



2014-2019 NETWORK PRICE DETERMINATION

DRAFT DETERMINATION

December 2013

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Call for submissions

Submissions are invited from interested parties concerning the issues raised in this Draft Determination.

Submissions should be directed in the first instance to:

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The closing date for submissions is **Monday 10 March 2014**.

Confidentiality

In the interests of transparency and to promote informed discussion, the Commission will generally make submissions publicly available.

Persons wishing to submit confidential information should:

- clearly identify the relevant sections of the submission that are confidential, so that the remainder of the document can be made publicly available; and
- provide a copy of the submission suitable for publication with any confidential material removed.

Confidential information is defined in section 26 of the *Utilities Commission Act* as information that could affect the competitive position of a licensed entity or other person or is commercially sensitive for some other reason.

Public access to submissions

Subject to the above, submissions will be made available for public inspection at the office of the Commission and on its website (www.utilicom.nt.gov.au).

To facilitate publication on the Commission's website, submissions should be made electronically by disk or email. However, if this is not possible, submissions can be made in writing.

Glossary of terms

Term	Definition
2009 NPD	The Commission's 2009 Network Price Determination, published in March 2009 ¹
ABS	Australian Bureau of Statistics
ACOD	Average circuit outage duration, a measure of reliability for distribution networks
AER	Australian Energy Regulator
ATOD	Average transformer outage duration, a measure of reliability for transmission networks
Building block	The sum of underlying components or "building block" consisting of return on capital, return of capital, operating expenditure, and various other components as a mechanisms for a forward looking review of expected reasonable expenditure
CAM	Cost allocation method
Capex	Capital expenditure. Expenditure on large cost items that are capitalised in the networks accounts and for which PWC may expect to earn a rate of return on investment and of investment (depreciation). For example, capex may include expenditure on items such as plant and equipment, poles and wires, vehicles and facilities.
Commission	Utilities Commission of the Northern Territory established in April 2000 in accordance with the <i>Utilities Commission Act</i>
CPI	Consumer price index
Cost pass through	A provision made in a price determination to adjust the determination as it applies in any year of the price period to take into account unforeseen, or foreseen but unquantified, material events that arise in the course of the price period. Such events may be a result of changes in statute, government policies or directions or material changes in the costs of delivering services which, if occurring before the determination, would have been included in the Commission's consideration at the time of the determination.
Current regulatory control period	The third regulatory control period from 1 July 2009 to 30 June 2014
Deloitte	Deloitte Economics and Infrastructure Advisory

¹ Utilities Commission, [Final Determination Networks Pricing: 2009 Regulatory Reset](#), March 2009.

Term	Definition
DNSP	Distribution network service provider
DORC	Depreciated optimised replacement cost being the replacement cost of the existing fixed system assets with modern equivalent assets, depreciated by a straight-line depreciation methodology according to the age of the existing asset relative to the expected total life of the existing asset
DRP	Debt risk premium
ESS Code	Electricity Standards of Service Code which took effect from 1 December 2012. New standards established under the Code took effect from 12 July 2013
FCO	Frequency of circuit outage, a measure of reliability for transmission networks
Forthcoming regulatory control period	The fourth regulatory control period from 1 July 2014 to 30 June 2019
Framework statement	The Commission's final decision on the framework and approach for the 2014 Network Price Determination ² , published November 2012
FTO	Frequency of transformer outages, a measure of reliability for transmission networks
GSL	Guaranteed service level
GSL Code	Guaranteed Service Level Code which took effect from 1 January 2012
GWh	Gigawatt hour
kVA	Kilo-volt amperes
kVAr	Kilo-volt amperes reactive
MAR	Maximum allowable revenue
MWh	Megawatt hour
NCCP	Networks Capital Contributions Policy
NEL	National Electricity Law
NEM	National Electricity Market
NER	National Electricity Rules ³

² Utilities Commission, [2014 Network Price Determination: Framework and Approach Decision Paper](#), November 2012.

³ The version of the National Electricity Rules used by the Commission for the purposes of this Consultation Paper is the National Electricity Rules Version 49 which commenced from 5 April 2012. This is the version of the NER that was in effect at the commencement of the 2014 Network Price Determination process.

Term	Definition
NPPS	Networks Pricing Principles Statement
NPV	Net present value
NTCOSS	Northern Territory Council of Social Services
NTMEU	Northern Territory Major Energy Users
NT Network Access Code	Electricity Networks (Third Party Access) Code, which is a schedule to the <i>Electricity Networks (Third Party Access) Act</i>
NTRM	Northern Territory Revenue Model, which is the AER's PTRM modified to the minimum extent necessary to use a pre-tax approach
Opex	Operating and maintenance expenditure. Opex consists of expenditure on the delivery of electricity transport services using the network and may include such items as staff costs, repairs and maintenance of plant and equipment, taxes and financing fees and charges.
PB	Parsons Brinckerhoff Strategic Consulting
PCNT	Property Council of Australia – Northern Territory Division
Previous regulatory control period	The second regulatory control period from 1 July 2004 to 30 June 2009
PTRM	Post-tax revenue model
PWC	Power and Water Corporation
PWC Generation	Generation business division of PWC
PWC Networks	Networks business division of PWC
PWC Retail	Retail business division of PWC
PWC System Control	System control business division of PWC
RAB	Regulatory asset base
Regulatory control period	The period between major price reviews during which time the methodology used in setting prices is held constant
RFM	Roll forward model
RIN	Regulatory Information Notice, issued under the relevant regulator's powers to request information, sets out the detailed information that is required to be submitted by the regulated entity
SAIDI	System average interruption duration index, a measure of reliability for distribution networks
SAIFI	System average interruption frequency index, a measure of reliability for distribution networks

Term	Definition
Side constraint	A controlling effect on price movements to minimise the volatility and reduce the commercial uncertainty for users. Effectively a limit on annual reference tariff revenue changes
SKM	Sinclair Knight Mertz
SLA	Service level agreement
Solar PV	Photovoltaic installations
SORI	Statement of Regulatory Intent (published by the AER)
STPIS	Service target performance incentive scheme
TFP	Total factor productivity based approaches rely on the estimation of industry wide productivity trends to determine the X-factor under a CPI-X approach as part of price cap incentive regulation
X-Factor	Amount by which a DNSP is allowed to escalate network access tariffs (on average) relative to the rate of consumer price inflation. The X-factor is often referred to as a productivity or efficiency factor
WACC	Weighted average cost of capital – The rate of return for a [network service provider] for a regulatory control period is the cost of capital as measured by the return required by investors in a commercial enterprise with a similar nature and degree of non-diversifiable risk as that faced by the [network] business of the provider ⁴

⁴ Clauses 6.5.2(b) and 6A.6.2(b) NER.

CHAPTER 1

Executive Summary

- 1.1 Under the Electricity Networks (Third Party Access) Code (NT Network Access Code), which is a schedule to the *Electricity Networks (Third Party Access) Act*, the regulator is required to set the revenues that the network service provider can recover, or prices that can be charged, for the provision of regulated network access services.⁵
- 1.2 In the Territory, the regulator for the purposes of the NT Network Access Code is the Utilities Commission of the Northern Territory (the Commission) and the licensed network provider is the networks business division (PWC Networks) of the Power and Water Corporation (PWC).
- 1.3 This document provides the Commission's Draft Determination and constituent draft decisions for the network charges able to be levied by PWC Networks for the five-year regulatory control period 1 July 2014 to 30 June 2019 (the forthcoming regulatory control period). This is the fourth regulatory control period for which the Commission has made such a determination in accordance with the NT Network Access Code.⁶
- 1.4 The NT Network Access Code requires the Commission to determine the revenue or price cap to apply during the forthcoming regulatory control period in a manner that, in the Commission's opinion, most effectively achieves the desired outcomes set out in the Code and is consistent with generally accepted regulatory practice at this time.
- 1.5 In the Commission's opinion, generally accepted regulatory practice for electricity network price determinations in Australia is the process undertaken by the Australian Energy Regulator (AER) in accordance with the National Electricity Law (NEL) and Chapter 6 of the National Electricity Rules (NER). Accordingly, the Commission has made this determination having regard to those requirements.
- 1.6 Resourcing constraints for PWC Networks and economies of scale have meant that full adoption of an approach consistent with the NER requirements has not been practicable for the forthcoming regulatory control period. However, the Commission believes that full compliance with these requirements is an appropriate objective for future regulatory control periods. The Commission considers that working towards alignment with industry best practice, demonstrated in national arrangements for electricity network price determinations, is in the long-term interest of Territory electricity consumers.

⁵ NT Network Access Code clause cl.66.

⁶ First regulatory control period 1 July 2001 to 30 June 2004, secondSecond regulatory control period 1 July 2004 to 30 June 2009, thirdThird regulatory control period (current) 1 July 2009 to 30 June 2014.

Review process

- 1.7 The review process commenced with the release of a Consultation Paper in June 2012⁷ on the possible options underlying the determination process, and providing the Commission's preliminary position with respect to various aspects of the framework and approach. The Commission's Framework Statement setting out its final decision on the framework and approach was released in November 2012.⁸
- 1.8 Following the publication of the Commission's Framework Statement, the Commission worked closely with PWC Networks to develop an appropriate set of information to be provided by PWC Networks to enable the Commission to assess its regulatory proposal against the requirements of the NT Network Access Code and the NER.
- 1.9 The Commission agreed to a staged provision of information as part of PWC Networks' regulatory proposal. PWC Networks provided information progressively from May 2013, with the formal regulatory proposal being submitted in September 2013. PWC Networks' regulatory proposal was published on the Commission's website and comment sought from stakeholders. The Commission received five submissions in response to the proposal from PWC Networks⁹ and these have been considered as part of this draft decision.
- 1.10 The Commission's examination of the PWC Networks' regulatory proposal has also been informed by consultant advice on various aspects of the determination process and on the regulatory proposal and supporting data supplied by PWC Networks.
- 1.11 In making its draft decision and draft network price determination, the Commission has assessed PWC Networks' regulatory proposal in accordance with the requirements of the NT Network Access Code and with relevant provisions of the NER. The Commission also considered the past performance of PWC Networks and the effectiveness of its policies and procedures in the development of its regulatory proposal.
- 1.12 In accordance with the NER and as identified in the Framework Statement, the Commission has applied a forward-looking building block approach in the estimation of the revenue requirements for PWC Networks for the forthcoming regulatory control period. The building block approach includes an allowance for operating and maintenance expenditure, an appropriate return on the regulatory asset base (which includes an allowance for capital expenditure during the period), and regulatory depreciation. The Commission's expenditure assessments are based on tests of prudence and efficiency.
- 1.13 The Commission's determination includes the three regulated networks of Darwin-Katherine, Alice Springs, and Tennant Creek, and incorporates both transmission and distribution networks.

⁷ Utilities Commission, [2014 Network Price Determination: Framework and Approach Consultation Paper](#), June 2012.

⁸ Utilities Commission, [2014 Network Price Determination: Framework and Approach Decision Paper](#), November 2012.

⁹ A full list of submissions received can be found in Appendix D.

