(d) of the Code sets out the circumstances under which the Commission may re-open a revenue cap.[15] As the Code stands at the moment, it would be unable to open a revenue cap to include projects which have been excluded, or those that may be considered necessary under the off-ramp provisions. As before, the Commission will need to work with the NEM jurisdictions to address this issue. Again, without Code changes the Commission may be able to deal with the under recovery of revenue at the regulatory reset by providing an opinion on the legitimacy of the claims during the regulatory period.

An asset of a *Transmission Network Service Provider* which is an *augmentation* and in relation to which the *Network Service Provider* has estimated it will be required to invest a total capitalised expenditure in excess of $10 million, unless the *ACCC publishes* a requirement that a *new large network asset* will be distinguished from a *new small network asset* if it involves investment of a total capitalised expenditure in excess of another amount, or satisfaction of another criterion. Where such a specification has been made, an asset must require total capitalised expenditure in excess of that amount or satisfaction of those other criteria to be a *new large network asset*.

[15] Notwithstanding clause 6.2.4(b), the *ACCC* may revoke a *revenue cap* during a *regulatory control period* only where it appears to the *ACCC* that:

(1) the *revenue cap* was set on the basis of false or materially misleading information provided to the *ACCC*;

(2) there was a material error in the setting of the *revenue cap* and the prior written consent of parties affected by any proposed subsequent re-opening of the *revenue cap* has been obtained by the *ACCC*; or

(3) there is a substantial change in ownership of network assets within the business of the Transmission Network Owner and/or Transmission Network Service Provider (as appropriate) which, in the opinion of the ACCC, may lead to a material change in the revenue requirement of the Transmission Network Owner and/or Transmission Network Service Provider (as appropriate) following that change in ownership.

The second issue that the Commission would need to address is that the Code currently restricts the Commission's role in regulatory test assessments to the resolution of disputes. If the Commission is to work actively with proponents in the assessment of the application of the regulatory test, this would appear to fetter the discretion of the Commission to subsequently hear any appeals.

There are a number of possible solutions. One approach would be for the Commission to refrain from making any specific assessments until after the deadline for appeals has expired (and assuming no appeal is made before the deadline). A second approach would be to raise the threshold between new small and new large network augmentations, so that effectively all augmentations would be classified as small augmentations. This solution would eliminate the appeals process.

Again, the Commission will need to liaise with the NEM jurisdictions to determine the feasibility of Code changes.

8. Commission's process

The Commission is calling for submissions from interested parties on the issues raised above and any other issues that interested parties believe that the Commission should consider in its review.

Submissions can be sent electronically to: electricity.group@accc.gov.au.
Alternatively, written submissions can be sent to:

Mr Sebastian Roberts
General Manager
Regulatory Affairs – Electricity
Australian Competition and Consumer Commission
GPO Box 520J
MELBOURNE VIC 3001

The closing date for submissions is Friday 23 April 2004.

The issues raised in this Supplementary Discussion Paper will be discussed at the *Review of the Draft Statement of Principles for the Regulation of Transmission Revenues* public forum, which will be held on 2 April 2004.

The Commission will consider the comments at the public forum and submissions received in response to this discussion paper in considering whether reform to the capital expenditure regulatory framework is appropriate. It is anticipated that these issues will form part of the capital expenditure section of the Draft Regulatory Principles, which should be released mid-year.