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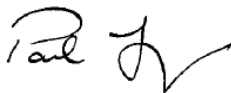
12 December 2013

Dear Vanessa

Re: Assistance with review of Power and Water Commission's (PWC) pricing principles, pricing proposal and capital contributions policy

Thank you for engaging Deloitte to assist the Utilities Commission (the Commission) in its review of PWC's pricing proposal. This letter and attachments below outlines our key findings and recommendations in relation to the review.

Yours sincerely



Paul Liggins
Partner
Deloitte Touche Tohmatsu

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Attachment: Summary of our advice

1 Scope of our work

The scope of this project involved providing high level advice on two aspects of PWC's regulatory proposal for the 2014-19 Network Price Determination, being its Network Pricing Principles Statement (NPPS) and its Capital Contributions Policy.

Network Pricing Principles Statement (NPPS) and Pricing Proposal

We were asked to provide advice on:

- whether the principles and methods set out in the draft NPPS meet the objectives set out in clause 74 of the *Electricity Networks (Third Party Access) Code*, (the Code);
- the reasonableness of the judgements exercised by PWC in balancing competing objectives; and
- whether policies, strategies and procedures are consistent with accepted industry standards, and where different, whether these differences are appropriately justified.

In particular, we were asked to provide the Commission with a high level view on whether:

- the Network Pricing Principles Statement is consistent with the principles in clause 74 of the Code; and
- the indicative tariffs and charges set out in the Pricing Proposal for 2014-15 will result in the network provider complying with the principles in chapter 7 of the Code and requirements elsewhere in the Code.

Capital Contributions Policy

In relation to PWC's proposed Capital Contributions Policy we were asked to provide advice on whether it:

- meets the requirements of Chapter 8 of the Code;
- is inconsistent with other requirements of the Code; or
- is inconsistent with section 86 (2) of the *Electricity Reform Act* (the Act).

This report outlines our findings on these two key areas in turn. We note that, given the tight timeframes for this review, we have focused on providing high level advice only on the areas where we are concerned that PWC's proposal has shortcomings or is inconsistent or does not meet the requirements of the Code or the Act, rather than providing a comprehensive assessment of every proposed tariff or policy.

In undertaking this review, we have examined the material provided to us by the Commission and the material published on the Commission's website. We have also engaged with PWC to a limited extent.

2 Network Pricing Principles Statement (NPPS) and pricing proposal

2.1 The role of the Utilities Commission in assessing the draft NPPS and pricing proposal

In accordance with clause 75(5) of the NT Access Code, prior to the commencement of each regulatory control period, PWC must provide the Utilities Commission with a draft statement setting out details of principles and methods to be used for defining the individual standard access services to be supplied by it and for establishing the reference tariffs that applies to those services. The Utilities Commission must approve the statement for use by PWC unless, in its opinion, the statement is not consistent with the principles in clause 74.

In addition, clause 77 (1) requires that at least 60 days prior to the start of each financial year, PWC must provide to the Utilities Commission a statement setting out its proposed reference tariffs for the standard network access services it will be supplying. The Utilities Commission must approve the tariffs and charges unless, in its opinion, the tariffs and charges would result in PWC not complying with the principles in Chapter 7 of the Code or is inconsistent with other Code requirements.

2.2 Relevant Provisions of the Code

Key provisions of the Code relevant to our work are set out below:

Objectives of Price Regulation (s. 63)

Price regulation under this Part must be administered to achieve the following outcomes:

- (a) efficient costs of supply;
- (aa) expected revenue for a regulated service or services that is at least sufficient to meet the efficient long-run costs of providing that regulated service or services, and includes a return on investment commensurate with the commercial and regulatory risks involved;
- (b) prevention of monopoly rent extraction by the network provider;
- (c) promotion of competition in upstream and downstream markets and promotion of competition in the provision of network services where economically feasible;
- (ca) an efficient and cost-effective regulatory environment;
- (d) regulatory accountability through transparency and public disclosure of regulatory processes and the basis of regulatory decisions;
- (e) reasonable certainty and consistency over time of the outcomes of regulatory processes;
- (f) an acceptable balancing of the interests of the network provider, network users and the public interest; and
- (g) such other outcomes as the regulator determines are consistent with the underlying principles set out in clause 2.

Network Pricing Objectives (s. 74):

- (1) The reference tariffs are:
 - (a) to reflect efficient costs of supply;
 - (b) to involve a common approach for all network users, with the actual tariff with respect to a particular network access service only differing between users because of:
 - (i) the user's geographical and electrical location;
 - (ii) the quantities in which the relevant network access service is to be supplied or is supplied;
 - (iii) the pattern of network usage;

- (iv) the technical characteristics or requirements of the user's load or generation;
 - (v) the nature of the plant or equipment required to provide the network access service; and
 - (vi) the periods for which the network access service is expected to be supplied;
 - (c) to be transparent and published in order to provide pricing signals to network users;
 - (d) to promote price stability; and
 - (e) to reflect a balancing of the quest for detail against the administrative costs of doing so which would be passed through to end-use customers.
- (2) In the event that the regulator considers there to be a conflict between the requirements set out in subclause (1) and the requirements set out in clause 63, the requirements in clause 63 are to take precedence.