Outcome of regulatory process

- 1.14 The Commission has established annual revenue requirements for PWC Networks for the forthcoming regulatory control period based on the Commission's decisions for the various elements of the building block.
- 1.15 The Commission's Draft Determination is that total revenue for the forthcoming regulatory control period able to be earned by PWC Networks through network charges for standard control services is \$1,074.0 million (nominal), plus an additional \$42.2 million (nominal) carried over from the pass through of costs arising from the implementation of the Davies Review recommendations approved by the Commission in May 2013 in accordance with the Commission's network price determination for the 2009-2014 regulatory control period¹⁰.
- 1.16 The approved total revenue is \$109.8 million less than the \$1,183.7 million (exclusive of the cost pass through) sought by PWC Networks in its regulatory proposal.
- 1.17 The Commission has established a revenue path, of the CPI-X form, that is consistent with the approved total revenue amount. Under the approved revenue path, PWC Networks' allowed revenues would increase in nominal terms by 43.42 per cent in 2014-15 compared to the preceding year, of which 5.37 per cent is the effect of the cost pass through. For each of the remaining four years of the regulatory control period, PWC Networks' revenues would increase in nominal terms by the Consumer Price Index (CPI) plus 1 per cent per annum. Network prices are expected to increase on average by a lower rate, reflecting the partially offsetting effect of higher energy consumption.
- 1.18 The specific circumstances faced by PWC Networks which justify these price increases are discussed in this draft decision.
- 1.19 The Commission has considered individual projects and lines of expenditure in determining PWC Networks' efficient funding requirements for the forthcoming regulatory control period. However, the Commission's determination relates to the total revenue that can be recovered from customers. It is a matter for PWC Networks to manage its expenditures to ensure that it maintains quality, reliability, safety and security of electricity supply, and complies with its regulatory and other obligations.
- 1.20 A summary of the key constituent draft decisions underpinning the Commission's Draft Determination of revenue requirements for PWC Networks for the forthcoming regulatory control period is outlined later in this Executive Summary. Further details are provided in relevant chapters of this document. The Commission's draft decision also extends to pricing principles and secondary price controls to be applied by PWC Networks in the specification of annual network tariffs, and procedures to be used in the determination of charges for network extensions and augmentations.

Impact on customers

- 1.21 Network charges are generally paid by electricity retailers (including PWC Retail) to PWC Networks, and represent one component of bundled electricity charges, which also include generation, system operation and retail charges.

¹⁰ Utilities Commission, [Cost pass through application – Final determination](#), May 2013

- 1.22 For small and medium size customers (those consuming less than 750MWh of electricity per annum), retail tariffs are regulated by a Pricing Order which sets the maximum amount that PWC Retail is able to charge these categories of customers. A change to the network price as a result of the Commission's network price determination will not impact the current Pricing Order.
- 1.23 For customers on negotiated contracts for supply (for example, large customers consuming more than 750MWh of electricity per annum), the size and timing of the impact of changes in network charges on retail tariffs will generally depend on individual contract terms and conditions with respective retailers. However, for customers using between 750MWh and 2GWh per annum, there is currently a Pricing Order in place that limits the rate at which PWC can increase an individual customer's retail tariff.

Key expenditure drivers and considerations

- 1.24 The main drivers of the increase in required network revenue are increased operating and maintenance expenditure, and an increase in the allowable depreciation expense.
- 1.25 The Commission considered that the revenue approved in March 2009 for the current regulatory control period provided sufficient funding for PWC Networks to operate and maintain the network, based on PWC Networks' practices at the time. However, since that time, various shortcomings in PWC Networks' policies, practices and procedures have been identified.
- 1.26 The Davies Review¹¹, found that PWC Networks did not have in place systems and processes to collect and analyse the necessary information to allow it to appropriately manage and maintain its network assets, and thus lacked the systems and knowhow required to implement alternative approaches being adopted throughout the industry elsewhere. During the current regulatory control period, PWC Networks has increased its operating and maintenance expenditure as it moves from a 'run to fail' asset management regime to a condition-based asset management regime with increased focus on condition monitoring and preventative maintenance.
- 1.27 The Commission made some allowance for remedial capital, operating and maintenance expenditure associated with implementation of the Davies Review recommendations through the cost pass through approved in May 2013. The Commission did not, however, approve the full amount sought by PWC Networks for what it claimed were
- ...substantial enhancements made to the network asset management regime and the embedding of an improved maintenance cycle culture within PWC, as espoused in the Davies Review recommendations.*¹²
- 1.28 The Commission considered that PWC Networks had not provided the rigorous and detailed analysis of the actual activities undertaken, the issues these activities are

¹¹ [Independent Enquiry into Casuarina Substation Events and Substation Management across Darwin – Final Report](#), February 2009.

¹² Power and Water Corporation, [Network Cost Pass Through Application – Response to the Commission's request for further information](#), February 2013, page 2.

intended to address and an assessment as to whether the objectives have been, or are likely to be, achieved.

- 1.29 In its regulatory proposal, PWC Networks provided detailed justification for increased resources necessary to achieve a more strategic focus on its asset management function and essential related matters, such as operating requirements, safety and training. PWC Networks also noted that additional personnel were required to plan and deliver a robust condition-based preventative maintenance program, consistent with the broader recommendations provided by the Davies Review.
- 1.30 The Commission's determination provides PWC Networks with operating expenditures at a similar level to its actual expenditure in the current regulatory control period, recognising the step change that has occurred since 2009, but provides little further increase. Any additional expenditure requirements would need to be funded through efficiency improvements or by reallocation of funds from other areas.
- 1.31 The second main component of the increase in required revenue is the depreciation allowance. In the 2009 Network Price Determination (2009 NPD), the annual inflation effect on the opening regulatory asset base (RAB) was greater than nominal straight line depreciation, so that regulatory depreciation resulted in a reduction in revenue. This effectively assumed that PWC Networks' RAB has a significant proportion of its economic life remaining.
- 1.32 PWC Networks has reviewed asset lives, with the assistance of technical consultants, to reflect a more appropriate age profile for the RAB, resulting in an increase in the regulatory depreciation allowance to a level more consistent with that allowed for other distribution network service providers (DNSPs).

Summary of constituent decisions

Classification of services (refer Chapter 4 of this document)

- 1.33 PWC Networks proposed to vary the classification of services specified in the Framework Statement by adding new alternative control services for investigation and testing services, provision of non-standard streetlight assets and provision of network capacity in excess of Network Technical Code requirements.
- 1.34 The Commission accepts PWC Networks' proposal to add a new alternative control service for non-standard streetlight assets. The Commission does not accept PWC Networks' proposal to add new alternative control service for investigation and testing services, classifying this as an unregulated service. The Commission does not accept PWC Networks' proposal to add a new alternative control service for provision of network capacity in excess of Network Technical Code requirements, as these costs are recouped through the revenue cap for standard control services.
- 1.35 The Commission has also clarified the descriptions of some services.
- 1.36 The Commission's determination of Excluded Services is set out in Appendix A of this draft decision.

Control mechanism (refer Chapter 5 of this document)

- 1.37 The Framework Statement specified that the Commission would apply a revenue cap control mechanism of a CPI-X form to standard control services provided by PWC Networks. It also indicated that annual adjustments to the annual revenue allowance would be provided for any:
- under or over recoveries; and
 - cost pass throughs approved by the Commission during the forthcoming regulatory control period.
- 1.38 The Commission's Draft Determination has been developed on this basis.
- 1.39 As part of its pricing proposals to be submitted in accordance with clause 78(1) of the NT Network Access Code for each year of the regulatory control period, PWC Networks must submit to the Commission proposed tariffs and charging parameters which lead to expected revenues consistent with the formula set out below:

$$\sum_{i=1}^n \sum_{j=1}^m p_t^{ij} \times q_t^{ij} \leq R_{t-1} \times (1 + CPI_t) \times (1 - X_t) \times (1 \pm \text{passthrough}_t) \pm \Delta R_t$$

where:

R_{t-1}	is the revenue in year $t-1$
CPI_t	is the annual percentage change in the ABS Consumer Price Index All Groups, Weighted Average of Eight Capital Cities from March in regulatory year $t-2$ to March in regulatory year $t-1$
X_t	is the allowed real change in revenue from year $t-1$ to year t of the regulatory control period as determined by the Commission
Passthrough	is any pass through amount in year t determined by the Commission, expressed as a percentage of the annual revenue
ΔR_t	is the overs and unders adjustment to revenue in year t
n	is the number of network tariffs
m	is the number of tariff components
p_t^{ij}	is the price of component i of tariff j in year t
q_t^{ij}	is the forecast volume of component i of tariff j in year t

- 1.40 PWC Networks proposed that a side constraint of 2 per cent on any increase in weighted average revenue of each tariff class would apply in any regulatory year.
- 1.41 The Commission's draft decision is that a side constraint of 2 per cent proposed by PWC Networks is appropriate but requires that for customers using more than 750MWh per annum, the side constraint is to be applied with respect to each individual customer, rather than to the tariff class as a whole.
- 1.42 In its annual pricing proposals, PWC Networks will be required to demonstrate that its proposed prices for the next year will meet the side constraints formula for the tariff class of customers using less than 750MWh per annum and for individual customers using more than 750MWh per annum, as specified in this draft decision and consistent with the formula set out below:

$$\frac{\sum_{j=1}^m p_t^j \times q_{t-2}^j}{\sum_{j=1}^m p_{t-1}^j \times q_{t-2}^j} \leq (1 + CPI_t) \times (1 - X_t) \times (1 + Y_t) \times (1 \pm \text{passthrough}_t)$$

where:

CPI_t	is the annual percentage change in the ABS Consumer Price Index All Groups, Weighted Average of Eight Capital Cities from March in regulatory year $t-2$ to March in regulatory year $t-1$
X_t	is the allowed real change in revenue from year $t-1$ to year t of the regulatory control period as determined by the Commission
Y_t	is the side constraint on revenue recovered from a tariff class or customer from year $t-1$ to year t of the regulatory control period as determined by the Commission
<i>Passthrough</i>	is any pass through amount in year t determined by the Commission, expressed as a percentage of the annual revenue
m	is the number of tariff components
p_t^j	is the proposed price for component j of the tariff class in year t
p_{t-1}^j	is the price charged for component j of the tariff class in year $t-1$
q_{t-2}^j	is the actual volume of component j of the tariff class in year $t-2$

Opening RAB (refer Chapter 7 of this document)

- 1.43 PWC Networks proposed an opening RAB for the forthcoming regulatory control period of \$930.1 million as at 1 July 2014, based on a depreciated optimised replacement cost (DORC) valuation of \$856.2 million as at 1 July 2013, rolled forward for one year.
- 1.44 The Commission has accepted the opening RAB proposed by PWC Networks, being \$930.1 million as at 1 July 2014.

Reliability standards (refer Chapter 9 of this document)

- 1.45 PWC Networks' regulatory proposal notes that the Commission approved network reliability targets required under the Electricity Standards of Service (ESS) Code in June 2013.
- 1.46 The Commission considers that the targets established under the ESS Code and related obligations under the Guaranteed Service Level Code (GSL Code) establish the appropriate standards for the service element of the regulatory bargain and form an appropriate basis for determining the capital and operating expenditure required in the forthcoming regulatory control period.

Forecast capital expenditure (refer Chapter 10 of this document)

- 1.47 PWC Networks has proposed capital expenditure of \$322.9 million (\$2013-14) for the forthcoming regulatory control period.
- 1.48 The Commission is not satisfied that the forecast capital expenditure proposed by PWC Networks reflects prudent and efficient capital investment required to be

undertaken by PWC Networks in the forthcoming regulatory control period in order to maintain or extend network capacity that is commensurate with the commercial and regulatory risks involved.

- 1.49 This conclusion is based in part on the Commission's assessment that the demand forecasts proposed by PWC Networks exhibit an upward bias and that a deferral by two to three years of proposed forecast demand should be applied in considering capital expenditure proposals.
- 1.50 The Commission's estimate of the total capital expenditure required by PWC Networks in the forthcoming regulatory control period that reflects prudent and efficient capital investment is \$265.1 million (\$2013-14).

Forecast operating expenditure (refer Chapter 11 of this document)

- 1.51 PWC Networks proposed operating and maintenance expenditure of \$539.3 million (\$2013-14) for the forthcoming regulatory control period.
- 1.52 The Commission is not satisfied that the operating and maintenance expenditure proposed by PWC Networks reflects efficient costs required to be incurred by PWC Networks in connection with the operation and maintenance of the network.
- 1.53 The Commission's estimate of efficient operating and maintenance expenditure requirements of PWC Networks in the forthcoming regulatory control period is \$481.5 million (\$2013-14).

Depreciation (refer Chapter 12 of this document)

- 1.54 PWC Networks proposed regulatory depreciation totalling \$142.7 million (nominal) over the forthcoming regulatory control period.
- 1.55 On the basis of the Commission's approved asset lives, opening RAB, and forecast capital expenditure, the Commission has determined regulatory depreciation totalling \$146.9 million (nominal).

