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About SP AusNet

SP AusNet is a major energy network business that owns and operates key regulated electricity transmission and electricity and gas distribution assets located in Victoria, Australia. These assets include:

- A 6,574 kilometre electricity transmission network indirectly servicing all electricity consumers across Victoria;
- An electricity distribution network delivering electricity to approximately 575,000 customer connection points in an area of more than 80,000 square kilometres of eastern Victoria; and
- A gas distribution network delivering gas to approximately 504,000 customer supply points in an area of more than 60,000 square kilometres in central and western Victoria.

SP AusNet's vision and mission is to make important things in life happen today and tomorrow. The SP AusNet company values are:

- Safety: to work together safely. Protect and respect our community and our people.
- Passion: to bring energy and excitement to what we do. Be innovative by continually applying creative solutions to problems.
- Teamwork: to support, respect and trust each other. Continually learn and share ideas and knowledge.
- Integrity: to act with honesty and to practise the highest ethical standards.
- Excellence: to take pride and ownership in what we do. Deliver results and continually strive for the highest quality.

For more information visit: <u>www.sp-ausnet.com.au</u>

Contact

This document is the responsibility of the Regulation and Network Strategy Division, SP AusNet. Please contact the officer below with any inquiries.

Tom Hallam Manager Economic Regulation SP AusNet Level 31, 2 Southbank Boulevard Melbourne Victoria 3006 Ph: (03) 9695 6617



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1 Introduction

SP AusNet provides the following submission to the AER's Consultation Paper entitled 'Issues and AER Preliminary positions – Connections charge guidelines: for accessing the electricity distribution network – 10th June, 2011'.

The broad contention of this submission is that the Consultation Paper, in adopting an approach broadly similar to Guideline 14 in Victoria, is not consistent with the National Electricity Objective (NEO) or the National Electricity Rules (Rules).

This submission:

- Provides some background to this review;
- Provides comments on the detailed aspects of the cost-revenue test, and the objectives that it considers should form the basis of a Customer Connection price regime should be;
- Provides comment on key areas of concern with the Preliminary Position;
- Outlines alternative positions; and
- Provides some high level comments on a number of secondary issues stemming from the AER's Position Paper.

SP AusNet has also provided a consolidated list of responses to detailed questions asked of respondents to the Consultation Paper in an Appendix to this Submission.

1.1 Background

The Ministerial Council on Energy (MCE) has endorsed the introduction of a new Chapter 5A — Electricity Connection for Retail Customers— to the Rules. Under Chapter 5A, the AER will be required to develop and publish connection charge guidelines to codify how Electricity Distribution Network Service Providers (DNSPs) should charge new electricity customers for connecting to their networks.

DNSPs will be required to develop their connection policies for approval by the AER based on the guideline. The connection policies must set out the circumstances in which connection charges are payable and the basis for determining the amount of these charges.

The Consultation Paper states that:

"The principles of how DNSPs may charge for connection services and the matters that the AER must have regard to in developing the connection charge guidelines are set out in chapter 5A. The key principles include (1) DNSPs may charge reasonable capital contribution towards the cost of the extending the networks to provide the connection services; and (2) for customers with capacity higher than a threshold set by the AER, DNSPs may also charge for specific augmentation cost towards the cost for increasing the capacity of the existing network (upstream cost) because of new customer demand."

It is noted that customer's with a peak demand less than 100 Amperes 3-phase low voltage supply should not pay for the specific shared network augmentation charges. The argues this is because:



"The cost of shared network augmentation for general demand growth is already shared amongst all customers, new and existing. The shared network augmentation cost of customers below the threshold will be treated in a similar manner."

Further, the new Chapter 5A explicitly notes that:

"In general, the intention is to exclude deep system augmentation charges for retail customers ". $^{\rm 1}$

SP AusNet provides more detailed comment on all of these issues, but particularly this latter point, in the following sections of this submission.

1.2 The Consultation Paper

The Paper proposes a 'cost-revenue test', or what is more commonly referred to as an Incremental Revenue (IR) less Incremental Cost (IC) test. This means that if the cost to connect a new customer exceeds the distribution network tariff revenue collected over the evaluation period, the customer should pay for the shortfall. Conversely, if incremental revenue is greater than incremental cost, the customer pays no customer contribution – although the AER also specifically notes that the distribution business is not liable for the payment of any monies to the connecting customer in this circumstance.

The charging formula is as follows:

CC = ICCS + ICSN - IR(n=X)

Where:

CC = Capital Contribution

ICCS = Customer specific incremental costs incurred by the DNSP

ICSN = Incremental costs in the upstream (shared) network directly attributable to the new connection, where applicable

IR(n=X) = Present value of a X year revenue stream directly attributable to the new connection

The AER considers it appropriate that an additional constraint that $CC \ge 0$ be placed on this formula.

The proposed approach is broadly similar to the currently approach adopted in Guideline 14.

Other key aspects of the initial proposed approach are that:

• "two types" of connecting customers are defined, with one treated differently from the other. More specifically, they have defined "retail customer" versus a "real estate" developer. The former is subject to the application of a threshold test, so that if their demand/energy is assessed as being below the threshold, then the distribution business must not include a shared network component in the connection charge. Conversely, no such requirement is placed on the derivation of a "real estate" developer's connection charge, except to the extent that it complies with the formula outlined above (i.e., that "Incremental costs in the upstream (shared) network directly attributable to the new connection, where applicable");

¹ Rules, Chapter 5A - Section 5A.E.1(B).



- A Pioneer scheme is proposed to apply where "a connection asset ceases, within 7 years after its construction or installation, to be dedicated to the exclusive use of the retail customer occupying particular premises";
- It appears to prohibit the inclusion of augmentation costs that are otherwise included in the DNSP's pricing submission: "a capital contribution may only be required in the circumstances described in subparagraphs (1) to (5) if provision for the costs has not already been made through existing distribution use of system charges or a tariff applicable to the connection"; and
- When an asset can be provided by a third party (i.e., when developers obtain on site LV works from third parties, and then donate those assets to the DNSP), that cost should also be excluded from the cost-revenue test calculation.



2 The Cost Revenue Test

This section discusses what the proposed cost-revenue test actually does and what should it be doing. This helps to understand the implications associated with its adoption, relative to other possible alternative pricing models.