In terms of the amount of information to be provided by PWC, we note that potentially two clauses are key. Firstly clause 78(2) requires that PWC's reference tariff statement detail how the tariffs and charges have been calculated by application of the principles in Chapter 7 of the Code. Further, section 63(d) states in part that regulatory accountability through transparency is an objective of price regulation. To the extent that this clause applies not only to the Commission's decisions but also to PWC's submissions (and this is a legal question) then this is also relevant to our analysis.

2.3 The NER and Guidelines and determinations published by the AER

The Utilities Commission seeks to align electricity industry regulatory arrangements with those of the National Electricity Market, where possible.¹ In reviewing PWC's proposal, we have had regard to relevant principles in the National Electricity Rules (NER) including in particular clauses 6.18.5 and 6.18.4 which are reproduced in Appendix A.

2.4 Pricing Guidelines published by the AER

The AER released a pricing methodology guideline for electricity transmission businesses in October 2007, which is based on the NER requirements and sets out the information that is to be included in a TNSP's pricing methodology, permitted pricing structures, cost allocation approaches and information disclosure requirements.²

There is no equivalent guideline for electricity distribution businesses, however, we have taken into account NEM distributors' approved pricing proposals in assessing PWC's proposal.

2.5 Submissions

We have considered relevant comments made in submissions from the following stakeholders:

NT Major Energy Users (NTMEU):

- NTMEU stated that PWC needs to provide a detailed explanation as to how it has developed its cost reflective allowances for each consumer class and why it claims that existing tariffs are not cost reflective.
- It recommended that the Utilities Commission should do more than just review the pricing principles to assess the reasonableness of PWC's tariff variation.
- In regards to specific proposed tariff adjustments, suggested that PWC should move away from kWh tariffs to kVA tariffs.
- NTMEU also submitted that PWC's proposed Excess kVA fee:
 - Is not efficient
 - Is inequitable
 - Is likely to be difficult for some customers to understand and respond to.

¹ Utilities Commission, *2014-19 Network Price Determination Framework and Approach Paper*, November 2012, p. 10.

² AER, *Electricity transmission network service providers Pricing methodology guidelines*, October 2007.

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Dr Francis Clarke:

- Dr Clarke advocated the use of cost reflective policy as a driver for market efficiency and increased utility and social welfare.
- Suggested the inclining block tariffs (IBT) should be implemented sooner rather than later.
- Dr Clarke recommended that any fixed charge increases are properly justified as cost reflective, particularly in light of the impact that increased penetration of solar PV is likely to be having on PWC's sales and therefore level of volume risk.

NTCOSS:

- NTCOSS expressed concern that a 58% increase in network charges will cause significant hardship on low income and disadvantaged groups in the NT.
- Also submitted that peak pricing and time of use tariffs may adversely impact those disadvantaged groups that may be unable to shift their load (due to age or health issues).

2.6 Summary of PWC's NPPS proposal

PWC has proposed a number of structural changes to its standard control services tariffs including:

- For Domestic and Small Commercial customers, shifting away from declining block tariffs to inclining block tariffs and introducing new block levels at high levels of consumption
- Increasing the fixed charge component for Small Commercial Customers
- Separating tariffs for Street Lighting and Traffic Lighting and similar supplies
- Separating Commercial kVA tariffs for LV and HV connected customers and rebalancing the current declining block structures to have a single kVA block for each tariff
- For Commercial kVA tariffs, switching from a monthly reset kVA demand charge to an annual kVA capacity charge
- Lowering the Commercial MWh charge and increasing the Commercial kVA charge
- Conduct a trial of TOU tariffs to support an analysis of rolling out smart meters

PWC proposes to implement these charges gradually over the regulatory period. In the first year of the regulatory period, PWC proposes a uniform increase in all tariffs to account for its revenue proposal, with rebalancing to occur gradually in later years of the regulatory control period.

In addition to these changes to Standard Control Services, PWC has also proposed to introduce a new Alternative Control Service charge for commercial customers with a poor power factor for their excess kVAr demand.

2.7 Overarching comments on the NPPS

The NPPS contains a level of detail that is similar to that provided by other network businesses in their annual pricing proposals submitted to the AER.