Cost of capital (refer Chapter 13 of this document)

- 1.56 PWC Networks proposed a pre-tax nominal weighted average cost of capital (WACC) of 8.80 per cent based on the parameters underlying the AER's final determination for the Tasmanian DNSP, Aurora, in 2012 and as proposed in the Commission's Framework Statement.
- 1.57 For this draft decision, the Commission has calculated an indicative nominal pre-tax WACC of 8.12 per cent for PWC Networks.
- 1.58 This WACC is lower than that proposed by PWC Networks because the Commission has adopted a lower equity beta and because market based parameters (nominal risk free rate, debt risk premium (DRP) and expected inflation) have changed since PWC Networks prepared its regulatory proposal.

Building block revenue requirement (refer Chapter 15 of this document)

1.59 PWC Networks' calculation of annual revenue requirements and X factors, as presented in its regulatory proposal, is summarised in Table 1.1.

Table 1.1: PWC Networks proposed annual revenue requirements and X factors (\$M, nominal)

	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
Return on capital		81.85	86.97	91.10	94.07	96.11
Regulatory depreciation		27.73	30.37	26.24	28.01	30.39
Operating and maintenance expenditure		113.63	114.39	118.92	120.69	123.25
Unsmoothed annual revenue requirement		223.22	231.73	236.26	242.78	249.75
Expected revenues (smoothed revenue)	142.01	220.50	228.50	236.79	245.37	254.27
Forecast CPI (%)		2.60	2.60	2.60	2.60	2.60
X factors (%) ^(a)		- 51.34	- 1.00	- 1.00	- 1.00	- 1.00
Carryover adjustment (2013 cost pass through)		7.37	8.23	9.18	10.25	11.44
Total unsmoothed annual revenue requirement		230.59	239.95	245.44	253.03	261.19
Expected revenues (smoothed revenue)	142.01	229.04	237.35	245.95	254.87	264.11
Forecast CPI (%)		2.60	2.60	2.60	2.60	2.60
X factors (%) ^(a)		- 57.20	- 1.00	- 1.00	- 1.00	- 1.00

Source: PWC Networks, NTRM (ODRC)

(a) Negative values for X indicate real revenue increases under the CPI-X formula.

1.60 The Commission has re-calculated PWC Networks' revenue requirements and X factors based on its constituent decisions regarding the various components of the building block (refer Table 1.2).

1.61 The Commission's draft decision results in a total revenue requirement (exclusive of cost pass through carryovers) over the forthcoming regulatory control period of \$1074.0 million, compared to \$1,183.7 million proposed by PWC Networks. Inclusion of the cost pass through carryover increases these figures to \$1,116.2 million and \$1,230.2 million respectively. The main reasons for the difference between the Commission's draft decision and the proposal of PWC Networks are:

- removal of \$57.8 million from PWC Networks' forecast capital expenditure;
- removal of \$57.8 million from PWC Networks forecast operating expenditure, which includes an unallocated efficiency adjustment of \$25.2 million to bring PWC Networks closer to the average achieved by its peers;
- a lower WACC of 8.12 per cent than the proposed 8.8 per cent by PWC Networks, due to the adoption of equity beta of 0.7 and updating of parameters based on observed market data; and

- a reduction of \$4.3 million to remove double counting of indexation for inflation on the carryover of the cost pass through previously approved by the Commission.

Table 1.2: Commission conclusion on PWC networks annual revenue requirements and X factors (\$M, nominal)

	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
Return on capital		75.49	79.21	80.84	81.98	83.44
Regulatory depreciation		28.49	31.13	27.13	28.92	31.18
Operating and maintenance expenditure		106.29	105.10	106.84	104.17	103.74
Unsmoothed annual revenue requirement		210.28	215.44	214.80	215.06	218.37
Expected revenues (smoothed revenue)	142.01	200.97	208.08	215.45	223.07	230.97
Forecast CPI (%)		2.51	2.51	2.51	2.51	2.51
X factors (%) ^(a)		- 38.05	- 1.00	- 1.00	- 1.00	- 1.00
Carryover adjustment (2013 cost pass through)		7.18	7.76	8.39	9.07	9.81
Total unsmoothed annual revenue requirement		217.45	223.20	223.19	224.13	228.18
Expected revenues (smoothed revenue)	142.01	208.78	216.17	223.82	231.74	239.94
Forecast CPI (%)		2.51	2.51	2.51	2.51	2.51
X factors (%) ^(a)		- 43.42	- 1.00	- 1.00	- 1.00	- 1.00

Source: Utilities Commission, NTRM

(a) Negative values for X indicate real revenue increases under the CPI-X formula.

Next Steps

- 1.62 Interested parties are invited to make submissions on issues regarding this Draft Determination (including all associated consultant reports) by Monday 10 March 2014.
- 1.63 Consistent with the requirements of the NER, in addition to making a submission on the Draft Determination, PWC Networks may submit a revised regulatory proposal to the Commission. PWC Networks may only make revisions to its regulatory proposal so as to incorporate the substance of any changes required to address matters raised by the Draft Determination or the Commission's reasons for it.
- 1.64 PWC Networks must submit a revised regulatory proposal to the Commission by Tuesday 28 January 2014.¹³

¹³ The Commission notes that this is a shorter timeframe than is specified in the NER. PWC Networks agreed to a reduced timeframe for submission of its revised regulatory proposal to assist in addressing the time constraints associated with the extended time provided to prepare and submit its initial regulatory proposal.

- 1.65 Commission expects to release its Final Determination by Friday 18 April 2014.
- 1.66 In accordance with clause 78(1) of the NT Network Access Code PWC Networks must submit a statement setting out its proposed reference tariffs for the standard network access services it will be supplying that will apply from 1 July 2014, at least 60 days prior to the start of the financial year, that is by Thursday 1 May 2014.
- 1.67 The Commission must approve the tariff and charges unless, in the opinion of the Commission, the tariffs and charges would result in PWC Networks not complying with the requirements of the NT Network Access Code. If the Commission does not advise PWC Networks within 30 days of receiving the statement that it disapproves the tariffs and charges, then the Commission is taken to have approved the tariffs and charges.
- 1.68 PWC Networks must publish a pricing schedule, incorporating any modifications that the Commission directs, at least 30 days before the start of the financial year, that is by Friday 30 May 2014.

CHAPTER 2

Draft Determination

- 2.1 This Network Price Determination is made by the Utilities Commission of the Northern Territory (the Commission) pursuant to the determination powers of the Commission under the *Utilities Commission Act*, exercised in accordance with the authority provided under the *Electricity Networks (Third Party Access) Act* and the Electricity Networks (Third Party Access) Code (NT Network Access Code), which is a schedule to that Act.
- 2.2 In accordance with clause 66(1) of the NT Network Access Code, the Commission has made its Draft Determination regarding the revenue or price caps to apply to Power and Water Corporation Networks (PWC Networks), the network business division of the Power and Water Corporation (PWC), during the five-year period commencing 1 July 2014 and ending on 30 June 2019 (the forthcoming regulatory control period).
- 2.3 For the second and subsequent regulatory control periods¹⁴, including the fourth regulatory control period 1 July 2014 to 30 June 2019, the revenue or price caps that are to apply are to be determined by the regulator in a manner that:
 - (a) in the regulator's opinion, most effectively achieves the desired outcomes set out in clause 63; and
 - (b) is consistent with generally accepted regulatory practice at the time.
- 2.4 In accordance with clause 66(3) of the NT Network Access Code, in the Commission's opinion, generally accepted regulatory practice for electricity networks price determinations at this time is the process undertaken by the AER in accordance with the NER. In the Commission's opinion, the manner for determining the revenue cap to apply in the forthcoming regulatory control period that most effectively achieves the desired outcomes set out in clause 63 of the NT Network Access Code is to apply, where practicable, the approach used by the AER as specified in Chapter 6 of the NER, while recognising that resourcing constraints and economies of scale mean that full compliance with NER requirements might not be practicable at this time.
- 2.5 In accordance with clause 72(1) of the NT Network Access Code, the Commission has determined excluded services to be those services specified in Appendix A of this Draft Determination.
- 2.6 In accordance with clause 66(1) of the NT Network Access Code, the Commission has decided that the basis of the control mechanism for regulated network access services is a revenue cap of the prospective CPI minus X form.

¹⁴ Second regulatory control period 1 July 2004 to 30 June 2009, third regulatory control period (current) 1 July 2009 to 30 June 2014, fourth regulatory control period (forthcoming) 1 July 2014 to 30 June 2019.

- 2.7 The methodology used to determine the revenue cap is the building block approach.
- 2.8 Taking into account the revenue requirements of PWC Networks during the forthcoming regulatory control period and having regard to the principles set out in clause 68 of the NT Network Access Code, the Commission has determined the total revenue requirement for PWC Networks for the forthcoming regulatory control period is \$1,074.0 million (nominal) plus an additional \$42.2 million (nominal) carried over from the cost pass through, approved by the Commission in May 2013,¹⁵ of costs arising from the implementation of the Davies Review recommendations, made up as follows:

Table 2.1 Commission conclusion on PWC Networks annual revenue requirements (\$M, nominal)

	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
Return on capital		75.49	79.21	80.84	81.98	83.44
Regulatory depreciation		28.49	31.13	27.13	28.92	31.18
Operating and maintenance expenditure		106.29	105.10	106.84	104.17	103.74
Unsmoothed annual revenue requirement		210.28	215.44	214.80	215.06	218.37
Carryover adjustment (2013 cost pass through)		7.18	7.76	8.39	9.07	9.81
Total unsmoothed annual revenue requirement		217.45	223.20	223.19	224.13	228.18

Source: Utilities Commission, NTRM

- 2.9 In accordance with clause 2(1A) of Schedule 10 of the NT Network Access Code, the Commission has determined the X factors to apply in each year of the forthcoming regulatory control period as follows:

Table 2.2 Commission conclusion on X factors (\$M, nominal)

	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
Total unsmoothed annual revenue requirement		217.45	223.20	223.19	224.13	228.18
Expected revenues (smoothed revenue)	142.01	208.78	216.17	223.82	231.74	239.94
Forecast CPI (%)		2.51	2.51	2.51	2.51	2.51
X factors (%) ^(a)		- 43.42	- 1.00	- 1.00	- 1.00	- 1.00

Source: Utilities Commission, NTRM

(a) Negative values for X indicate real revenue increases under the CPI-X formula.

¹⁵ Utilities Commission, [Cost pass through application – Final determination](#), May 2013.