2.1 What is the proposed revenue-cost test actually doing?

The proposed cost-revenue test is an NPV analysis that compares the incremental standing charge and variable charge revenue from an individual customer over a set evaluation period (30 years for residential; 15 years for business supply), against the total incremental costs associated with connecting that customer including:

- The upfront costs of connection;
- The on-going operating costs associated with serving that customer; and
- The 'bring-forward' costs of the shared network.

The impact, in all cases, is that a discount is given to a connecting customer on their upfront connection costs, in return for getting 'access' to their standing charge and variable charge revenue stream over the expected life (30 years for residential and 15 years for business supply customers) of that connection.

Therefore, where a customer's incremental revenue exceeds their incremental costs, they do not have to pay an additional customer contribution, and therefore, they receive a 100% discount on the connection costs – i.e., the customer gets their connection for free, in return for access to their standing and variable charge revenue over the life of the connection. However, if their incremental revenue doesn't exceed their incremental cost, then they have to make a further 'Customer Contribution'. Nonetheless, they will still be receiving some discount on their connection cost.

From an economic perspective, there are significant issues associated with the adoption of such a discounting practice. These issues are discussed in more detail in the next section of this submission.

2.2 What should be the objective underpinning a Customer Contribution?

There are a number of simple objectives that should be sought to be achieved from a Customer Contributions pricing framework. These are:

- Incentives to minimise connection costs: customers should have a financial incentive (via an efficient price signal) to minimise the overall cost of connecting to the DNSP's existing distribution network, having regard to the opportunity cost of seeking a connection at a different location and /or of a different capacity.
- Location based price signals: customers should have a financial incentive (via an efficient price signal) to connect in areas of the DNSP's network that have spare capacity.



- *Timing of development:* customers should have a financial incentive to connect insequence. Put another way, they should be financially penalised for connecting in areas that are demonstrably inconsistent with what is the logical (from an economic perspective) sequence of development.
- Skew incentives to engage third party providers: the method by which a customers connection charge is calculated should not inappropriately incentivise them to choose one particularly service provider (a third party) over another (the DNSP), just because of the impact that that decision has on their overall Customer Connection charge.
- Administrative costs / ease of understanding: customers should expect to be able to
 easily understand how their Customer Connection charge has been established, and it
 should not be subject to significant fluctuation based on small changes in individual
 parameters. Further, the administrative costs associated with any pricing framework
 should be minimised, having regard to the allocative efficiency benefits of sending more
 cost reflective price signals.

These objectives have been adopted in the next section of this submission to review the proposed Preliminary Position.



3 Main comments on the AER's Preliminary Position

There are four fundamental deficiencies with the Preliminary Position outlined in the Consultation Paper, namely:

- In many cases, it does not provide a connecting customer with a financial incentive (via an efficient price signal) to minimise their overall connection costs, having regard to the relative opportunity cost of adopting different location and connection sizing solutions;
- The economic grounds that are used to underpin the revenue-cost test are incorrect; and
- It is inconsistent with conventional economic appraisal techniques, a by-product of which is that it does not provide the customer with a financial incentive to connect 'in-sequence';
- The basis for excluding negotiated services will have a significant impact on the extent of competition in the industry and the amount of connection work having to be undertaken by DNSPs internally.

Therefore, the Preliminary Position is not compliant with the NEO or the Rules.

3.1 Inconsistency with promoting least cost provision of electricity services

SP AusNet considers that the proposed approach is inconsistent with the objective of promoting the least cost means of providing electricity services, which is effectively a requirement of the NEO.

This criticism is particularly relevant to those situations where a connecting customer's incremental revenue is greater than their incremental cost, therefore, leading to them paying a zero customer contribution.

In short, SP AusNet considers that when a customer is faced with zero Customer Connection charge (because their incremental revenue is greater than their incremental cost under the proposed methodology), they will have no financial incentive to make an efficient connection sizing or location decision. The following, simple scenario, is used to illustrate this issue.

In Figure 1 below, an industrial customer has the choice of locating its factory at one of two possible locations - (A) and (B). The land at Location A is more expensive, at \$300k, than location B, at \$250k, however the cost of extending the electricity network to service those parcels of land are different as well, with Location A being \$100k and Location B being \$500k. Assuming that everything else is equal (e.g., they have the same expected demand and energy throughput requirements, therefore they have the same impact on shared network and the distribution business is assumed to generate the same revenue from that connecting customer no matter where it is located), the most efficient outcome for the community is for the customer to locate at location A, despite having a higher cost of land. This is because the higher opportunity cost of providing land to that customer (\$300k versus \$250K) is more than offset by the lower cost of providing electricity services to that customer at that location (\$500K versus \$100k).





Figure 1: Issues that may stem from merging upfront and on-going charges

However, what would be the customer's locational decision when faced with a customer contribution that has been calculated using the Consultation Paper's proposed approach:

- If incremental revenue is greater than the incremental cost under both scenarios (locations), then there is in fact a perverse incentive for the customer to locate in the area that has the higher cost to serve, as the customer can internalise the lower land value, but is not faced with trading this lower land value off against the higher cost of providing electricity services (because their customer contribution is zero in both cases because incremental revenue is greater than incremental cost);
- If the incremental cost is greater than the incremental revenue when assessing the cost of connecting to location B (the one with the \$500k connection cost), but this difference (which is effectively the customer contribution that is calculated under the AER's proposed approach) is less than the difference between the land values of the two locations (\$50k), then again, inefficient locational signals are provided, as the customer would still have a financial incentive to choose the location with the cheaper land value because it can reap the financial benefit of the lower land value whilst only paying a small portion (less than the difference in the two land values) of the increased costs of providing electricity to that location; and
- If the incremental cost is greater than the incremental revenue, and this is greater than the difference in the cost of the two parcels of land, then the customer would choose to locate at Location A, and incur the higher land purchase costs and the lower customer contribution.

This is a very simple example, but it illustrates the fact that when incremental revenue is embedded within the Customer Contribution, and incremental revenue is greater than or close to



the incremental cost, connecting customers do not face the full cost to society of providing them with electricity services, which means that they do not internalise that cost, and weigh it up against the other incremental costs/benefits of choosing various different locations. It is also noted that the requirement to use the 'lowest cost technically acceptable' (LCTA) asset is irrelevant in this case, because this occurs after the location, timing and sizing decisions have been made by the customer.