PWC's proposal for new tariff structures also reflects similar proposals submitted in the NEM, for example the shift from declining block to inclining block tariffs is reflective of a general trend for network tariffs, with Victoria, NSW, South Australia and Queensland implementing inclining block network tariffs. Other networks have also introduced various forms of capacity tariffs for commercial customers, charging according to the recorded peak demand that occurs within a half hour period over a 12 month period.³

³ For example, Ausgrid's Capacity Charge applies to the maximum half hourly kW or KVA recorded during the peak period of a working weekday over the preceeding 12 month period. See Ausgrid, *Ausgrid Network Pricing Proposal For the Financial Year Ending June 2014*, available at: <http://www.aer.gov.au/sites/default/files/1.%20Ausgrid%20-%202013-14%20Pricing%20Proposal%20%28revised%20proposal%29%20-%2016%20May%202013.pdf>

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However, it should be noted that while a key reason cited by PWC for changing the tariff structure cited is to reduce peak demand and hence the need for network augmentation, the NPPS does not clearly demonstrate that peak system demand is, or is likely to be, an issue on the network. We suggest that including this information in the NPPS will assist in promoting transparency in the reference tariffs consistent with clause 63(d).

As noted there is a requirement in clause 78 (2) of the Code for PWC to detail how its proposed tariffs and charges have been calculated by reference to the principles in Chapter 7 of the Code. While PWC has stated its view that the NPPS is compliant with the relevant Code and Rule requirements, in section 4.5 of the NPPS, instead of considering whether each pricing structure change was in accordance with the Code principles, PWC considered whether each of the principles had been met in some way by the NPPS. Thus, although the NPPS arguably does not sufficiently outline how each proposed tariff structure change is compliant with the Network Pricing Objectives in clause 74 of the Code, we have considered the proposed tariffs and it appears that most are likely to be consistent with the objectives.

For example, moving to inclining block tariffs has the potential to improve the cost reflectivity of the tariffs (assuming the network is constrained or may become constrained in the foreseeable future – although PWC has not provided information to demonstrate this) as well as improve pricing signals to network users, as it recognises that increasing consumption ultimately leads to network constraints which drive augmentation costs. Shifting all Domestic and Small Commercial customers onto inclining blocks concurrently enables a common approach for all network users to be implemented, with tariffs varying only due to the pattern of network usage and characteristics of the load. PWC has estimated that the shift to inclining block tariffs is unlikely to result in significant price changes for the majority of customers, which is consistent with the requirement for price stability. The shift is also relatively simple to administer and publishing the NPPS of itself helps achieve transparency.

2.8 Cost of Supply model

Most of the tariff structure changes proposed by PWC for the next regulatory period stem from analysis conducted using its new Cost of Supply model. In developing this model, PWC has taken guidance from the NER pricing principles, particularly in relation to identifying, for each customer class, the stand alone and avoidable costs and the long run marginal costs. The costs are based on the Optimised Depreciated Replacement Cost of the assets, and are allocated to 'Network Cost Pools.' We note that we did not review the Cost of Supply model itself, and have limited our review to the descriptions of its outputs provided in the NPPS and considering whether they are consistent with the Code and other requirements.

The Cost of Supply model has highlighted where customer classes are either over or under recovering revenue compared to network cost. This has informed PWC's proposed tariff structure changes, including the proposed introduction of a new tariff for Street lighting and similar night supplies and increases to the Service Availability Charge for small commercial customers. Based on the cost of supply model information provided by PWC, these changes are likely to improve the cost reflectivity of the tariffs, which is consistent with the Network Pricing Objectives.

2.9 Commercial kVA capacity tariffs

Shifting Commercial kVA tariffs from a monthly reset kVA demand charge to an annual kVA capacity charge will improve cost reflectivity and pricing signals, given networks are planned to meet peak capacity over a timescale significantly longer than a month. Signalling to customers (including those on standby or co-generation) that their greatest demand over a year is what actually drives network costs will encourage more efficient network use.

However, improved cost reflectivity needs to be balanced with the fact that the tariff is likely to have a significant impact on many customers' bills and will present an arguably excessively strong signal about the need to lower annual maximum demand, which in our view, may not appropriately balance the interests of PWC and network users (Code clause 63 (f)). A one off high demand event could increase a customers' bill significantly, which would result in large year on year variations in electricity bills. Promoting price stability is one of the Network Pricing Objectives (clause 74(1)(d)), which arguably would not be met by the proposed tariff.

In addition, due to the diversity of system load, we note that many customers' peak demand will occur at a time outside of the system peak demand and may therefore not directly contribute to the cost of augmenting the network to meet peak demand. Charging such customers for the year-round impact of their maximum kVA demand will arguably not result in more cost-reflective tariffs unless their peak demand falls at the time of system, or local, peak. PWC could

explore adjusting kVA demand for the diversity with system peak before applying the charge, which would improve its cost reflectivity. Other distributors have set capacity tariffs based on the annual peak demand that occurs within a typical peak period, i.e. working hours of weekdays, etc. This could improve the cost reflectivity of the capacity charge and help to create incentives for customers to shift their demand outside of peak periods.