- 2.10 Cost pass through events and contingent projects that apply to PWC Networks for the forthcoming regulatory control period are the events and projects set out in Chapter 14 of this decision. These are events that may be considered by the Commission to be extraordinary developments that would require the Commission to revoke or reset the revenue cap pursuant to clause 71 of the NT Network Access Code.
- 2.11 If a relevant cost pass through event occurs or a relevant contingent project is required to be undertaken, PWC Networks may seek the Commission's approval of a cost pass through amount for the estimated financial effects of the relevant cost pass through event or relevant contingent project.
- 2.12 In making a decision to revoke or reset the revenue cap with respect to a cost pass through event or contingent project, the Commission will, consistent with the requirements of the NT Network Access Code and to the extent practicable, apply the processes and procedures set out in the relevant provisions of the NER.
- 2.13 In accordance with clause 75(6) of the NT Network Access Code, the Commission approves the statement setting out the pricing principles and methods that PWC Networks proposes to apply when establishing the reference tariffs to apply to individual network access tariffs.
- 2.14 In accordance with clause 81(3) of the NT Network Access Code, the Commission approves the statement setting out the principles and methods for establishing capital contributions to be applied during the third regulatory control period as proposed by PWC Networks.
- 2.15 In accordance with clause 62(1)(a) of the NT Network Access Code, the Commission has determined that, during the forthcoming regulatory control period, PWC Networks must annually develop network tariff schedules for regulated network access services that conform with the following revenue constraint:

$$\sum_{i=1}^n \sum_{j=1}^m p_t^{i,j} \times q_t^{i,j} \leq R_{t-1} \times (1+CPI_t) \times (1-X_t) \times (1 \pm \text{passthrough}_t) \pm \Delta R_t$$

where:

R_{t-1}	is the revenue in year $t-1$
CPI_t	is the annual percentage change in the ABS Consumer Price Index All Groups, Weighted Average of Eight Capital Cities from March in regulatory year $t-2$ to March in regulatory year $t-1$
X_t	is the allowed real change in revenue from year $t-1$ to year t of the regulatory control period as determined by the Commission
Passthrough	is any pass through amount in year t determined by the Commission, expressed as a percentage of the annual revenue
ΔR_t	is the overs and unders adjustment to revenue in year t
n	is the number of tariff tariffs
m	is the number of tariff components
$p_t^{i,j}$	is the price of component i of tariff j in year t
$q_t^{i,j}$	is the forecast volume of component i of tariff j in year t

- 2.16 Price movements for the tariff class of customers using less than 750MWH per annum and for individual customers using more than 750MWh per annum must be consistent with the following side constraint:

$$\frac{\sum_{j=1}^m p_t^j \times q_{t-2}^j}{\sum_{j=1}^m p_{t-1}^j \times q_{t-2}^j} \leq (1 + CPI_t) \times (1 - X_t) \times (1 + Y_t) \times (1 \pm \text{passthrough}_t)$$

where:

CPI_t	is the annual percentage change in the ABS Consumer Price Index All Groups, Weighted Average of Eight Capital Cities from March in regulatory year $t-2$ to March in regulatory year $t-1$
X_t	is the allowed real change in revenue from year $t-1$ to year t of the regulatory control period as determined by the Utilities Commission
Y_t	is the side constraint on revenue recovered from a tariff class or customer from year $t-1$ to year t of the regulatory control period as determined by the Commission
<i>Passthrough</i>	is any pass through amount in year t determined by the Commission, expressed as a percentage of the annual revenue
m	the number of tariff components
p_t^j	is the proposed price for component j of the tariff class in year t
p_{t-1}^j	is the price charged for component j of the tariff class in year $t-1$
q_{t-2}^j	is the actual volume of component j of the tariff class in year $t-2$

- 2.17 The Commission's draft decision is that a side constraint of 2 per cent is appropriate.
- 2.18 In accordance with clause 62(1)(a) of the NT Network Access Code, at least 60 days prior to the start of each financial year in the regulatory control period, PWC Networks must provide a statement to the Commission setting out its proposed reference tariffs for the standard network access services it will be supplying that will apply for the relevant period with respect to its network, developed in accordance with the principles and methods set out in the Network Pricing Principles Statement approved under paragraph 2.13 above.
- 2.19 The annual statement of network tariffs must:
- set out PWC Networks proposed regulated network access tariffs and charges, including tariff components, for the financial year;
 - detail how the tariffs and charges have been calculated by application of the principles in Chapter 7 of the NT Network Access Code; and
 - demonstrate compliance with the control mechanism for regulated network access services by maintaining an unders and overs account in accordance with Appendix B of this decision; and
 - demonstrate compliance with the side constraints set out in paragraph 2.16 above.

CHAPTER 3

The regulatory framework

Background

- 3.1 The electricity supply industry in the Territory is regulated by the *Electricity Reform Act*, *Electricity Networks (Third Party Access) Act*, *Utilities Commission Act* and associated legislation. This statutory framework was introduced on 1 April 2000.
- 3.2 The statutory framework is primarily focused on regulating the activities of electricity industry participants and customers in the Darwin-Katherine, Alice Springs and Tennant Creek power systems, which are prescribed electricity networks under section 5 of the *Electricity Networks (Third Party Access) Act*¹⁶. Key elements of the statutory framework are:
 - third party access to the Darwin-Katherine, Alice Springs and Tennant Creek electricity networks;
 - staged introduction of retail contestability, with all customers being contestable from 1 April 2010; and
 - an independent economic regulator to regulate monopoly electricity services, license market participants and enforce regulatory standards for market conduct and service performance.
- 3.3 The Commission is the independent economic regulator responsible for regulating monopoly electricity services, licensing market participants and enforcing regulatory standards for market conduct and service performance.
- 3.4 Retail electricity prices currently paid by consumers comprise several cost components:
 - electricity generation costs;
 - transmission and distribution costs (the subject of this Draft Determination);
 - system operation and control costs; and
 - customer retail services.
- 3.5 The 2014 Network Price Determination deals with the price component paid by network users for the conveyance of electricity through a prescribed electricity network in the Territory regulated under the NT Network Access Code which is a schedule to the *Electricity Networks (Third Party Access) Act*.
- 3.6 Under the *Electricity Networks (Third Party Access) Act* and the NT Network Access Code, the Commission is responsible for determining the revenue or price caps to apply to the network service provider with regard to a network covered by the Code.

¹⁶ Electricity supply in regional and remote centres of the Territory is mainly managed by the Territory Government and the service provider through a contract for service model. Three mining townships (Nhulunbuy, Alyangula and Jabiru) are each provided with electricity by associated mining entities.

- 3.7 The network service provider in the Territory is PWC Networks.
- 3.8 The Commission has made this draft decision and Draft Determination according to the requirements of the NT Network Access Code and having regard to relevant requirements of the NEL and Chapter 6 of the NER. The Commission's principal task is to set the revenues that PWC Networks can recover or prices that PWC Networks can charge from the provision of regulated network access services (similar to direct control services in the NER) in the period 1 July 2014 to 30 June 2019 (the forthcoming regulatory control period).
- 3.9 On 16 September 2013, PWC Networks submitted its regulatory proposal for the forthcoming regulatory control period to the Commission. The Commission published PWC Networks' regulatory proposal¹⁷ for public comment on 19 September 2013.

Regulatory Requirements

Requirements of the NT Network Access Code

- 3.10 Part 3 of the NT Network Access Code specifies the price regulation framework to be observed by the Commission and by the network service provider when setting the prices to be paid by network users for the conveyance of electricity through the electricity network.
- 3.11 The Territory's regulatory framework makes no specific or statutory distinction between transmission and distribution, with the network services regulated under the NT Network Access Code including both transmission and distribution services.
- 3.12 Clause 63 of the NT Network Access Code sets out the objectives of price regulation:
- (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.*

¹⁷ Power and Water Corporation, [2014 Network Price Determination: Initial Regulatory Proposal 1 July 2014 to 30 June 2019](#), September 2013

3.13 Clause 62 of the NT Network Access Code sets out what the Commission is required to do:

- (1) *Before pricing schedules are published, the regulator must:*
 - (a) *with respect to tariffs and charges to be set by the network provider for the supply of regulated network access services – determine the cap or limit on the total revenue to be raised from or the average price to be charged for the supply of those services in a network;*
 - (b) *oversee the application by the network provider of principles for setting reference tariffs to apply to standard network access services;*
 - (c) *oversee the application by the network provider of principles for setting of capital contributions and charges; and*
 - (d) *oversee the application of principles for setting of prices for the supply of out-of-balance power.*
- (2) *In determining or approving prices or pricing methodologies under this Part of the Code, the regulator is to conduct all its determination and approval processes in an open, transparent and competitively-neutral manner, including by consulting with network users, end-use customers, members of the public and all licensed electricity entities that may be affected, directly or indirectly, by the resultant prices.*

3.14 Clause 66 of the NT Network Access Code sets out the manner in which the Commission must determine the revenue or price cap:

- (1) *The regulator is responsible for determining the revenue or price caps to apply to the network provider with regard to a network covered by this Code at the time.*
- (2) *Revenue caps are to be determined by the regulator for each financial year during the first regulatory control period in accordance with the principles set out in this Chapter.*
- (3) *The revenue or price caps that are to apply during the second and subsequent regulatory control periods are to be determined by the regulator in a manner that:*
 - (a) *in the regulator's opinion, most effectively achieves the desired outcomes set out in clause 63; and*
 - (b) *is consistent with generally accepted regulatory practice at the time.*

3.15 Clause 68 of the NT Network Access Code sets out the matters the Commission must take into account in setting a revenue or price cap:

In setting a revenue or price cap, the regulator must take into account the revenue requirements of the network provider during the relevant financial year or years having regard to:

- (a) *the demand growth that the network provider is expected to service using any appropriate measure including but not limited to:*
 - (i) *energy consumption by category of network users or other relevant groups of persons who consume energy;*
 - (ii) *demand by category of network users or other relevant groups of persons who consume energy;*
 - (iii) *numbers of network users or other relevant groups of persons who consume energy by category of network users; and*
 - (iv) *length of the electricity network;*

- (b) *the service standards applicable to the network provider under this Code and any other standards imposed on the network provider by any regulatory regime administered by the regulator and by agreement with the relevant network users;*
- (c) *the potential for efficiency gains to be realised by the network provider in expected operating, maintenance and capital costs, taking into account the expected demand growth and service standards referred to in paragraphs (a) and (b);*
- (d) *the network provider's cost of capital applicable to the relevant network access service, having regard to the risk-adjusted rate of return required by investors in commercial enterprises facing similar business risks to those faced by the network provider in the provision of that service;*
- (e) *the provision of a return on efficient capital investment undertaken by the network provider in order to maintain or extend network capacity that is commensurate with the commercial and regulatory risks involved;*
- (f) *the right of the network provider to recover reasonable costs incurred by the network provider in connection with the operation and maintenance of the network, including those arising from but not limited to:*
 - (i) *any Territory and Commonwealth taxes or equivalent taxes paid in connection with the operation of its business as a provider of network access services; and*
 - (ii) *the tariffs and charges paid to other network providers irrespective of whether these tariffs and charges are regulated under this Code;*
- (g) *any increase in the rate of a tax or any new tax, whether it is a tax or tax equivalent imposed by the Territory, a State or the Commonwealth that directly increases the cost of providing the access services that are directly attributable to the increase in the rate or to the new tax;*
- (h) *any reduction or increase in network energy losses; and*
- (j) *the on-going commercial viability of the network provider.*

National Electricity Law

3.16 The NEL sets out the functions and powers of the AER, including its role as the economic regulator of utilities operating in the national electricity market (NEM). Section 16 of the NEL states that when performing or exercising a regulatory function or power, the AER must do so in a manner that will or is likely to contribute to the achievement of the national electricity objective.

3.17 The national electricity objective is:¹⁸

...to promote efficient investment in, and efficient operation and use of, electricity services for the long term interests of consumers of electricity with respect to –

- (a) *price, quality, safety, reliability and security of supply of electricity; and*
- (b) *the reliability, safety and security of the national electricity system.*

¹⁸ NEL section 7.

- 3.18 Further, the NEL specifies that, in performing or exercising its regulatory functions or powers, the AER must ensure that the regulated DNSP to which the determination applies and any affected registered participant are, in accordance with the NER:¹⁹
- (i) *informed of material issues under consideration by the AER; and*
 - (ii) *given a reasonable opportunity to make submissions in respect of that determination before it is made.*
- 3.19 Section 7A of the NEL also specifies revenue and pricing principles that the AER must take into account in making a distribution determination in relation to direct control network services. These principles are:
- (2) *A regulated network service provider should be provided with a reasonable opportunity to recover at least the efficient costs the operator incurs in–*
 - (a) *providing direct control network services; and*
 - (b) *complying with a regulatory obligation or requirement or making a regulatory payment.*
 - (3) *A regulated network service provider should be provided with effective incentives in order to promote economic efficiency with respect to direct control network services the operator provides. The economic efficiency that should be promoted includes –*
 - (a) *efficient investment in a distribution system or transmission system with which the operator provides direct control network services;*
 - (b) *the efficient provision of electricity network services; and*
 - (c) *the efficient use of the distribution system or transmission system with which the operator provides direct control network services.*
 - (4) *Regard should be had to the regulatory asset base with respect to a distribution system or transmission system adopted–*
 - (a) *in any previous–*
 - (i) *as the case requires, distribution determination or transmission determination; or*
 - (ii) *determination or decision under the National Electricity Code or jurisdictional electricity legislation regulating the revenue earned, or prices charged, by a person providing services by means of that distribution system or transmission system; or*
 - (b) *in the Rules.*
 - (5) *A price or charge for the provision of a direct control network service should allow for a return commensurate with the regulatory and commercial risks involved in providing the direct control network service to which that price or charge relates.*
 - (6) *Regard should be had to the economic costs and risks of the potential for under and over investment by a regulated network service provider in, as the case requires, a distribution system or transmission system with which the operator provides direct control network services.*

¹⁹ NEL section 16.