Taking this even further, consider the incentive for the business to adopt upfront on-site measures to reduce its demand on the distribution network. In particular, let us revert back to the example outlined previously. Assume the customer connecting in Location B (\$500k of connection assets) has the choice of:

- Having \$500k of connection assets constructed and included in their customer contribution, based on an expected 500KVA load; or
- Having \$250k of extension assets constructed and included in their customer contribution, if they spend \$150k upfront on on-site energy efficiency options to reduce their expected demand to 300KVA.

If, even after the inclusion of the \$500k worth of connection assets in the customer contribution, incremental revenue is greater than the incremental cost of supply, there will be no incentive to adopt up-front measures (i.e., at the construction stage) to reduce their demand and therefore connection size, because any cost incurred by the business in doing this does not actually lead to a lower customer contribution (because they are not paying a contribution in the first place). Therefore, they are not incentivised to weigh up the incremental connection costs of certain sizing options versus the incremental costs of on-site changes to their production processes. Further, the DNSP is in no position to assess whether the connecting customer has done all that it could to reduce its load on the network, having regard to the relative costs of on-site works versus the cost of providing connections assets of a certain capacity. It is further noted that in this scenario, incentivising the customer to adopt on-site energy efficiency options once it has connected to the network is not the most efficient outcome, even if it is in response to a LRMC (cost reflective) based variable price. This is because the connection asset is, by that stage, sunk, and therefore, it was over-sized, relative to the efficient servicing solution (a mixture of on-site demand management, and a smaller connection asset).

Some stakeholders may consider the scenario of incremental revenue being greater than incremental cost to be an unlikely outcome. However, for SP AusNet at least, this is a regular occurrence, even prior to the inclusion of the price rises stemming from the 2011 EDPR. Furthermore, even if prices were to remain at constant levels beyond the first 5 years of the evaluation period (as is proposed in their Preliminary Position), a significant portion of customers – particularly business supply customers – would still face a zero Customer Contribution.

Finally, there is one further qualitative issue that may increase the likelihood of incremental revenue being greater than incremental costs in many cases in the future. This pertains to the fact that every recent network pricing Decision has led to significant price rises that have not just been driven by increases in augmentation costs and other cost that are a function of the amount of energy throughput, demand or the number of customers connected to their network. Rather, they have also been significantly driven by the increased costs associated with replacing ageing assets and the cost of complying with more stringent regulations, amongst other things.

As discussed previously, variable prices should equate to the incremental cost of providing energy/demand services (i.e., LRMC), therefore, price rises that are not driven by increased consumption of energy/demand should manifest themselves in a higher fixed (standing charge. This means that the average revenue per KWh (or KVA) that is being generated from each



customer (standing charges plus variable charges) must be increasing at a greater rate than the incremental cost of providing services to those customers. Under the proposed approach, the incremental revenue included in the customer contributions model will more likely exceed incremental cost, because of the impact of increases in costs that are not otherwise incremental to that customer connection.

In summary, the proposed methodology cannot ensure that productive efficiency is achieved, given the likelihood that many connecting customers will have an incremental revenue that is greater than incremental cost, and therefore, be faced with a zero Customer Contribution. In this scenario, inefficient location and connection sizing decisions can ensue. This is clearly inconsistent with the NEO, in particular, it does not promote efficient investment in energy services for the long term interests of the consumers of energy.

3.2 The stated economic rationale is flawed

Following on from the above discussion, the AER appears to have premised its adoption of the cost-revenue-test on two 'economic' arguments. These are:

- "... that the cost-revenue-test is required to ensure customers are contributing at least their incremental costs"; and
- "A connecting customer's costs will be recovered as a combination of ongoing DUoS payments and upfront capital contribution.....the AER considers that it generally does not matter if connecting customers' costs are recovered upfront or as ongoing payments, so long as a mechanism is in place to ensure that a subsidy-free price is recovered by the DNSP".

In relation to the first point, it is observed:

- The revenue-cost test is clearly not "required" to ensure customers pay at least their incremental costs; and
- The Paper appears to conflate two quite separate economic arguments, namely, it is inferred that because a DNSP is assured that it will recover at least incremental costs of connecting that customer over the life of the connection (i.e., that it is a subsidy free connection), the connection itself must be efficient.

It is self-evident that the inclusion of incremental revenue in the calculation is not a pre-requisite to ensuring that a customer at least pays their incremental cost – in fact, the alternative is to just simply calculate and charge the connecting customer's incremental cost.

The example provided in the previous section, which illustrates that despite incremental revenue being greater than incremental cost over the life of the evaluation period (thus ensuring that that customer is contributing at least their incremental costs, and therefore, it is a 'subsidy free' connection), the customer would not in fact be provided with a financial incentive to adopt the most efficient servicing solution. Therefore, the view that customers 'pay at least their incremental costs' ignores the most important economic concept, that is, that the connecting customer has a financial incentive (via an efficient price signal) to adopt the most efficient connection sizing and location decision, having regard to the relative opportunity cost of adopting different location and connection sizing solutions available to that customer.

In relation to the second point, that it "does not matter if connecting customers' costs are recovered upfront or as ongoing payments", there is no theoretical basis or framework provided for making this statement. More broadly, it is contrary to all network pricing theory, which first and



foremost, is concerned with sending the right marginal price signals (hence why the Rules focus on setting cost reflective variable prices based on LRMC). Exactly the same principle applies for network connections – that is, the connection cost itself should reflect the incremental cost to the DNSP of providing that connection at that time, at that location, so that the customer can make a decision that reflects their willingness to pay for that connection, relative to the cost to society of making that connection available. The absence of this, or the merging of upfront and forward looking costs, risks inefficient connection decisions being made (as would occur if you were to recover some sunk fixed costs via a variable charge). This is also illustrated in the example outlined in the previous section, where, because the incremental cost of connection is not clearly signalled to the connecting customer, they are not incentivised to adopt what is the least community cost solution for the provision of electricity services to them.

Notwithstanding the above, there are two valid reasons why a connection price might be allowed to deviate from the true marginal cost to society of providing that connection service. These are if:

- The demand for connection services is inelastic that is, connecting customers are not responsive to changes in the price of that service; and/or
- The administrative costs associated with sending that cost reflective price signal are prohibitive, given the allocative efficiency benefits that might stem from sending that cost reflective price signal.