PWC has indicated that it intends to conduct further analysis on this proposed change and potentially introduce this new tariff arrangement in or after 2014-15 on a revenue-neutral basis (i.e. the \$/kVA tariff will be set lower than the present kVA monthly demand tariff, given a customer will be charged for a higher kVA year round rather than just for the month in which their peak occurs). However, we note that revenue neutrality at the total network level does not mean that this will be the case for each customer. When introduced, we suggest that the initial charge should have regard to the need to promote price stability for customers and to reflect the underlying costs of Commercial customers' peak demand.

2.10 Excess kVAr tariff

PWC has proposed to introduce a new Fee Based Alternative Control Service to charge kVA metered customers and new customers on interval meters for their excess kVAr which occurs due to a poor power factor at the customers' site.

PWC has provided only limited details on how this tariff would be calculated and charged. From the example provided, it appears that the tariff will be calculated to attempt to equalise the average \$/kVA paid between customers with 'compliant' and customers with 'non-compliant' power factors under PWC's Network Connection Technical Code. As a result, non-compliant customers will face the full cost of their excess kVAr.

PWC suggested that the tariff would be calculated following further analysis and introduced sometime during the next regulatory control period. PWC noted that SA Power Networks introduced a similar Excluded Services charge in 2007, and provided some information on the improvements in SAPN's customers' power factors since then.

We note that the Utilities Commission does not have a role in regulating the prices of Alternative Control Services (Excluded Services) under the Code, however, that PWC must demonstrate in its regulatory proposal that the costs of the proposed service are appropriately allocated.⁴ The Commission has indicated that it will provide its views on whether the pricing proposal is consistent with the principles set out in the Code.⁵

A number of issues with the proposed new tariff are yet to be resolved, including:

- how the tariff will be calculated with regard to the costs that excess kVAr imposes on the network (cost reflectivity)
- why the tariff should be an Alternative Control Service, given the tariff is related to the recovery of network augmentation costs which are recovered through standard control services
- if the tariff is to be cost reflective, how standard control services charges will be adjusted so that an appropriate portion of the kVA demand related cost is recovered via the new charge
- whether the proposal to apply the tariff as a Fee-based service is appropriate, given it is effectively a penalty for non-compliant power factor and incentive pricing signal rather than cost-recovery for the provision of a separate service.

Due to these unresolved issues, it is Deloitte's view that the proposed excess kVAr tariff as described by PWC does not meet the Code requirement for reference tariffs to reflect the efficient costs of supply (clause 74(1)(a)).

In addition to these issues, as pointed out by the NTMEU, while poor power factor affects all connection points to varying degrees, the proposed charge would only be levied on customers that have metering in place that can measure the excess kVAr. This means that customers will be charged on the basis of their metering, suggesting that the tariff results in an approach that is not *common to all network users*, which is inconsistent with Code clause 74(1)(b).

The NER provides that the availability of metering technology is one factor by which a retail customer can be assigned to a tariff class, however, the NER also requires that retail customers with a similar connection and usage profile should

⁴ Utilities Commission, *2014-19 Network Price Determination Framework and Approach Paper*, November 2012, p. 43.

⁵ *Ibid*, p. 39.

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be treated on an equal basis. Arguably, the proposed tariff penalises customers with kVA metering relative to those without such metering, which would result in similar customers being treated unequally.

2.11 Summary

In our view the proposal to move to commercial kVA capacity tariffs as proposed by PWC may not be consistent with the Code as it does not necessarily appropriate balance the interests of PWC and network users, or promote price stability.

Similarly, the approach to apply an excess KVA_r tariff is arguably inconsistent with clauses 74 (1)(a) and (1)(b) of the Code.

We also suggest that in order to be fully compliant with clause 78(2) and/or clause 63(d), PWC should provide information regarding the extent to which peak demand is driving its costs.

3 Capital Contributions Policy

Prior to the commencement of each regulatory control period, PWC must provide to the Commission a draft statement providing details of the principles and methods for establishing capital contributions under Chapter 8 of the Code. The Commission must approve the statement for use by the PWC unless, in the opinion of the Commission, the statement does not comply with the requirements Chapter 8 or is inconsistent with requirements elsewhere in the Code.

Broadly speaking, a capital contribution is an upfront payment that some customers are charged to connect, or to upgrade their connection, to the electricity network.

PWC's Capital Contributions Policy applies to Developers, Large Individual Network Users, Small Individual Network Users and Generator Users. PWC outlined that the high level objectives of its Capital Contributions Policy are to:⁶

- Provide appropriate economic pricing signals to network users that reflect the true cost of connection to PWC's electricity networks or any new or upgraded network access services
- Ensure the commercial viability of connections made to PWC's electricity networks, in order to provide a return to the shareholders commensurate with the required investment
- Ensure more equitable outcomes for both new and existing network users.