- (7) *Regard should be had to the economic costs and risks of the potential for under and over utilisation of a distribution system or transmission system with which a regulated network service provider provides direct control network services.*

National Electricity Rules

- 3.20 Chapter 6 of the NER sets out provisions that the AER must apply in exercising its regulatory functions and powers for electricity distribution networks. In particular, the AER must make a distribution determination that includes a:
- building block determination in respect of standard control services;
 - determination in respect of alternative control services;
 - determination relating to the negotiating framework for negotiated distribution services; and
 - determination specifying the negotiated distribution service criteria for negotiated distribution services.
- 3.21 The distribution determination is predicated on constituent decisions to be made by the AER, specified in clause 6.12.1 of the NER.

Building block determination

- 3.22 Clause 6.3.2(a) of the NER requires that a building block determination specify for a regulatory control period the following matters:
- (1) *the Distribution Network Service Provider's annual revenue requirement for each regulatory year of the regulatory control period;*
 - (2) *appropriate methods for the indexation of the regulatory asset base;*
 - (3) *how any applicable efficiency benefit sharing scheme, service target performance incentive scheme, or demand management incentive scheme are to apply to the Distribution Network Service Provider;*
 - (4) *the commencement and length of the regulatory control period; and*
 - (5) *any other amounts, values or inputs on which the building block determination is based (differentiating between those contained in, or inferred from, the service provider's building block proposal and those based on the AER's own estimates or assumptions).*

Commission's approach

- 3.23 Clause 66(3) of the NT Network Access Code requires the Commission to determine the revenue or price caps that are to apply during each regulatory control period in a manner that, in the Commission's opinion, most effectively achieves the desired outcomes set out in clause 63 and is consistent with generally accepted regulatory practice at the time. The Commission's view is that generally accepted regulatory practice for electricity networks price determinations is the process undertaken by the AER in accordance with the NER, and that working towards alignment with national arrangements is in the long-term interest of Territory electricity consumers.
- 3.24 In its Framework Statement for the 2014 Network Price Determination, the Commission made clear its intention to apply, where practicable, the approach used by the AER as specified in Chapter 6 of the NER. This intention was predicated on confirming that specific requirements of the NER were not inconsistent with the NT Network Access Code and confirming that PWC Networks had the capability of meeting those requirements. In those instances where PWC Networks lacked such

capability, the Framework Statement indicated that the Commission would modify the NER requirements in order that they could be met by PWC Networks.

- 3.25 The Commission acknowledged in the Framework Statement that resourcing constraints and economies of scale meant that full adoption of an approach consistent with the AER processes might not be practicable. That said, however, the Commission's longer term objective is full compliance with NER requirements and the Commission's expectation is that, for the purposes of the network price determination for the 2019-2024 regulatory control period, PWC Networks would be required to comply with a much more complete set of requirements of the AER than is the case for the current determination.

Stakeholder views and Commission response

- 3.26 Underlying the Commission's stated intention to apply the provisions of the NER was a belief that the information systems of PWC Networks were now sufficiently well-developed as to enable the so-called building block approach (essentially a build-up of efficient forecast costs across the 2014-2019 regulatory control period) to be applied to PWC Networks. In the Commission's two previous network price determinations, this had not been possible. The consistent position of the Commission has been that the building block approach should become the standard technique for network price determinations in the Territory; this position has strong stakeholder support, in particular because it will provide stronger incentives for efficiency gains within PWC Networks than other approaches.
- 3.27 The approach used by the AER in applying the building blocks technique to network price determinations, as specified in Chapter 6 of the NER, is widely acknowledged as representing industry best practice in Australia. While the regulated networks in the Territory have some different characteristics from those in other parts of Australia (size, integration of transmission and distribution), the basic approach remains applicable. In the consultation leading to finalisation of the Framework Statement, there was general stakeholder support for this approach.
- 3.28 In particular, support for application of the NER came in a submission from the Treasurer in November 2013 indicating agreement with the Commission's decision to adopt:
- ...where practicable and feasible, the approach used by the Australian Energy Regulator and the application of those parts of Chapter 6 of the NER ... that are consistent with the Network Access Code.*
- 3.29 The Treasurer noted that the Commission's approach to the 2014 Network Price Determination would assist in facilitating a recent Government decision to transfer responsibility for economic regulation of electricity networks in the Territory to the national framework as established under the NEL and NER.
- 3.30 However, PWC, in its regulatory proposal, argued:
- that regulatory practice makes it incumbent upon the Commission to demonstrate that there is a positive net benefit from the regulatory changes it proposes, rather than assuming that the NEM framework and AER reporting is best practice or appropriate and placing the onus on Power Networks and stakeholders to demonstrate otherwise.*
- 3.31 Ultimately there is little disagreement between stakeholders on the fundamentals of this matter. The NER serve as an authoritative template to guide the Commission in its conduct of the 2014 Network Price Determination. The Commission has worked

closely with PWC Networks in considering application of specific provisions of the NER. The Commission has also consulted with the AER on the matter. The Commission has been sensitive to the resourcing constraints and economies of scale faced by PWC, which make full adoption of the NER approach impracticable, at least for the current determination.

- 3.32 Thus, as outlined in later chapters of this Draft Determination, substantial modifications have been made to the AER approach to accommodate PWC's constraints. Notably, a pre-tax (rather than post-tax) approach has been adopted (as outlined in the Framework Statement), while cost allocation requirements have been substantially altered. The Commission has not sought to apply to PWC Networks other key aspects of the AER approach, including an Efficiency Benefits Sharing Scheme, Demand Management Incentive Scheme, and Service Target Performance Incentive Scheme.
- 3.33 In addition, the very detailed information requirements for network businesses in the NEM as specified by the AER have been significantly lessened in recognition of the current capacity of PWC Networks to provide the complete set of information. The Commission also provided PWC Networks with a significantly longer period than is allowed for in the NER in which to prepare and submit its full regulatory proposal, and allowed its submission in stages.
- 3.34 The Commission has worked with PWC Networks to identify where gaps exist in the information systems of PWC Networks in comparison with the full requirements of the AER. This will be important for the purpose of future price determinations beyond the current determination. The Commission's expectation is that, for the purposes of the network price determination for the 2019-2024 regulatory control period, PWC Networks would be required to comply with a much more complete set of requirements of the AER than is the case for the current determination.
- 3.35 The Commission notes that the information required for regulatory purposes is similar to that required for business purposes, where good management decisions rely on the same detailed information as that required for regulatory decision-making. Thus, asset management systems being designed for regulatory purposes should be linked to those used for business purposes.
- 3.36 Finally, it is noted that the period of consultation for this Draft Determination provides a further opportunity for stakeholders to comment on the details of the manner in which the Commission has sought to apply the provisions of the NER.

Scope of the 2014 Network Price Determination

- 3.37 As set out in the Commission's Framework Statement, the 2014 Network Price Determination will comprise a single building block of cost of service covering all network services (both transmission and distribution) provided by PWC Networks, applying, where appropriate, the provisions of Chapter 6 of the NER for the regulation of distribution networks.
- 3.38 To facilitate reference to the NER, references throughout this paper to 'distribution services' should be read to include all the network access services provided by PWC Networks to customers, including the transmission component.
- 3.39 A single cost of service determination will be made covering all regulated networks, rather than separate determinations for each network.

Review process

3.40 The Commission has reviewed PWC Networks' regulatory proposal in accordance with the requirements of the NT Network Access Code and having regard to the review process outlined in Part E of Chapter 6 of the NER. To date, this process has involved:

- Framework and approach - the Commission consulted with PWC Networks and interested parties about the development of the framework and approach, with respect to the classification of services, control mechanism and application of schemes. The Framework Statement was published in November 2012, as required under clause 6.8.1 of the NER.
- Pre-consultation - the Commission consulted with PWC Networks about the development of the regulatory information notice (RIN) and pro forma templates.
- Proposal - PWC Networks submitted its regulatory proposal to the Commission on 16 September 2013. The Commission assessed PWC Networks' proposal against the requirements of the NT Network Access Code and having regard to Chapter 6 of the NER and the AER's guidelines.
- Public consultation - on 19 September 2013 the Commission published PWC Networks' regulatory proposal and called for submissions from interested parties.
- Submissions - the Commission received five submissions on PWC Networks' regulatory proposal. The submissions are listed in Appendix D.
- Assessment by technical experts - the Commission engaged Parsons Brinckerhoff Strategic Consulting (PB) as a technical expert to advise it on a number of key aspects of the regulatory proposals, including a review of PWC's demand forecasts, proposed capital expenditure and proposed operating and maintenance expenditure.
- PB has provided independent advice to the Commission on these matters, based on its review. The Commission has considered this advice in making its Draft Determination.
- Other specialist advice - the Commission also engaged:
 - Ernst & Young to provide advice in developing the NT Revenue Model (NTRM) and the (confidential) regulatory templates that accompanied the RIN serve on PWC Networks;
 - Primrose and Associates to provide high-level overview advice on the determination; and
 - Deloitte Economics and Infrastructure Advisory (Deloitte) to provide advice on PWC Networks' proposed Network Capital Contributions Statement (NCCP) and Network Pricing Principles Statement (NPPS).
- The Commission's analysis and assessment of PWC Networks' regulatory proposal, submissions and consultants' advice is set out in this draft decision.

Structure of draft decision

3.41 The Commission's consideration of PWC Networks' regulatory proposal is set out as follows:

- Chapters 4 and 5 of this document address the classification of services and control mechanisms for standard control services;
- Chapters 6 to 15 relate to key elements of the building block calculation; and

- Chapters 16 and 17 address Territory-specific requirements for statements setting out capital contributions principles and methods,²⁰ network pricing principles and methods²¹ and an indicative tariff proposal.

²⁰ NT Network Access Code clause cl.81(2).

²¹ NT Network Access Code clause cl.75(5).

CHAPTER 4

Classification of services

Introduction

- 4.1 This chapter sets out the Commission's classification of PWC Networks' network services for the forthcoming regulatory control period. It draws on the Commission's Framework Statement.
- 4.2 Procedures for assigning and re-assigning customers to tariff classes are dealt with in Chapters 16 and 17 in assessing PWC Networks' proposed network pricing principles and indicative pricing proposal.

Regulatory requirements

NT Network Access Code

- 4.3 The NT Network Access Code provides that a revenue or price cap applies only to regulated network access services.²² Regulated network access services are all the network access services supplied by a network service provider other than those specified by the regulator under clause 72 of the Code.²³
- 4.4 Clause 72 of the NT Network Access Code provides that
 - (1) *The excluded network access services, being those services for which the associated costs and revenue are excluded from the revenue or price cap, are to be determined by the regulator (when the regulator determines the network revenue caps) in a manner consistent with clause 6(3) of the Competition Principles Agreement.*
- 4.5 It further categorises excluded services into two types:
 - (2) *Excluded network access services not subject to any price regulation relate to services:*
 - (a) *the supply of which, in the assessment of the regulator, is subject to effective competition; and*
 - (b) *the cost of which, in the assessment of the regulator, can be satisfactorily excluded from the cost base (including all asset-related costs) used for the purpose of calculating the revenue or price cap applying to regulated network access services.*

and:

²² NT Network Access Code clause cl.67.

²³ NT Network Access Code clause cl.3.

(3) *Excluded network access services which, in the regulator's opinion, do not lend themselves to being regulated by the price control mechanisms set out in Chapters 6 and 7 relate to services:*

(a) *the supply of which, in the assessment of the regulator, is not subject to effective competition; and*

(b) *the cost of which, in the assessment of the regulator, cannot be satisfactorily included in the cost base (including all asset-related costs) used for the purpose of calculating the revenue or price cap applying to regulated network access services.*

4.6 Any network access service that is not specifically classified by the Commission as an excluded service is a regulated network access service covered by the revenue or price cap.