The AER has provided a footnote that, infers that there has been some regard for these issues:

"DNSPs have suggested that upfront payment of costs provides a stronger locational signal to connecting parties. Therefore, a customer should generally pay upfront for its direct connection costs. Whilst this may be the case, the AER considers that for most small customer(s), direct connection costs will not vary substantially and hence a locational signal is not necessary. The AER has provided strong locational signals on, the more substantial, extension and augmentation costs. Also, where a customer's direct connection costs are higher than usual, for example when a customer requires a pole on private property, the cost will be included in a customer's revenue test possibly resulting in a capital contribution, thus providing a locational signal".

SP AusNet makes a number of observations on this comment:

- It is unsubstantiated that is, there is no evidence of the necessary analytical work to support the statement that "the AER considers that for most small customer(s), direct connection costs will not vary substantially and hence a locational signal is not necessary";
- Importantly, there is no discussion around business supply customers, and the impact on their behaviour;
- Further, if it was such that demand for connection services was totally inelastic, then the AER is correct in focusing on cross-subsidisation as its primary objective, however, it should also then adopt a pricing methodology that has the least administrative costs. The incremental cost approach is much simpler and easier to understand than the cost-revenue test, and further, it still ensures that new customers are subsidy free; and
- The use of the word 'possibly' in the AER's final sentence -".....the cost will be included in a customer's revenue test possibly resulting in a capital contribution, thus providing a locational signal" - underlines the risk that a connecting customer will in fact not see any price signal under the revenue-cost test. That is, the proposed methodology 'might' provide locational signals, but it definitely cannot 'guarantee' that a locational price signal



is sent to that connecting customer, because it cannot guarantee that incremental costs will always exceed incremental revenue.

Finally, SP AusNet reiterates that moving away from the cost-revenue test to a pure incremental cost approach, in no way, impinges on the pricing framework's ability to ensure that customers receive a subsidy free price, as the Rules (clause 6.18.5 Pricing Principles) still require on-going DUoS tariffs to be set at such a level that for "each tariff class, the revenue expected to be recovered should lie on or between: an upper bound representing the stand alone cost of serving the customers who belong to that class; and a lower bound representing the avoidable cost of not serving those customers".

Therefore, on the facts, it can be concluded that:

- The revenue-cost test is not "required" to ensure customers pay at least their incremental costs; and
- The proposed pricing framework cannot guarantee productive efficiency.

SP AusNet considers that the only way that it can be ensured that a customer pays their incremental costs, as well as providing them with the appropriate locational price signals, is to simply remove all revenue from the calculation.

Finally, such an approach is the only approach that is consistent with the Rules, and the broader NEO.

3.3 Consistency with Conventional Economic Appraisal Techniques

Despite the fact that the Incremental Revenue less Incremental Cost approach is adopted in a number of jurisdictions to calculate electricity customer contributions it is inconsistent with conventional economic theory.

Firstly, consider the process that would be undertaken to establish the economic efficiency of a typical investment proposal, say, for the construction of a new road. In that case, the first thing that would be completed is a business-as-usual (BAU) scenario. This BAU scenario would include, amongst other things, traffic forecasts, average travel times, minor operating and maintenance costs, and more major upgrades to that road. From there, the agency doing the evaluation would assess the incremental benefits and costs of each of the feasible alternative options to the BAU scenario, and assess which one has the highest benefit/cost ratio. Importantly, when doing this assessment, the agency would be assessing the incremental benefits and costs of each option, relative to the BAU (or 'do nothing') case.

The determination of the economic efficiency of connecting a new customer to a distribution network should be no different. In particular, it should require the distribution business to evaluate the incremental costs and benefits of providing that customer with a connection at that location, at that time, with those costs then being compared to the 'do nothing' or BAU case.

In the case of a new customer connection, SP AusNet considers that the BAU case is represented by the level of connections, location of those connections, and size of those connections that 'the Distribution Network Service Provider could reasonably be expected to cope with in the ordinary course of managing the distribution network' (It is noted that the words in italics are the same as used in Clause 5A.E.3 (3), which are criteria underpinning the derivation of the threshold).



Once this BAU forecast of network connections is established, the DNSP would have to develop a BAU Capex forecast to support this expected development/connection plan. SP AusNet notes that a BAU Capex forecast is already required to support two aspects of the regulatory regime:

- Regulatory Proposals: a business's BAU augmentation related capital expenditure forecast is fundamental to their Regulatory Proposal. This is why Consultants are sent in to review business's demand forecasts, because they drive augmentation Capex forecasts; and
- LRMC estimates to establish variable prices: the BAU augmentation Capex program underpins the business' LRMC estimate, which in turn is required by the Rules (clause 6.18.5 "Pricing principles") to support the derivation of variable prices that will be levied upon all customers. Moreover, the achievement of the NEO requires the promotion of "efficient....use of, electricity services", which is predicated on the achievement of allocatively efficient outcomes, which in turn requires the levying of cost reflective variable prices.

Therefore, in summary, the BAU augmentation related capex forecast is developed based on expected demand/energy forecasts given known circumstances at the time; and this BAU Capex forecast, and the underlying demand forecasts, underpin the LRMC calculation that is required for setting variable prices under the Rules and the NEO.

Having regard to the above discussion, from SP AusNet's perspective, there are two key areas where the proposed incremental revenue less incremental costs methodology is in conflict with conventional economic techniques and the Rules themselves. These are:

- Neither the incremental variable revenue, not the incremental costs that it recovers, should be in the calculation in theory, given that the Rules require that variable prices reflect the LRMC of supply anyway.² That is, the variable prices that are paid by customers are set to recover the incremental cost of providing shared network services and incremental operating costs to that customer, therefore, in theory³, they cancel each other out, thus, both should be excluded from the calculation. The AER's current approach includes both parameters for all customers who are above a certain, yet to be defined, threshold, which is unnecessary; further, they include revenues, but exclude the corresponding costs, for customers that are below the threshold; and
- Notwithstanding the above, it is customers who seek a connection that is "out-of-sequence", relative to the DNSP's BAU scenario, that should be charged the incremental cost of bringing forward the DNSP's Capex program, relative to that BAU case. 'Out-of-sequence' development can be a function of either the size or location of the connecting customer. The AER's proposed methodology has no regard for whether a customer is in-sequence or out-of-sequence, rather it just charges based on whether "the Incremental costs in the upstream (shared) network directly attributable to the new connection".