According to PWC, this is consistent with the network pricing objectives, the capital contributions principles and the high level pricing objectives of cost reflective price signals, simplicity, stability and equity.

We have reviewed PWC's Capital Contributions Policy against the Code and the Act. In undertaking this review, we received further information from PWC on its policy and engaged with PWC's representatives.

In our experience, the level of detail included in PWC's Capital Contributions Policy is comparable to that provided in other network businesses' (and regulators, where appropriate) policies. However we have identified some areas where more detail is needed in our discussion of the issues below.

We have outlined below the areas of PWC's Capital Contributions Policy that we consider may not comply with the requirements of the Code, and areas where additional information on how the Capital Contributions Policy operates would assist potential applicants understand how the policy would be applied to them.

3.1 Code requirements

Sections 80 and 81 of the Code contains the key provisions relating to capital contributions

80 Capital contributions principles

- (1) The capital contributions and charges covered by this Chapter are to be established by the network provider in accordance with the principles in this Chapter.
- (2) An access applicant or network user may be required to make a capital contribution towards the extension of connection equipment or network system assets only if the network provider can demonstrate that the extension is not commercially viable without that capital contribution.
- (3) For the purpose of subclause (1), an extension is commercially viable if:
 - (a) the network provider can be reasonably expected to recover within a reasonable time the costs, the capital investment and a reasonable rate of return on the capital investment of that extension and not increase the tariffs and charges payable by existing network users; and
 - (b) the network provider can be reasonably expected to obtain the necessary financial capital to fund that extension, from internal reserves or via new borrowings, on reasonable terms and conditions.
- (4) The value of the capital contribution should be equal to no more than the amount that would be required to make the extension commercially viable.
- (5) The capital contribution must be made to the network provider in the manner and at the time set out in the access agreement.
- (6) The reasonable rate of return on the capital investment associated with the proposed extension required in

⁶ PWC's, Capital Contributions Principles and Methods Statement Policy, March 2013.

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subclause (3) is to be established by the network provider taking into account:

- (a) the network provider's cost of capital and its components, determined in a manner consistent with Schedule 8;
 - (b) the potential future use of the extension by existing and potential users; and
 - (c) the financial viability of the access applicant and the applicant's business at that location.
- (7) The reasonable time within which the costs, the capital investment and a reasonable rate of return on the capital investment in respect of a proposed extension must be recovered as required in subclause (3) is to be established by the network provider taking into account:
- (a) the anticipated commercial life of the extension; and
 - (b) the purpose for which the applicant requires the network capacity the subject of the access application.
- (8) The reasonable terms and conditions upon which funding is to be obtained to finance the proposed extension as required in subclause (3) are to be established by the network provider taking into account:
- (a) the anticipated effect of any increased borrowing upon the network provider's cost of borrowings; and
 - (b) the availability of debt funding for those purposes and the covenants that prospective lenders might require in support of any borrowings.

81 Role of regulator

- (1) The broad application by the network provider of the principles set out in this Chapter will be overseen by the regulator.
- (2) Prior to commencement of each regulatory control period or to the network provider's coverage by this Code, the network provider must provide to the regulator a draft statement providing details of principles and methods for establishing capital contributions under this Chapter.
- (3) The regulator must approve the statement for use by the network provider unless, in the opinion of the regulator, the statement does not comply with the requirements in this Chapter or is inconsistent with requirements elsewhere in this Code.

In relation to information provision there is no equivalent of clause 78(b) in relation to capital contributions, but again we note that clause 63(d) 'regulatory accountability through transparency' may apply, depending on the legal interpretation of this clause.

3.2 Balancing the complexity of capital contributions policies with the provisions of the Code

Capital contributions policies are a relatively complex area of charging. There are a variety of different capital contribution charging methods that have been used in different jurisdictions. Thus, while we have outlined our considerations in this letter, in several areas it is ultimately a matter of judgement, rather than fact, as to whether PWC's policy does or does not meet the provisions of the Code. This is primarily because it may be almost impossible to satisfy every provision of the Code to the full extent, and in almost all cases the more reflective that customer contributions become, the more complex it is for customers to understand and the more costly to implement it becomes. We note that one of the objectives of price regulation (s. 63) is an efficient and effective regulatory environment and that s.74 (1)(c) (although it does not directly apply to capital contributions) requires a balancing of 'the quest for detail against the administrative costs of doing so'.⁷

3.3 The capital contributions calculation

Under the Code, a customer may be required to make a capital contribution if PWC can demonstrate that the extension is not commercially viable without the capital contribution. An extension is commercially viable if PWC can be reasonably expected to recover within a reasonable time the costs, capital investment and a reasonable rate of return and not increase the tariffs and charges payable by existing network users. The value of the capital contribution should not be more than the amount to make the extension commercially viable.⁷

Under PWC's policy, a capital contribution is calculated as:

⁷ Electricity Networks (Third Party Access) Code, section 80(2)-(4).
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(The present value of attributed costs of connection) less (The present value of a customer's expected revenue less Shared network costs), or expressed more simply:

Attributed costs + shared costs – revenue

This means that a customer's capital contribution is reduced by the (net present value of) expected revenue that the customer is expected to pay to PWC over the life of the connection through tariffs. This is a common approach to determining capital contributions.⁸ Under PWC's calculation, a customer's expected revenue, however, is reduced by the 'shared network costs' (calculated as 50 per cent of the expected revenue). This effectively means that customers contribute to the existing shared network in addition to paying for their dedicated connection costs and the incremental costs of any new shares connection assets that are designated to the particular connection (that is, the 'attributed costs of connection').