National Electricity Rules

4.7 The NER defines a distribution service as a service provided by means of or in connection with a distribution network, together with the connection assets, which is connected to another transmission or distribution system.²⁴ Distribution services are classified as either direct control services, negotiated distribution services, or unregulated distribution services.

4.8 Clause 6.2.1 of the NER allows the AER to classify a distribution service as either a direct control service or a negotiated distribution service. If the AER decides not to classify a distribution service, the service is not regulated under the NER. Under clause 6.2.2(a) of the NER, direct control services are categorised as either standard control services or alternative control services.

Framework and approach

4.9 In the 2009 NPD, the Commission recast its Determination of Excluded Services in the terminology of the services classification used by the NER. The requirements of the NT Network Access Code were aligned with the classifications of the NER as set out in Table 4.1 below.

Table 4.1: Network access services

NT Network Access Code	National Electricity Rules equivalent
Standard network access services – which are regulated via a revenue or price cap	Direct control services – standard control services
Excluded network access services – the supply of which, in the opinion of the regulator, is not subject to effective competition but which do not lend themselves to being regulated by the revenue or price cap (clause 72(3))	Negotiated distribution service (for above standard connection services), or Direct control services – alternative control services (for various miscellaneous services specific to a particular customer)
Excluded network access services – the supply of which, in the opinion of the regulator, is subject to effective competition (clause 72(2))	Unregulated services

²⁴ NER Chapter 10.

- 4.10 The Commission's Framework Statement proposed the adoption of the AER's approach of classifying a class of activities, rather than the specific activities, allowing the specific definition or magnitude of services to change while maintaining the desired classification. The intention is to allow flexibility to PWC Networks to alter the exact specification (but not the nature) of a service during the regulatory control period.
- 4.11 In its Framework Statement, the Commission grouped PWC Networks' services and applied a classification for each group as shown in Table 4.2 below.

Table 4.2: Commission's preliminary position – 2014 Network Price Determination Classification of services

Service grouping	Negotiated distribution services	Direct control services – standard control services	Direct control services – alternative control services
Network services	Nil	Network services at mandated standard Energy-only service for public lighting	Above standard or non-standard network services
Connection services	Nil	Connection services at mandated standard	Above standard or non-standard connection services New or upgraded connection services (to the extent the user is required to make a financial contribution)
Metering services	Nil	Metering services at the mandated standard	Above standard or non-standard metering services
Fee-based services	Nil	Nil	Disconnection and reconnection Temporary supply services – low voltage Fault response – not service provider's fault Wasted attendance Provision, construction and maintenance of street lighting assets Non-standard data services Installation of minor equipment to network assets (eg Tiger Tails) Cable location services Unscheduled metering services – chargeable

Quoted services	Nil	Nil	High load transport escorts Covering of low voltage mains Rearrangement of network assets Ancillary metering services Supply enhancement Metering enhancement Emergency recoverable works Supply abolishment Temporary supply services – high voltage Rectifying illegal connections Unmetered supply services
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PWC Networks' regulatory proposal

- 4.12 PWC Networks submitted that its regulatory proposal has been prepared consistent with the classification of services set out in the Commission's Framework Statement with the addition of the following new alternative control services:
- investigation and testing services;
 - provision of non-standard streetlight assets; and
 - provision of network capacity in excess of Network Technical Code requirements.
- 4.13 PWC Networks also proposed that a number of alternative control services be changed from fee-based services to quoted services.
- 4.14 PWC Networks' proposed classification of services was provided in Attachment 4 to its regulatory proposal and included comprehensive descriptions of the activities in the each service group. This included some additional changes to activity descriptions for which no explanation was provided in the regulatory proposal.

Submissions

- 4.15 The Northern Territory Major Energy Users (NTMEU) indicated that it did not support the introduction of a new alternative control service for power factor below the level set by the Network Technical Code, arguing that the proposed approach was:
- inefficient, with better approaches used in other networks to address the problem of low power factor;
 - inequitable, applying only to large customers with appropriate metering; and
 - likely to be difficult for some customers to understand and respond to.
- 4.16 The NTMEU also raised concerns about the use of quotations for a significant number of alternative control services, noting that some will be imposed on customers with insufficient understanding of how electricity systems operate and an inability to fully appreciate the implications of PWC Networks' new requirements.
- 4.17 No other submissions were received on the form of control.

Issues and Commission's considerations

- 4.18 Classification of services is the key area where the requirements of the NT Network Access Code differ from the requirements of the NER.
- 4.19 While service classification categories broadly align as set out in Table 4.1, there are some key differences notably that:

- under the NER any service that is not classified as either a direct control service or a negotiated distribution service defaults to an unregulated service. By contrast, under the NT Network Access Code, any network access service that is not classified as an excluded network access service is, by default, included as a regulated network access service under the revenue cap; and
- under the NER, services are classified on the basis of the potential for development of competition, effects on administrative costs and the extent to which the costs of providing the service are directly attributable to the person to whom the service is provided. By contrast, the focus of the NT Network Access Code is whether the costs of an excluded service can, in the assessment of the Commission, be satisfactorily excluded from the cost base for the revenue or price cap.

Fee-based and quoted alternative control services

- 4.20 PWC Networks has distinguished between alternative control services that are provided based on a schedule of fees and services that are provided on a quoted basis, that is, services for which their nature and scope cannot be known in advance irrespective of whether they are customer requested or triggered by an external event.
- 4.21 This distinction is relevant under the NER, where the AER determines price controls for alternative control services.
- 4.22 However, under the NT Network Access Code, the Commission does not determine price controls for excluded services. Rather, for those excluded control services that, in the Commission's assessment, are not subject to effective competition,²⁵ (and which are similar types of services to alternative control services), PWC Networks is required to provide these services to network users on fair and reasonable terms.
- 4.23 Only if PWC Networks and the network user cannot reach agreement does the Commission have a role in determining what is fair and reasonable.
- 4.24 The NTMEU expressed concern about the use of quotations for the provision of services, noting that:
- the use of quotations for provision of services implies that those receiving the quotations have an understanding of what is a reasonable cost in the circumstances and that PWC will not abuse the process to over-recover costs.(page.18)*
- 4.25 The Commission notes the NTMEU's concerns but has no basis to consider that PWC Networks is abusing the process. The Commission notes that its ability to scrutinise the prices for these services is limited in the absence of a specific network user complaint.

Proposed classifications

- 4.26 The Commission considers that most of the service classifications proposed by PWC Networks are reasonable. The exceptions are discussed below.

Above standard or non-standard connection services

- 4.27 PWC has added some additional activity descriptors to this service group:
- supply enhancement;

²⁵ NT Network Access Code clause cl.72(3).

- supply abolishment; and
 - ancillary connection services, which includes:
 - responding to enquiries in relation to the provision of the non-standard connection;
 - provision of technical specifications in relating to the connection;
 - provision of duplicate supply; and
 - preliminary communications with networks user where more than six hours work is required.
- 4.28 The Commission considers that supply enhancement is captured within the existing activity descriptors, as supply enhancement would constitute an above standard connection or an upgraded connection service.
- 4.29 It is not clear from the information provided by PWC Networks that supply abolishment of an above standard, non-standard or upgraded connection would impose greater cost on the network service provider than supply abolishment of a standard connection. The Commission has amended this descriptor to clarify that only additional costs incurred may be recovered.
- 4.30 The Commission is satisfied that including ancillary connection services as described by PWC Networks is reasonable.

Above standard or non-standard metering services

- 4.31 PWC has added some additional activity descriptors to this service group, notably:
- ancillary metering services, which include:
 - provision of ancillary metering or metering of a type that exceeds normal requirements of a user;
 - installation and commissioning of non-standard metering and associated equipment;
 - periodic testing of additional or non-standard metering equipment; and
 - maintenance and replacement of non-standard metering assets;
 - metering enhancement; and
 - unmetered supply services.
- 4.32 The ancillary metering services specified by PWC Networks are the same services as those supplied in relation to standard metering. It is not clear from the information provided by PWC Networks that providing these services with respect to an above standard or non-standard metering service would impose greater cost on the network service provider than for a standard connection. The Commission has amended this descriptor to clarify that only additional costs incurred may be recovered.
- 4.33 The Commission considers that metering enhancement is captured within the existing activity descriptors, as metering enhancement would constitute an above standard connection or an upgraded metering service.

Equipment rental charges for non-network purposes

- 4.34 PWC Networks has proposed a new alternative control service for equipment rental charges for non-network purposes. This would include use of PWC Networks poles or other conduits by communications or other services.
- 4.35 As this service is not a network service, the Commission considers that this should be classified as an unregulated service, that is, an excluded service under clause 72(2) of the NT Network Access Code.

Connection point services

- 4.36 PWC Networks has proposed a new alternative control service for connection point services associated with:
- non-compliance of a network or embedded generator with the connection agreement; and
 - services or system augmentation or extension required to connect a load or embedded generator and meet the requirements of the Network Technical Code.
- 4.37 Recouping of costs arising from a network user's non-compliance with contractual arrangements should be dealt with as part of those contractual arrangements.
- 4.38 The Commission considers that services or system augmentation to connect a load or embedded generator are captured as part of the standard connection service or an above standard connection or an upgraded connection service.
- 4.39 The Commission does not consider that connection point services should be included as a separate excluded service or alternative control service.

Investigation and testing services

- 4.40 PWC Networks has proposed a new alternative control service to make specialised test equipment and trained staff available as a service to customers to rent or for in-house electrical testing and investigation, as required by customers. Provision of equipment and/or personnel would be on an 'as available' basis when not needed in relation to the provision of regulated network access services.
- 4.41 As this service is not a network service, the Commission considers that this should be classified as an unregulated service, that is, an excluded service under clause 72(2) of the NT Network Access Code.

Provision of non-standard street light assets

- 4.42 PWC Networks has proposed a new alternative control service for the provision of non-standard streetlight services. This is a quoted service for non-standard street lights, with a fee-based service alternative control service proposed for the provision, construction and maintenance of standard street lights.
- 4.43 As discussed above, distinguishing between alternative control services which are provided based on a schedule of fees and those which are provided on a quoted basis is not required for the purposes of determining excluded network access services under the NT Network Access Code. However, to facilitate alignment with the requirements of the NER, the Commission will continue to separately specify these services.
- 4.44 The Commission is satisfied that a specific service for provision of non-standard street lights as described by PWC Networks is reasonable.

Administrative services – miscellaneous

- 4.45 PWC Networks has proposed a new alternative control service for the provision of administrative services. PWC Networks has explained this fee by providing examples of activities that would attract a charge such as arranging permits for high load transport escorts and an application for connection fee for new or upgraded supply.
- 4.46 As PWC Networks intends to provide high load transport escorts as a quoted service, the Commission considers that a pass through of any fees incurred by PWC Networks in arranging permits should be incorporated in this existing charge.

- 4.47 With respect to the second example provided by PWC Networks, the Commission does not consider application for connection fees in addition to the charge for providing connection services are warranted.
- 4.48 For these reasons, the Commission does not consider that administrative services - miscellaneous should be an excluded service or alternative control service.

Travel costs

- 4.49 PWC Networks has proposed a new alternative control service for travel costs to attend rural locations.
- 4.50 The Commission is satisfied that a specific service providing for the recovery of excessive travel costs is reasonable, but is concerned that PWC Networks use of 'rural locations' does not accurately describe the determinant of excessive cost. For example, the area commonly referred to as the 'Darwin rural area' includes locations within 50km of the CBD. The Commission has amended this descriptor to clarify that only travel in excess of 100km from the relevant PWC Networks depot will incur additional travel costs. The Commission understands that this is consistent with current practice.