Further to the last point, SP AusNet considers that out-of-sequence development, will, in virtually all cases, also not bring forward revenues. This is because in most cases, any out-of-sequence development will just displace development that would have otherwise occurred under the BAU scenario. Put more simply, bringing forward the connection of say, 1000 lots, in one area does not bring forward the revenue that would be collected by the distribution business associated with

² The only proviso to this is where, due to the existence of postage stamp prices, prices are averaged so much that they deviate materially from the underlying LRMC of supply in that geographic region, or to that particular customer class.

³ Mathematically, this can be shown by applying the LRMC that is calculated from the use of the Average Incremental Cost Approach, to the demands used in that LRMC calculation, which generates a stream of revenues that in NPV terms, equals the NPV of the cost of the augmentation program



that 1000 lots, rather, it just displaces 1000 lots of development that would have otherwise occurred elsewhere in SP AusNet's distribution area under its BAU scenario. This is particularly so given that broader economic conditions, which are the key driver of customer connections, should be assumed to be the same under both scenarios (with or without that customer connection). Therefore, relative to the BAU case, the DNSP does not collect more revenue, nor does it change the timing of when revenue is collected.

In summary, the proposed methodology should, to be consistent with the Rules, exclude revenue generated from variable charge revenue, along with shared network costs and incremental opex. The only exception to this is for out-of-sequence development, whereby, DNSP's should seek to signal this cost to connecting customers where this is administratively simple, and the bring-forward amount is material. Where this does occur, this is unlikely to bring-forward any revenue associated with that customer.

3.4 Non-contestable costs versus Costs directly incurred by Customers

SP AusNet notes the discussion on page 15 with regards to the treatment of non-contestable costs versus when those costs that are directly incurred by the customer or where a third party is engaged by the customer to provide those services. In particular, the Consultation Paper states that:

"In a non-contestable environment, all costs are incurred by a DNSP and all the revenue is received by the DNSP, therefore, all costs and revenues would be included in the cost-revenue-test. However, where some costs are paid by a customer directly to a third party service provider, or where the customer performs some of the work (i.e. in the case of some developers), the application of a cost-revenue-test is less clear. The AER's preliminary view is that the cost-revenue-test should be applied only on the costs incurred, and revenue received, by the DNSP. Where the costs are borne by a third party, they should not feature in the cost-revenue-test. Otherwise, the AER considers a customer would always seek the DNSP to perform the works given that the DUOS payment would offset the cost of the project, whereas if an accredited service provider undertook the works, the customer would pay the full cost to that provider in addition to DUOS payment to the DNSP. The AER considers that not including competitive services in the cost-revenue-test is more likely to facilitate competitive neutrality of contestable services in accordance with the purposes of the guideline."

Beyond this statement, there appears to be little discussion of this issue in the Consultation Paper.

SP AusNet notes that if the practical application of the above statement involves the DNSP, for each customer connection, having to either:

- a) exclude from the cost-revenue test any costs borne by the customer itself (or a third party engaged by the customer) in providing a particular service; or alternatively
- b) include in the cost-revenue test the costs of that same service, if it was to be provided by the DNSP;

This would encourage developers to virtually always obtain that service from the DNSP, as this is the only way they can get the cost included in the cost-revenue test. This could be despite the fact that this may not be the most efficient means of providing this connection service.

This is recognised in the Consultation Paper where it states "the AER considers a customer would always seek the DNSP to perform the works given that the DUoS payment would offset the



cost of the project, whereas if an accredited service provider undertook the works, the customer would pay the full cost to that provider in addition to DUoS payment to the DNSP".

Finally, SP AusNet notes that this issue is neutralised if connection charges were to be based purely on the incremental cost of providing that service – that is, if incremental revenue were to be removed from the calculation. In particular, whether the service is provided by a third party or not, the "cost is the cost". Therefore, the basis for the DNSP's connection charge is entirely transparent, and if the connection service is contestable, then the connecting customer can simply engage a third party to undertake that connection if it is economically efficient for them to do so.



4 Key Issues

Concerns with the proposed approach is documented in the previous section. SP AusNet advocates the following alternative outcomes be adopted by the AER Guidelines.

4.1 Revenue derived from variable charges should be removed from the calculation

Incremental revenue derived from variable charges should be removed from the cost-revenue test proposed by the AER for all customer connections, to ensure consistency and compliance with the Pricing Principles in the Rules.

In conjunction with this, for in-sequence development, no shared network costs (or incremental opex costs) should be included in the customer contribution calculation – whether for a retail customer, or a real estate developer – as this is already being recovered (and is best recovered from an efficiency perspective) through variable charges.⁴

SP AusNet's view is that businesses should be incentivised at all times to set cost reflective prices, and the inclusion of the aforementioned adjustment seeks to overcome an issue that would not manifest itself if in fact, cost reflective prices were set in the first place. Therefore, whilst the Rules in effect require the setting of cost reflective prices, the removal of variable revenue from this calculation further reinforces the incentive for businesses to set cost reflective prices, by customer classes, so that a business' development risk is limited (if they get more development in a high cost area, then this manifests itself in higher revenue being received from variable prices).

4.2 Out-of-sequence development is subject to bring forward costs of shared network

The appropriate economic signal should be sent via the customer contribution charge for insequence development to occur. Therefore, the bring-forward costs of any shared network augmentations should only be charged to those customers that are developing out-of-sequence, relative to the DNSP's BAU case.