Generally, we consider that customers who connect to the network place costs on the shared network that are additional to the 'attributed costs of connection'. For example this could take the form of increasing load, and hence imposing costs on upstream assets such as transformers or transmission lines (but not so much that the load is outside the planning horizon of these assets, in which case they would become 'attributed costs of connection'). Thus while we are not aware of this approach being common practice, it appears reasonable.⁹

We have reviewed the calculation methodology that PWC used to determine the 'shared network costs', being 50 per cent of the expected revenue. PWC outlined that the methodology is similar to the concept employed by Ergon Energy (which uses 2 per cent to 80 per cent depending on the location) and some other interstate utilities. The methodology is based on the proportion of upstream shared assets to the proportion of downstream assets that are normally subject to a capital contributions policy. In effect, this methodology means that the 'shared network costs' represent only the upstream shared network components and not the network components that have been funded by other customers by way of incremental revenue or capital contributions, in the past. This methodology appears reasonable.

To better promote the Code's provisions that capital contributions recover only the amount to make the connection commercially viable, when calculating expected revenue, regard could be had to which upstream shared assets the customer would use. This adds complexity by requiring a different 'shared network cost' calculation for each customer (or more likely, for each large customer). This principle was applied by the Australian Energy Regulator in its Connection Charge Guideline. It stated, 'to the extent that a particular network component has been included as a customer specific cost, or if the connection does not require a particular network component, these components will not be included in the calculation of the unit rate(s) for shared network augmentation'.¹⁰

In the extreme case, by way of example, some customers (for example mines) may need to be connected directly to high voltage lines and require only dedicated connection assets. In this case, it would not be appropriate to reduce these customers' expected revenue for shared network costs, because they would not impose a cost on the existing shared network. If a reduction to expected revenue was made, these customers' capital contributions would be more than the amount to make their extensions commercially viable.

3.4 The connection term for Small Individual Network Users

The Code outlines that the reasonable time within which the costs, the capital, investment and a reasonable rate of return in respect of a proposed extension is to be established by PWC taking into account:¹¹

- The anticipated commercial life of the extension, and
- The purpose for which the applicant requires the network capacity the subject of the access application

⁸ See for example the connection policies of, Ergon Energy <https://www.ergon.com.au/__data/assets/pdf_file/0010/6310/Ergon-Capital-Contribution-Methodology-April-05.pdf>, the ESCV's Guideline No. 14 <<http://www.esc.vic.gov.au/getattachment/b57f7430-0352-4eba-ae98-0995c99511cd/Electricity-Industry-Guideline-No-14.pdf>> and the AER's connection charge guideline <<http://www.aer.gov.au/sites/default/files/AER%20-%20connection%20charge%20guideline%20-%202020%20June%202012.pdf>>

⁹ PWC outlined that the approach is adopted by Ergon Energy and some other interstate DNSPs. We are not aware of it being used outside the Queensland jurisdiction.

¹⁰ AER, Connection charge guidelines for electricity retail customers; Under chapter 5A of the National Electricity Rules, June 2012.

¹¹ Electricity Networks (Third Party Access) Code, section 80(7).

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We consider that PWC has not clearly demonstrated how it has taken the above provisions of the Code into account, and notably that the assumed 15 year connection life for Small Individual Network Users may be too short and inconsistent with the Code. In reaching this view, we have reviewed PWC's Capital Contribution's Policy, and PWC's responses to the Utilities Commission's questions and our questions.¹²

We note that in the context of calculating capital contributions, a 15 year connection life does not imply that small customers are expected to remain at a particular residence for 15 years. Rather, it implies that the electricity connection (to that residence) is likely to be used for 15 years.

In response to the Commission's questions, PWC identified only one other utility that applies a 15 year connection life to small customers, Western Power. PWC outlined that Queensland utilities currently applies a 20 year connection life and Victorian utilities currently apply a 30 year connection life. We note that in the future, all utilities operating in the National Electricity Market will adopt a 30 year connection life for residential customers in accordance with the AER's Connection Charge Guideline.¹³ In developing the guideline, the AER considered:¹⁴

‘...it would not be likely that a residential premise would be used for less than 30 years. Even if an existing house is rebuilt, the network asset can be reused. Therefore, the AER does not consider a 20 year connection life, as proposed by Energex and Ergon, or ETSA's proposal for a lower revenue estimate, to be appropriate.’