Provision of network capacity in excess of Network Technical Code requirements

- 4.51 PWC Networks has proposed an new alternative control service for provision of network capacity in excess of Network Technical Code requirements.
- 4.52 The Commission considers that PWC Networks has not justified:
- 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; and
 - whether the proposal to apply the tariff as a fee-based service is appropriate, given it is effectively a penalty for a non-compliant power factor and an incentive pricing signal rather than cost-recovery for the provision of a separate service.
- 4.53 The NT Network Access Code requires that for a service to be determined to be an excluded service, the Commission must be satisfied that the costs associated with that service can be excluded from the cost base used for the purpose of calculating the revenue cap. The Commission is not satisfied that the specific costs of a low power factor of a specific customer can be identified.
- 4.54 The NTMEU also raised concerns regarding equity considerations, noting that determining whether a network user has a low power factor is dependent on the network user having appropriate metering to allow measurement to occur:
- This means that only consumers that have appropriate metering will be exposed to the alternative control service fee even though there will be many others with low power factors which can't be measured but still have a similar impact on the network carrying capacity. This is inequitable. (page.17)*
- 4.55 For these reasons, the Commission does not consider that provision of network capacity in excess of Network Technical Code requirements should be an excluded service or alternative control service.

Commission's conclusions

- 4.56 Having considered PWC Networks' regulatory proposal and submissions made in the course of consultation, the Commission has decided to accept the classification of services proposed by PWC Networks with specific exceptions. These are:

- amendment of the descriptor for above standard or non-standard connection services to clarify that only additional costs incurred above those for a standard connection service are to be recovered;
- amendment of the descriptor for above standard or non-standard metering services to clarify that only additional costs incurred above those for a standard metering service are to be recovered;
- amendment of the descriptor for travel costs to clarify that only travel in excess of 100km from the relevant PWC Networks depot will incur additional travel costs;
- classification of equipment rental charges for non-network purposes as an excluded service under clause 72(2) (unregulated service), rather than under clause 72(3) (alternative control service);
- classification of investigation and testing services as an excluded service under clause 72(2) (unregulated service), rather than under clause 72(3) (alternative control service);
- that the proposed new alternative control service for administrative services - miscellaneous is not approved; and
- that the proposed new alternative control service for provision of network capacity in excess of Network Technical Code requirements is not approved.

Commission's draft decision

4.57 In accordance with clause 72 of the NT Network Access Code, the Commission's determination of excluded services is set out in Appendix A of this paper.

4.58 Classification of services consistent with clause 6.12.1(1) of the NER is set out in Table 4.3 below.

Table 4.3: Commission's classification of services

Services classification	Service group	Activities description
Regulated network access service Standard control service	Network service (mandated standard)	Network services at the standard provided for in the Network Technical Code and in accordance with good electricity practice. Planning, designing and constructing the network. Maintaining and operating the network. Emergency response and administrative support.
Regulated network access service Standard control service	Energy only service for public lighting	Unmetered supply to street lights, traffic lights, advertising signs, CCTV cameras and similar applications where energy consumption may reasonably be estimated and it is not economic or practical to install, maintain and read a meter.
Regulated network access service Standard control service	Connection services (mandated standard)	Connection services at the standard provided for in the Network Technical Code and in accordance with good electricity practice. Commissioning of connection assets. Service connection. Installation inspection. Operating and maintaining connection assets.

Services classification	Service group	Activities description
Regulated network access service Standard control service	Metering services (mandated standard)	Metering services and meter data services provided to each user to meet legislated accuracy requirements and conform to good industry practice Provision, installation and commissioning of metering and associated equipment Periodic testing, maintenance and replacement of metering assets Meter data services, including collection, storage and management of metering data and routine transfer of data to participant billing systems Estimation of consumption for unmetered supply
Excluded network access services cl 72(3) Alternative control services – quoted service	Network services • above standard or non-standard services	Network services provided at the request of a network user with higher (or lower, where permissible) quality or reliability standards than are required under applicable legislation, codes or other regulatory instruments Extension or augmentation of the regulated network associated with the provision of a new connection point or upgrading the capability of an existing connection point to the extent that the network user is required to make a financial contribution in accordance with clause 80 of the NT Network Access Code
Excluded network access services cl 72(3) Alternative control services – quoted service	Connection services • above standard or non-standard services • new or up-graded connection services (to the extent that the user is required to make a financial contribution) • supply abolishment (to the extent that costs exceed the cost of abolishment of a standard connection service) • ancillary connection services	Connection services provided at the request of a network user with higher (or lower, where permissible) quality or reliability standards than are required under applicable legislation, codes or other regulatory instruments Ancillary connection services include: • responding to enquiries in relation to the provision of the non-standard connection • provision of technical specifications in relating to the connection • provision of duplicate supply • preliminary communications with networks user where more than 6 hours work is required.

Services classification	Service group	Activities description
Excluded network access services cl 72(3) Alternative control services – quoted service	Metering services • above standard or non-standard metering services • above standard or non-standard meter data services • ancillary metering services (to the extent that costs of providing the services exceed the cost of providing the same service with respect to a standard connection service) • unmetered supply services	Metering services and/or metering data services provided at the request of a network user of a type that exceeds the normal requirements for the type of user Ancillary connection services include: • installation and commissioning of non-standard metering and associated equipment • periodic testing of additional or non-standard metering equipment • maintenance and replacement of non-standard metering assets
Excluded network access services cl 72(3) Alternative control services – quoted service	Asset relocation, temporary disconnection and reconnection and temporary line insulation services	Removal, relocation or other temporary change to PWC Network assets at the request of a network user
Excluded network access services cl 72(3) Alternative control services – quoted service	Emergency recoverable works	Repairs to shared network or network connections caused by a third party (for example due to vehicle accident)
Excluded network access services cl 72(3) Alternative control services – quoted service	Services associated with temporary supply	Provision electric plant for temporary supply at the request of a network user Provision of temporary supplies at both low and high voltage at the request of a network user
Excluded network access services cl 72(3) Alternative control services – quoted service	Illegal connections and damage to network equipment	Costs incurred by PWC Networks as a result of a customer not complying with relevant contractual obligations Repair of equipment damaged by a network user or third party as a result of non-compliance with relevant contractual obligations
Excluded network access services cl 72(3) Alternative control services – quoted service	Provision of non-standard street light assets	Provision, construction and maintenance of street light assets based on non-standard designs or new technology such as LED
Excluded network access services cl 72(3) Alternative control services – quoted service	Wasted attendance	Additional costs incurred by PWC Networks where service provision could not be undertaken or completed as planned due to action or inaction the network user or their agent

Services classification	Service group	Activities description
Excluded network access services cl 72(3) Alternative control services – quoted service	Asset location and identification services	PWC Networks' identification of its assets, including location of buried cables, at the request of a network user
Excluded network access services cl 72(3) Alternative control services – quoted service	High load transport escorts	Provision of high load transport escort
Excluded network access services cl 72(3) Alternative control services – quoted service	Covering of low voltage mains	Coverage of low voltage mains at the request of a network user or other person
Excluded network access services cl 72(3) Alternative control services – fee-based service	Street light services	Provision, construction and maintenance of street lighting assets where those assets are not owned by PWC Networks
Excluded network access services cl 72(3) Alternative control services – fee-based service	Non-standard data services	Provision of non-standard data services
Excluded network access services cl 72(3) Alternative control services – fee-based service	Disconnection and reconnection	Providing temporary disconnection and reconnection of supply at a connection point at the request of a network user or market participant and in accordance with the terms of the Network Technical Code
Excluded network access services cl 72(3) Alternative control services – fee-based service	Fault response – not PWC Networks equipment	Attendance in response to advice of a fault by a network user where the fault is not associated with PWC Networks' assets or metering equipment
Excluded network access services cl 72(3) Alternative control services – fee-based service	Installation of minor equipment to the network	This includes but is not necessarily limited to: • installation of tiger tails on PWC Networks assets or polylogger test equipment at the user's premises • rental cost of minor equipment
Excluded network access services cl 72(3) Alternative control services – fee-based service	Travel costs	Where PWC Networks personnel are required to attend rural locations more than 100kms from the depot

Services classification	Service group	Activities description
Excluded network access services cl 72(2) Unregulated service	Equipment rental for non-network purposes	Equipment rental charges may be but are not necessarily limited to the following: • for the attachment of communications services such as coaxial or fibre optic cables • for pole attachments, ducts or conduits • for the use of tunnels or ducts by communications or other services
Excluded network access services cl 72(2) Unregulated service	Investigation and testing services	Investigation and testing services requested by a customer
Excluded network access services cl 72(2) Unregulated service	Contestable networks engineering consulting services	Consulting services provided by PWC Networks to third parties

CHAPTER 5

Control mechanism for standard control services

Introduction

- 5.1 A network price determination imposes controls over the prices, and revenues, that a network service provider may recover from providing regulated network access services. Regulated network access services are equivalent to services defined as standard control services in the NEM.²⁶
- 5.2 The Commission's Framework Statement, consistent with clause 6.8.1 of the NER, set out the control mechanism that will apply to standard control services provided by PWC Networks during the forthcoming regulatory control period. For PWC Networks' standard control services, this mechanism is a revenue cap of the prospective CPI minus X form.
- 5.3 This chapter discusses how this mechanism will be applied and sets out how the Commission will assess compliance with the mechanism during the forthcoming regulatory control period.

Regulatory requirements

NT Network Access Code

- 5.4 Clause 66(1) of the NT Network Access Code assigns responsibility to the Commission for determining the revenue or price caps to apply to the network service provider with regard to a network covered by that Code.
- 5.5 For the period covered by the 2014 Network Price Determination, fourth regulatory control period, the revenue or price caps that are to apply are to be determined by the Commission in a manner that:
 - (a) *in the regulator's opinion, most effectively achieves the desired outcomes set out in clause 63; and*
 - (b) *is consistent with generally accepted regulatory practice at the time.*²⁷
- 5.6 A revenue or price cap applies only to tariffs and charges for regulated network access services.
- 5.7 Regulated network access services mean all the network access services supplied by PWC Networks other than those specified by the Commission under clause 72 of the NT Network Access Code²⁸.

²⁶ To facilitate reference to the NER, references throughout this paper to 'standard control services' mean the regulated network access services as defined in the NT Network Access Code.

²⁷ NT Network Access Code clause cl.66(3).

²⁸ NT Network Access Code clause cl.3.

National Electricity Rules

- 5.8 Clause 6.12.1 the NER requires the AER to make the following constituent decisions which are related to the form of control mechanism for standard control services:
- a decision on the control mechanism (including the X factor) for standard control services (clause 6.12.1(11));
 - a decision on how compliance with the relevant control mechanism is to be demonstrated (clause 6.12.1(13)); and
 - a decision on how the DNSP is to report to the AER on its recovery of transmission use of system (TUOS) charges for each regulatory year and adjustments to be made in pricing proposals in subsequent years to account for TUOS over or under recoveries (clause 6.12.1(19)).
- 5.9 Clause 6.2.5(b) of the NER provides that the control mechanism may consist of:
- (1) *a schedule of fixed prices; or*
 - (2) *caps on the prices of individual services; or*
 - (3) *caps on the revenue to be derived from a particular combination of services; or*
 - (4) *tariff basket price control; or*
 - (5) *revenue yield control; or*
 - (6) *a combination of any of the above.*
- 5.10 Clause 6.2.5(c) lists the matters to which the AER must have regard in deciding on a control mechanism for standard control services.
- 5.11 Clause 6.18.6 of the NER sets a side constraint of 2 per cent on the amount that weighted average revenue to be raised from a tariff class can be increased each year.

Framework and approach

- 5.12 In its Framework Statement, the Commission set out the control mechanism that will apply to standard control services provided by PWC Networks during the next regulatory control period. This mechanism is a revenue cap of the prospective CPI minus X form on the basis that:
- network costs are largely fixed, and given that the effect on demand of foreshadowed increases in retail prices is largely unknown at this time, making robust demand forecasting difficult, a revenue cap is more likely to provide PWC Networks with sufficient revenue, but no more;
 - while a revenue cap can lead to more price volatility, price signals to most end-use customers in final retail prices are constrained by the imposition of the electricity pricing order; and
 - it is consistent with current views of the AER and expected future direction in the NEM.
- 5.13 A side constraint will also be applied such that the weighted average price for each individual end-use customer for a particular year of the regulatory control period is not to exceed the corresponding weighted average price for that individual end-use customer for the preceding regulatory year by more than a permissible percentage.
- 5.14 An unders and overs account will monitor any variation between the maximum allowable revenue (MAR), as determined by the Commission, and the actual revenue collected by the network service provider. A notional interest charge, or an interest credit as appropriate, will be applied on the cumulative balance at the end of each financial year.