As there are clearly issues with regards to the administrative costs associated with such an approach justifying further constraints/criteria. These could include:

Development maps being agreed as part of the connections charging guidelines. These
maps would reflect average timeframes assumed for development in certain geographic
areas, and would be used to determine bring forward costs (i.e., the development map
says that area 'X' is assumed to be developed between years 10-15, so if a new customer
is in area 'X', it simply pays 12.5 years bring forward costs if it now causes an asset to be
constructed);

⁴ The only qualification to this is if there was a significant disconnect between the 'average' LRMC which underpins the distribution business' postage stamp variable price, and the actual LRMC associated with additional demand in that particular geographic area. For example, if the business wide LRMC was lower, say \$0.15/KWh, yet the actual LRMC for a specific geographic region was say \$0.22/KWh, then the difference between the two (\$0.07/KWh) could be factored into the Customer Contribution so that the Customer Contribution overcomes the limitations of the postage stamp variable price by sending a price that signals where there is spare capacity in the network, relative to the average, and vice versa, where there are constraints in the network, relative to the average. Where this is the case, it could possibly be proposed that business insert into the calculation the difference between the geographic and SP AusNet wide LRMC calculation. SP AusNet's view is that despite this potential issue, this is still a second-best outcome



- In-fill residential development could be excluded from being charge any bring forward costs; and / or
- The threshold that is required to be set by the AER could actually apply to these bringforward costs (i.e., small 'retail customers' are never assessed as being out-of-sequence). SP AusNet does not consider this to be inconsistent with the Chapter 5A, which states that "A retail customer (other than a non-registered embedded generator or a real estate developer) who applies for a connection service for which an augmentation is required cannot be required to make a capital contribution towards the cost of the augmentation (insofar as it involves more than an extension) if ... a relevant threshold set in the Distribution Network Service Provider's connection policy is not exceeded".

Further work should be undertaken to clarify flesh this criteria to ensure that the approach adopted is not overly burdensome, from an administrative perspective.

4.3 Out-of-sequence development does not, in most cases, bring forward revenue

SP AusNet considers that out-of sequence development does not bring forward revenue; rather, it just displaces development activity that would have otherwise already occurred under the DNSP's BAU scenario.

This is particularly the case for residential development.

4.4 Extension / Connection Assets

Despite the removal of the variable charge revenue, there is still a possibility that inefficient locational decisions could occur when incremental revenue exceeds incremental costs, as was illustrated in a previous section.

Given that this is potentially an increasing risk, SP AusNet advocates the removal of all standing charge revenue from the Customer Contribution calculation.

This, combined with the removal of incremental variable revenue, would mean that a Customer's Contribution would only reflect their 'pure' incremental cost of supplying that connection, along with the bring-forward costs of augmenting the shared network, if that development is out-of-sequence (relative to their BAU case). This removes the risk that a customer may adopt an inefficient connection decision (location/sizing) as a result of facing a price signal that is not reflective if the incremental cost of connecting in different locations.

4.5 The application of the cost-revenue-test to third party costs

The AER should consider further the implications and distortions associated with the removal of third party costs from the test, whilst requiring the DNSP's own cost for providing the same service to be included. This will have significant implications for competition for the provision of these services, along with impacting the timing of actually delivering connection services to customers given the impact that it would have on existing resources and third party service providers.

It is observed that the removal of incremental revenue from the Customer Contribution calculation overcomes this issue.



5 Other Issues

There are a two other secondary issues that SP AusNet wishes to highlight, over and above the core cost-revenue calculation.

These are:

- Pioneer Schemes; and
- The pre-calculation of a contribution for certain types of homogenous customers.

5.1 Pioneers Schemes

SP AusNet currently applies Pioneer Schemes to customers with demand less than 50kVA, which means that this scheme applies to customers such as residential customers and small farming supplies.

Given its experiences with the current scheme the design of any new scheme should take into account:

- The potentially significant administrative costs being borne by the DNSP (and customers);
- Deal with change in occupiers between the time when the asset was initially funded and constructed, and when the rebate/s is provided; and
- Customers' perceptions as to the benefits of the scheme, and moreover, their attitudes if the scheme were to be removed or significantly changed.

Notwithstanding the above, SP AusNet notes two points:

- There is some merit in the adoption of a Pioneer Scheme. More specifically, if extension assets are in fact designed to service more than one customer, yet the full costs of the extension asset is being included in the charge – not the bring-forward cost of that extension asset under normal development conditions – then a Pioneer Scheme overcomes the inherent issue of a customer paying for more than the minimum cost of providing that service to that individual customer itself. Further, it provides for the initial customer to take the development risk, which SP AusNet considers is fair and reasonable; and
- A reimbursement scheme conceptually, sounds like it would be very complex to administer – potentially tracking details for thousands of connection assets within in a short period of time (3- 5 years). A detailed understanding of the costs of administering the current scheme is fundamental to assessing whether there will be net benefits from the adoption of such a scheme.

5.2 Set Customer Contribution based on an Average Customer

On page 15 and 16 of the Consultation Paper, the AER states that:

"While the AER considers that the cost-revenue-test is required to ensure customers are contributing at least their incremental costs, for many classes of customer, a set capital contribution may be the most administratively efficient manner to charge for



connections. For basic and some standard connection offers, the AER would allow the amount of a capital contribution to be pre-calculated for all customers within a class.

Where this amount was pre-recalculated it would be done using a cost-revenue-test based on an average or typical customer within the class. As such, large groups of roughly homogenous customers would be able to access connections on consistent terms at a consistent price."

The AER considers that:

For larger customers, or customers with specific requirements in addition to standard connection services, the cost-revenue-test would need to be applied individually. As DNSPs can determine what standard connection offers to provide, the AER considers that DNSPs will be able to balance the administrative costs against ensuring that customers are meeting at least their incremental cost."

In short, the Consultation Paper appears to advocate the adoption of an average charge for homogenous groups of customers. Prima facie, this may be reasonable, when the cost of connection is considered, however, this does not take into account the varying levels of revenue that are expected to be received from a particular customer, given its location, relative to the DNSP's average.

It is known from previous analysis that energy consumption varies significantly by geographic region. This can be due to a number of reasons, including the average house size in that geographic region (postcode) and the weather patterns affecting that house (e.g., inland versus coastal). However, based on the historic data for SP AusNet, the most important driver appears to be whether that house is located in a holiday region (i.e., whether it is a holiday home) or not. Current information indicates that for residential customers, 35% of postcodes are either 20% below or 20% above the average residential SP AusNet usage.

SP AusNet considers it to be important that the AER is alert to the implications associated with adopting an average Customer Contribution charge, when in fact, the usage patterns across its region vary significantly. Obviously, this is only relevant if incremental revenue is retained in the calculation.