We consider that having regard to the provisions of the Code, residential customers (which according to PWC's policy includes Small Individual Network Users and some Large Individual Network Users) would have an expected connection life longer than large customers, and longer than 15 years. In our opinion:

- The life of connection assets such as transformers is likely to be significantly greater than 15 years,
- These assets are typically depreciated over a period longer than 15 years (they are usually depreciated over a time period representing their life)¹⁵
- Residential customers are likely to use a connection for greater than 15 years.

In responding to our information requests, PWC outlined that the difference between 15 and 30 years is not significant in present value terms and that the difference is commensurate with the other uncertainties involved in the capital contributions calculation. We acknowledge PWC's response and draw attention to our earlier comments that there is a balance between complexity and the extent to which the Code's provisions are applied.¹⁶ Nevertheless, having regard to s 80(7) of the Code as well as the AER's position, we consider that a greater connection life, possibly 30 years, should be adopted for residential users.

3.5 The proportion of the costs paid by network users

As mentioned, the Code outlines that the amount of a capital contributions should be equal to no more than the amount that would be required to make the extension commercially viable. Additionally, the Code outlines that the reasonable rate of return on the capital investment is to be established taking into account the potential future use of the extension by existing and potential users.¹⁷

Under PWC's Capital Contribution Policy, customers pay for the full amount of the 'attributed costs of connection' (albeit the capital contribution portion is offset by expected revenue) over 15 years (or 30 years as proposed by us). Many connection assets, however, have a life of over 15 (or 30) years. Where the connection asset is likely to be stranded after this time, then it may be appropriate to charge customers for their full 'attributed costs of connection'. However, in some circumstances, connection assets (such as a transformer) can be reused. Additionally, after a

¹² PWC, Capital Contributions Policy, March 2013. PWC, Queries on Revised Networks Capital Contribution Policy. PWC, Responses to the AER's questions, 20 November 2013 and 22 November 2013.

¹³ AER, Connection charge guidelines for electricity retail customers; Under chapter 5A of the National Electricity Rules, June 2012.

¹⁴ AER, Explanatory Statement: Connection charge guidelines; under chapter 5A of National Electricity Rules, 2012.

¹⁵ For example, PWC's proposes standard asset lives for Zone Substations, Transmission Lines, Distribution Mains, and Distribution Substations of 42, 57, 56 and 45 years respectively. PWC, revenue model.

¹⁶ According to PWC's calculations, the difference between expected revenue with a 15 and 30 year connection life is around 36 per cent. We consider this amount is not insignificant..

¹⁷ Electricity Networks (Third Party Access) Code, section 80(4) and 80(6)
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particular customer is assumed to leave the network, the resultant freed capacity can be used for other customers. In developing its connection charge guideline the AER outlined:¹⁸

'Where a customer will use an asset for less than its expected useful life, and where a DNSP would reasonably be expected to reuse some of this capacity once that customer leaves the network, each customer should only be charged for the period for which it is using the asset.'

The AER noted this issue in its review of the benchmark upstream augmentation charge rates for CitiPower's network:¹⁹

"As upstream assets can be used by multiple customers and the same asset could be used by future new customers once the earlier customers stop using such assets at the end of their connection life, it is not equitable for the first new customer to fund the full cost of upstream augmentation..."

...The charges paid (in respect of the augmentation of a given asset) by previous, current and future new customers should be equal in real terms. A methodology that does not take this into account would result in an intertemporal transfer of wealth and would be inequitable for some customers."

As a result the AER included the following in its connection charge guideline:

'In calculating the applicable unit rate(s), a distribution network service provider must take account of the cost of augmenting each network component with reference to:

(a) The proportion of each network component used by the connection applicant; and

(b) The useful life of the network component and the assumed period for which the connection applicant will be using the network'

By not accounting for capacity that can be used by other customers once a customer no longer uses its connection, and that some assets can be reused (and hence the costs of connection may not need to be recovered from the sole connection applicant) a capital contribution may be in excess of the charge that makes it commercially viable.

In response to our information requests, PWC outlined that there would not be many instances where an asset could be reused, and if an asset could be reused, it is not certain whether PWC would have a use for it. We acknowledge PWC's response and draw attention to our earlier comments that there is a balance between complexity and the extent to which the Codes' provisions are applied. Nevertheless, having regard to the Code - and particularly s.80(6)(b) which requires the potential future use of the extension by existing and potential users to be taken into account, we consider that customers should not be charged for the full cost of the connection assets where assets could be reused.

3.6 Additional information to aid connecting customers

There is some additional information that PWC should outline in its guideline to aid customers that are seeking to connect to its network. Some of this information will also assist the Commission determine whether PWC's policy is consistent (or not) with the Code. We have outlined some of the areas where we believe PWC should include additional information below.

We sought information from PWC on how it will determine whether projected operating and maintenance expenses are significant and will hence be included in the capital contribution calculation. PWC's response included that it expected such costs would be recovered for customers needing a lengthy new high voltage or transmission line connection, or where a new zone substation is required. While we consider PWC's response to be satisfactory, we also consider that more guidance could be provided in the Capital Contributions Policy.

We sought clarification from PWC on how capital contributions would be calculated for above standard connections. From an initial reading of section 11 of PWC's policy, it appears that customers who request above standard connections would pay for the full cost of the connection without an 'expected revenue' offset. PWC clarified that the offset would apply to costs attributable to the standard connection, and the incremental cost above the standard connection would be funded by the customer. PWC outlined that it would clarify this aspect when it submits a revised policy. We agree with the approach that PWC outlined in its response, and we note that the approach is consistent with other jurisdictions' and the AER's policies.

¹⁸ AER, Explanatory Statement: Connection charge guidelines; under chapter 5A of National Electricity Rules, 2012.

¹⁹ Guidance Paper, The AER's Conclusion on the Benchmark Upstream Augmentation Charge Rates for CitiPower's Network, 25 June 2010, p. 11.

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Member of Deloitte Touche Tohmatsu Limited

Although we did not raise the issue with PWC, it may be useful for PWC to clarify whether its Cost-Sharing Rebate policy applies to only extending the existing networks or also upgrading the capacity of the existing network.

Additionally, it is not clear from PWC's policy how the present value of expected revenue will be calculated. We suggest that, as outlined by the AER, PWC use the price path outlined in the determination that is applicable at the time of the connection offer until the end of the relevant determination, and inflate expected revenue by CPI thereafter. The method adopted should be outlined in the Capital Contributions Policy.

3.7 Summary

PWC's Capital Contributions Policy addresses many of the points outlined in the Code. However, some sections of the policy are arguably inconsistent with the Code, including sections 80(6) and 80(7). To address these inconsistencies we recommend:

- using a 30 year connection life for residential users
- that customers not be charged for the full cost of a connection if other customers can benefit from the connection at that time or in the future.

Additionally, there are areas of PWC's policy that do not necessarily contain all the information to demonstrate to the Commission that the policy complies with the Code. We have outlined these areas above. We recommend that PWC include more information in its Capital Contributions Policy.

Appendix A – relevant NER provisions

NER Pricing Principles s 6.18.5:

- (a) For each tariff class, the revenue expected to be recovered should lie on or between:
 - (1) an upper bound representing the stand alone cost of serving the retail customers who belong to that class; and
 - (2) a lower bound representing the avoidable cost of not serving those retail customers.
- (b) A tariff, and if it consists of 2 or more charging parameters, each charging parameter for a tariff class:
 - (1) must take into account the long run marginal cost for the service or, in the case of a charging parameter, for the element of the service to which the charging parameter relates; and
 - (2) must be determined having regard to:
 - (i) transaction costs associated with the tariff or each charging parameter; and
 - (ii) whether retail customers of the relevant tariff class are able or likely to respond to price signals.
- (c) If, however, as a result of the operation of paragraph (b), the Distribution Network Service Provider may not recover the expected revenue, the provider must adjust its tariffs so as to ensure recovery of expected revenue with minimum distortion to efficient patterns of consumption.

NER Principles governing assignment or re-assignment of retail customers to tariff classes and assessment and review of basis of charging (s. 6.18.4):

- (a) In formulating provisions of a distribution determination governing the assignment of retail customers to tariff classes or the re-assignment of retail customers from one tariff class to another, the AER must have regard to the following principles:
 - (1) retail customers should be assigned to tariff classes on the basis of one or more of the following factors:
 - (i) the nature and extent of their usage;
 - (ii) the nature of their connection to the network;
 - (iii) whether remotely-read interval metering or other similar metering technology has been installed at the retail customer's premises as a result of a regulatory obligation or requirement;
 - (2) retail customers with a similar connection and usage profile should be treated on an equal basis;
 - (3) however, retail customers with micro-generation facilities should be treated no less favourably than retail customers without such facilities but with a similar load profile;
 - (4) a Distribution Network Service Provider's decision to assign a customer to a particular tariff class, or to re-assign a customer from one tariff class to another should be subject to an effective system of assessment and review.

Note:

If (for example) a customer is assigned (or reassigned) to a tariff class on the basis of the customer's actual or assumed maximum demand, the system of assessment and review should allow for the reassignment of a customer who demonstrates a reduction or increase in maximum demand to a tariff class that is more appropriate to the customer's load profile.

- (b) If the charging parameters for a particular tariff result in a basis of charge that varies according to the usage or load profile of the customer, a distribution determination must contain provisions for an effective system of assessment and review of the basis on which a customer is charged.