Appendix A: Response to detailed questions

Question	Initial SP AusNet Comment
1. The AER seeks comments on the above proposed definitions and those in appendix A for use in the connection guideline.	There does not appear to be any significant issue with these definitions.
2. The AER seeks comments on its design criteria for the connection charge guideline.	There is nothing in the AER's design criteria that links back to the NEO. In particular, the closest 'economic' principle is the cross subsidisation criteria, yet there is nothing in the design criteria that emphasises the need to promote productive, allocative and dynamic efficiency (or put another way, there is nothing that explicitly states the Customer Contributions methodology should seek to "promote efficient investment in, and use of, electricity services")
3. The AER seeks comments on its preliminary position to apply a cost-revenue-test of the form CC = ICCS + ICSN – $IR(n=X)$.	See comments in main body of report re: removal of incremental revenue from this calculation. Further, as noted in response to other questions, rebates should be explicitly provided for in the formula. Further, capital costs above the LCTA should also be explicitly provided for in the formula, as an additional parameter.
4. The AER requests comments regarding whether DUoS is the appropriate measure of revenue to use in the cost-revenue-test.	See comments in main body of report re: removal of incremental revenue from this calculation.
5. The AER requests comments on the appropriate assumptions regarding the connection period for new connections.The AER requests comments on how much flexibility DNSPs, or new business customers, should have to alter these default assumptions.	No issues.
6. The AER requests comments regarding whether the WACC is the appropriate discount rate to use in performing the net present value calculation.	Intuitively, a pre-tax WACC would appear to make sense, just from a simplicity perspective. However, more detailed analysis of the financial implications of these two alternatives may be required before a final decision could be made.
The AER requests comment regarding whether it is appropriate to use a pre-tax WACC, or a post tax WACC with a separate adjustment for taxation.	



Question	Initial SP AusNet Comment
7. The AER requests comments regarding the appropriate assumption of future price path to use in the cost-revenue-test.	If incremental revenue is retained, this is a reasonable assumption for the future price path.
8. The AER seeks comments on its preliminary view that an extension should be funded by the customer requiring the extension, subject to the cost-revenue-test.	SP AusNet agrees with the AER's view that an extension should be funded by the customer requiring the extension, subject to the cost-revenue-test. As stated in the main body of the report, this should not be offset by the incremental revenue associated with those customers.
 The AER seeks comments on its preliminary view that: Subject to customer agreement, DNSPs should call tenders for connection works over \$3000: and 	SP AusNet currently has a rigid process in place for contestable works. When a project is greater than \$5,000 for contract, labour and plant (essentially the construction costs), the customer is offered the 3 options listed below:
- For works below this threshold. DNSPs should use pre-	(1. They can accept SP AusNet's quote;
established period (standing) contract prices from qualified third party contractors as the basis for cost calculation.	(2. The customer can manage the competitive tender process themselves, based on technical specifications provided by SP AusNet; or
	(3. The Customer can request that SP AusNet manage a competitive tender process on their behalf.
	Projects below this value (\$5000) would not be economically viable to put through a tender process due to the added cost of this exercise, however, provided the customer is allowed the option to run a tender process below this threshold (should they wish to) SP AusNet does not see any value to the customer of lowering the threshold to \$3,000.
	Additional costs are incurred on behalf of the customers if the threshold were lowered to \$3000. In addition, a reduced threshold would:
	 Result in delays for the customer; and
	 Considerably increase SP AusNet's work load.
	Therefore, SP AusNet advocates:
	- The AER set threshold at least a level that is consistent with current practices (\$5000); and
	 AER carefully consider the potential ramifications stemming from any mandatory requirement to tender out any project that is above the agreed threshold.
	Finally, the use of "pre-established period (standing) contract prices from qualified third party contractors as the basis for cost calculation" below the threshold is supported. DNSPs should be required to provide these at prices that reflect the market rates for those services.



Question	Initial SP AusNet Comment
9. The AER seeks comments on its preliminary view to charge for shared network augmentation on a per unit rate based on the calculation method outlined in the South Australia Guideline No. 13.	See comments in main body of report re: removal of incremental revenue and incremental costs of augmenting the shared network from this calculation.
10. The AER seeks comments on its preliminary view to allow DNSPs to segment their network into areas where different shared network augmentation charge rates would apply.	See comments in main body of report re: removal of incremental revenue and incremental costs of augmenting the shared network from this calculation.
 11. The AER requests comments on: what is the most appropriate manner to calculate the operation and maintenance costs imposed by a new customer should the O&M cost be excluded from the incremental cost calculation; and instead the incremental revenue calculation be adjusted, based on the equivalent network tariff with the O&M component removed? 	As inferred in the main body of the report, if incremental variable revenue is removed from the calculation, all incremental costs associated with connecting customers in-sequence should be excluded from the customer contributions calculation. This would also include O&M costs.
	If Incremental revenue (and therefore cost) is maintained in the calculation, then O&M is necessarily required to be included in the calculation. Further, based on SP AusNet's experience, it would suggest that this be:
	 Linked back to the most recent AER Final Decision numbers for scale efficiencies, and step changes that can be clearly linked to changes in customer numbers; and
	 That the O&M cost be converted into a percentage of CAPEX, as this necessarily creates the link between the assets provided to service that customer, and the O&M costs associated with those assets.
12. The AER seeks comments on its preliminary view to set a fixed demand threshold rather than a threshold dependant on local capacity.	See comments in main body of report re: removal of incremental revenue and incremental costs of augmenting the shared network from this calculation.
	Notwithstanding that, there is merit in the option of setting the demand based on local "spare" capacity, not local capacity. SP AusNet notes the AER's concern about complexity and the issue of interconnectedness of the network, which has lead them to choose a fixed demand, rather than one that varies with local capacity, however, referencing the threshold back to the location (and even better, the spare capacity at a location) at least provides some locational signal. Fixing it for some arbitrary classification (e.g., urban, rural, CBD) is virtually useless when it comes to sending locational signals.
13. The AER seeks comments on its preliminary view to set a threshold for most areas of networks on the greater of:	See comments in main body of report re: removal of incremental revenue and incremental costs of augmenting the shared network from this calculation.



Question	Initial SP AusNet Comment
 the level of customer demand in each DNSP's network that would result in approximately 10 per cent of new customers paying for specific shared network augmentation (based on existing customer demand information);or 	
 70 kVA (equivalent to 100 Ampere 3-phase low voltage supply). 	
The AER seeks comments on its preliminary view to allow DNSPs to nominate less developed areas of the network where a different threshold would be more appropriate.	SP AusNet agrees with the AER's view to allow DNSPs to nominate less developed areas of the network where a different threshold would be more appropriate.
The AER seeks comments on its preliminary view that customers connected on SWER lines should pay for shared network augmentation on demand above 25kVA as the default level unless a different threshold is nominated by a DNSP and deemed appropriate by the AER.	SP AusNet requires further time to analyse the impacts of adopting this threshold.
14. The AER seeks comments on its preliminary view that it will be difficult to verify and enforce a customer's peak coincident demand and therefore the threshold should be a set based on peak demand.	SP AusNet considers that it is possible to base this on a customer's coincident peak demand; however, the coincident factor cannot be 'customer specific, rather, it would have to be based on average co-incident factors for that class of customers. The reason it cannot be based on the specific customer's co-incident factor, is because:
	a) it will not be known what that actually is, until after they have paid their customer connection charge, and connected to the network; and
	b) because there is a significant incentive for the customer to claim that their load will not be co- incident, yet there is no way to apply a financial penalty if a lower than actual co-incident demand is accepted by the DNSP.
15. The AER seeks comments on its preliminary view that the approach outlined in ESCOSA's Guideline No. 13 is a fair and practicable approach	If incremental revenue is removed, along with incremental cost of augmenting the shared network, no threshold is necessarily required.
for estimating peak demand that should be adopted.	However, if this is not the case, SP AusNet considers there is significant merit in adopting the ETSA Utilities approach, with a provisional value being used where agreement cannot be reached with the customer on an appropriate demand, and that this can be reconsidered after three years, based on actual load data.
16. The AER seeks comments on its preliminary view that a customer	If incremental revenue is removed, along with incremental cost of augmenting the shared network, no



Question	Initial SP AusNet Comment
who is required to pay for shared network augmentation, would pay for shared network augmentation on the amount of their peak demand above the shared network augmentation threshold.	threshold is necessarily required, except where that customer's connection brings forward the augmentation of the shared network.
17. The AER seeks comments on its proposal that embedded generators should fund specific network shared network augmentation to remove constraints on their outputs due to limits of the existing network.	SP AusNet agrees that embedded generators should fund specific network shared network augmentation to remove constraints on their outputs due to limits of the existing network.
 18. The AER seeks comments on: Should the AER place limits on the maximum amount of prepayment that a DNSP can charge the connecting customer? If so, should the AER specifically limit the amount of a prepayment to the actual upfront costs incurred by the DNSP, or should it set a maximum percentage? 	There should be no limits placed on the maximum amount of prepayment, it should be allowed to reflect the upfront costs incurred by the DNSP in assessing that development application, and providing that connection service. See above.
19. The AER seeks comments on whether its connection guideline should have an option for DNSPs to implement security fee schemes.	SP AusNet explicitly supports the implementation of a security fee regime. It will be particularly important with regards to minimising the risk of new large business customers connecting in industries that are transient, or generally more risky.
20. The AER seeks comments on its proposed principles for a security fee scheme.	SP AusNet support the adoption of a security fee scheme that it should be able to cover of both early default (e.g., prior to the end of the 15 year evaluation period), as well as under recovery of revenue, relative to the assumptions underpinning the customer contribution calculation. This is overcome if incremental revenue is removed from the calculation.
21. The AER seeks comments on its preliminary view that the assets subject to a rebate scheme should be depreciated over a 20 year term.	The AER explained at the Public Forum that 20 years was chosen to effectively reduce the incentive to delay connection until just after the 7 years has elapsed. It is not based on any assessment of asset lives. SP AusNet considers this to be broadly reasonable.
The AER seeks comments on its preliminary view that a rebate scheme should have regard to the length of an extension and the capacity of the assets used by subsequent customers.	SP AusNet agrees that a rebate scheme should have regard to the length of an extension and the capacity of the assets used by subsequent customers.
The AER seeks comments on its preliminary view that a \$500 refund threshold strikes an appropriate balance between a DNSPs'	SP AusNet advocates a refund threshold of \$1000 be set.



Question	Initial SP AusNet Comment
administrative costs and the materiality of a refund. The AER seeks comments on its preliminary view on customer payments when the network is built to a greater standard than a customer or group of customers would otherwise require, if the DNSP did not consider it more efficient to build the network to a greater standard based on forecast load growth.	SP AusNet understands this scenario to be where a customer or group of customers has sought a connection that is above the least cost technically acceptable solution. If this is the case, consistent with current practice, this should not be subject to the cost–revenue test. That is, the difference between the solution adopted, and the LCTA costs, should be added below the line (after the cost-revenue test has been undertaken). SP AusNet notes that the Customer Contributions formula should reflect this practice. None of this is of relevance if SP AusNet's proposed 'pure' incremental cost approach is adopted.
The AER seeks comments and alternative approaches to deal with the costs allocation issues where a DNSP provides a network extension on request of a single customer, to a standard greater than that customer requires due to the DNSP's network planning process.	First and foremost, SP AusNet observes that the last thing anyone wants is for there to be an incentive for the sizing of assets to occur only to meet an individual customer's needs, if it is more efficient to construct assets of a larger scale, given forecast demand. Therefore, prima facie, the AER's view may be correct that it may be equitable for the connecting customer to only pay what the connection cost would have otherwise been to service that customer. That said, SP AusNet does not consider this to be a major issue in electricity, relative to say water, because of the shorter planning horizons in electricity (electricity assets are less "lumpy", and therefore, have less in-built spare capacity). In particular, if the rebate scheme covers the full cost of the assets, and the normal planning horizon is around 7 -10 years in electricity, then all that will happen is that the constructor of the assets (the original connecting party) takes the development risk in that area, as opposed to the broader customer base if the DNSP were to have constructed that asset. Put another way, if, immediately after construction, that asset's capacity is taken up by other connecting parties, the original developer will be immediately compensated as it will be rebated the full amount (expect for his/her share of the asset's capacity) virtually immediately. On the other hand, if no development occurs, then they bear the full cost associated with that asset. SP AusNet considers that is equitable, because what it means is that without the existence of that first development, that asset would not have needed to be constructed. SP AusNet notes that this is consistent with what it considers should be an objective of the charging framework, namely, that there be a financial penalty for connecting in areas that are demonstrably inconsistent with what is the logical (from an economic perspective) sequence.



Question	Initial SP AusNet Comment
	One final comment from SP AusNet on rebates is that it considers that the actual customer contributions formula needs to change to reflect the fact that the DNSP can charge a new connecting customer a rebate amount (over and above their cost-revenue test), which in turn is then passed on to the original customer that funded the asset extension.