- 5.15 The Framework Statement also provided for tolerance margins to be applied in adjusting future year tariffs for under or over recoveries compared to the MAR.

PWC Networks regulatory proposal

Form of control

- 5.16 PWC Networks proposed a revenue cap control mechanism, of a CPI-X form for its standard control services, consistent with the Commission's Framework Statement. The building blocks that make up PWC Networks' revenue cap are discussed in Chapter 15.

Application of the revenue cap

- 5.17 PWC Networks proposed annual adjustments to its annual revenue allowance for:
- any under or over recoveries related to regulated network charges; and
 - any pass throughs approved by the regulator during the forthcoming regulatory control period.

Under/over recoveries

- 5.18 PWC Networks proposed an approach to the treatment of under or over recoveries related to regulated network charges for the forthcoming regulatory control period in accordance with the Commission's Framework Statement.
- 5.19 Under this approach, the balance of the unders and overs account is assessed at the end of each regulatory year (based on two year lagged data). The balance of the unders and overs account would be adjusted for the time value of money (that is, indexed by the nominal WACC) and an adjustment made to the PWC Networks' revenues in the next regulatory year to offset the balance.
- 5.20 PWC Networks proposed that the size of the adjustment to revenues for under or over recoveries would depend on tolerance limits that are consistent those set out in the Commission's Framework Statement, specifically:
- less than 2 per cent – PWC Networks proposed that the under or over recovery will be cleared within one regulatory year;
 - between 2 per cent and 5 per cent – PWC Networks proposed the under or over recovery can be spread over two regulatory years; and
 - greater than 5 per cent – PWC Networks proposed to submit a plan to the Commission detailing how it proposes to clear the balance.

Side constraints

- 5.21 PWC Networks proposed that the side constraint formula for standard control services would be applied to tariff classes, rather than customers, consistent with clause 6.18 of the NER.
- 5.22 A maximum permissible change of 2 per cent on any increase in the weighted average revenue of each tariff class would apply in any regulatory year.

Submissions

- 5.23 The NTMEU commented that a revenue cap approach was preferable to continuing with the price cap form of regulation for PWC Networks in the forthcoming regulatory control period and noted that there were some constraints as to how the annual under or over recovery of revenue would be adjusted. The NTMEU supported the Commission's approach in this regard.

5.24 No other submissions were received on the form of control.

Issues and Commission's considerations

Form of control

5.25 PWC Networks has proposed a revenue cap for its standard control services. The Commission accepts PWC Networks proposed form of control as it is consistent with the Commission's decision in its Framework Statement. The revenue cap will take the form of a CPI-X approach, with the X factors based on the various building block costs. These building block costs and the calculation of the X factors are discussed in Chapter 15.

Application of the revenue caps

Unders and overs account

- 5.26 The approach proposed by PWC Networks is the approach set out in the Commission's Framework Statement. This approach is consistent with the approach applied by the Commission in the first regulatory control period (that is, the last time a revenue cap form of control was used in the Territory) and with the approach currently used by the AER for Queensland and Tasmanian DNSPs who are subject to a revenue cap form of control.
- 5.27 The Commission considers that this approach will allow PWC Networks to recover its approved revenue over time in a manner that is neutral in net present value (NPV) terms.
- 5.28 The Commission also accepts PWC Networks' proposal to include the tolerance limits in the settlement of this account.
- 5.29 The operation of the unders and overs account is detailed in Appendix B.

Pass throughs

5.30 The Commission accepts that PWC Networks' allowed revenues will be adjusted for approved cost pass throughs, subject to legal clarification of the scope for such arrangements in the NT Network Access Code. Chapter 14 provides further detail on the costs that PWC Networks may seek to pass through during the forthcoming regulatory control period.

Side constraints

- 5.31 PWC Networks has proposed that side constraints be applied to tariff classes, rather than individual customers. That is, the side constraint would be applied to the weighted average revenue of each tariff class in any regulatory year, rather than to the weighted average tariff of the individual customer.
- 5.32 The Commission notes that practice to date has been for the side constraint to be applied to customers covered by the general Electricity Pricing Order (which sets the retail tariff for all customers using less than 750MWh of electricity per annum) as a single class, and to be applied to individual customers for those customers on negotiated contracts²⁹.

²⁹ This includes customers using between 750MWh and 2GWh per annum, for whom there is currently a Pricing Order in place that limits the rate at which PWC can increase an individual customer's retail tariff.

- 5.33 PWC Networks has not provided details on the possible impact of this change in approach on individual customers. The Commission is concerned that, by applying the side constraint to the revenue for the tariff class, some customers may be subject to higher increases which are offset by correspondingly lower increases for other customers.
- 5.34 In approving PWC Networks' tariffs for 2013-14, the side constraint was only required to be calculated for 195 individual customers. The Commission does not consider that this imposes an unduly onerous burden on PWC Networks.
- 5.35 In the absence of information on the impact on individual customers, the Commission's preference is to continue the existing practice of assessing the side constraint for individual customers where those customers are on a negotiated contract.

Commission's conclusions

- 5.36 As part of its pricing proposals to be submitted to the Commission in accordance with clause 78(1) of the NT Network Access Code for each year of the regulatory control period, PWC Networks must submit to the Commission proposed tariffs and charging parameters which lead to expected revenues consistent with the formula set out below:

$$\sum_{i=1}^n \sum_{j=1}^m p_t^{ij} \times q_t^{ij} \leq R_{t-1} \times (1+CPI_t) \times (1-X_t) \times (1 \pm \text{passthrough}_t) \pm \Delta R_t$$

where:

R_{t-1}	is the revenue in year $t-1$
CPI_t	is the annual percentage change in the ABS Consumer Price Index All Groups, Weighted Average of Eight Capital Cities from March in regulatory year $t-2$ to March in regulatory year $t-1$
X_t	is the allowed real change in revenue from year $t-1$ to year t of the regulatory control period as determined by the Commission
<i>Passthrough</i>	is any pass through amount in year t determined by the Commission, expressed as a percentage of the annual revenue
ΔR_t	is the overs and unders adjustment to revenue in year t
n	is the number of network tariffs
m	is the number of tariff components
p_t^{ij}	is the price of component i of tariff j in year t
q_t^{ij}	is the forecast volume of component i of tariff j in year t

- 5.37 The Commission has accepted the side constraint of 2 per cent proposed by PWC Networks for the draft determination, but requires that for customers using more than 750MWh per annum, the side constraint is to be applied with respect to each individual customer, rather than to the tariff class as a whole.
- 5.38 In its annual pricing proposals, PWC Networks will be required to demonstrate that its proposed prices for the next year (t) will meet the following side constraints formula

for the tariff class of customers using less than 750MWh per annum and for individual customers using more than 750MWh per annum:

$$\frac{\sum_{j=1}^m p_t^j \times q_{t-2}^j}{\sum_{j=1}^m p_{t-1}^j \times q_{t-2}^j} \leq (1 + CPI_t) \times (1 - X_t) \times (1 + Y_t) \times (1 \pm \text{passthrough}_t)$$

where:

CPI_t	is the annual percentage change in the ABS Consumer Price Index All Groups, Weighted Average of Eight Capital Cities from March in regulatory year $t-2$ to March in regulatory year $t-1$
X_t	is the allowed real change in revenue from year $t-1$ to year t of the regulatory control period as determined by the Commission
Y_t	is the side constraint on revenue recovered from a tariff class or customer from year $t-1$ to year t of the regulatory control period as determined by the Commission
<i>Passthrough</i>	is any pass through amount in year t determined by the Commission, expressed as a percentage of the annual revenue
m	the number of tariff components
p_t^j	is the proposed price for component j of the tariff class in year t
p_{t-1}^j	is the price charged for component j of the tariff class in year $t-1$
q_{t-2}^j	is the actual volume of component j of the tariff class in year $t-2$

Commission's draft decision

- 5.39 In accordance with clause 66(1) of the NT Network Access Code, the Commission has decided that the basis of the control mechanism for regulated network access services provided by PWC Networks is a revenue cap of the prospective CPI minus X form.
- 5.40 The methodology used to determine the revenue cap is the building block approach.
- 5.41 The revenue cap for any given regulatory year is the MAR for that regulatory year (as calculated using the formula in paragraph 5.36 of the decision) which includes any under or over recovery adjustment required to move the unders and overs account (as set out in Appendix B) to zero (subject to the tolerance limits).
- 5.42 The side constraints to apply to the price movements of each of PWC Networks' tariff classes must be consistent with the formula in paragraph 5.38 of this draft decision.
- 5.43 The side constraint is to be applied to the individual price paths for those customers on negotiated contracts.

CHAPTER 6

Cost allocation methodology

Introduction

- 6.1 Effective cost allocation aims to inform business decision making by improving understanding of the true costs of operating the business and to prevent distortions from cost shifting or incorrect allocation of costs between, firstly, the regulated networks business and any other lines of business, and secondly, between standard control, alternative control, negotiated distribution and other services provided by the regulated networks business. In achieving this objective, cost allocation prevents distortionary cross-subsidisation between the different businesses or services.
- 6.2 In addition, by allocating costs transparently, it enhances the ability of the Commission to ensure that only efficient costs relevant to the provision of a service are passed through to customers.

Regulatory requirements

NT Network Access Code

- 6.3 Clause 7A of the NT Network Access Code requires that:
- The network provider must keep the business of operating the electricity network separate from any other business conducted by the network provider or any associate or related body corporate of the network provider in the manner and to the extent specified in a ring-fencing code to be determined by the regulator.*
- 6.4 The Northern Territory Electricity Ring-fencing Code version 3³⁰ took effect from 1 January 2009.
- 6.5 Clause 7 of the NT Network Access Code requires, among other things:
- (1) *The network provider must keep accounts and records relating to its electricity network business that give a true and fair view of the business (as distinct from other businesses carried on by the network provider or any associate or related body corporate of the network provider).*
- 6.6 Further, the accounts must comply with any guidelines published by the Commission³¹ and be kept in a way that gives sufficient information to enable the pricing principles and methodologies set out in Part 3 of the NT Network Access Code to be applied in a reasonable manner³².

³⁰ Utilities Commission, [Northern Territory Electricity Ring-fencing Code, version 3](#), January 2009

³¹ NT Network Access Code clause cl.7(3)

³² NT Network Access Code clause cl.7(4)(c)

6.7 Specific to access pricing, clause 65 of the NT Network Access Code sets out the requirements for information disclosure to the regulator by service providers:

- (1) *Before the network or service provider publishes the annual pricing schedules required under this Part, it must within a reasonable time before doing so (or a period set by this Code or by the regulator) provide the regulator with:*
 - (a) *information relating to the proposed prices that is required under the arrangements set out in Chapters 7 and 9; and*
 - (b) *any other information that the regulator reasonably requires for the purpose of performing his or her functions.*

...

- (9) *If information is provided in the form of certified annual financial statements, the financial statements must provide a true and fair statement of the financial and operating performance for the reporting period and be in a form and be provided by the date determined by the regulator.*
- (10) *Certified annual financial statements submitted under subclause (1) may be used by the regulator:*
 - (a) *to monitor the compliance of the network provider with the revenue or price cap;*
 - (b) ***to assess the allocation of costs between services that are subject to regulation under the revenue or price cap and services or activities that are not and to identify any cross-subsidy between these different types of services or activities; and (emphasis added)***
 - (c) *to collate data regarding the financial, economic and operational performance of the network provider and to be used as input to the regulator's decision making regarding the setting of revenue or price caps.*

National Electricity Rules

- 6.8 In the NEM, development of cost allocation methodologies by DNSPs and approval of these by the AER takes place outside the price determination process.
- 6.9 Clause 6.15.3 of the NER requires the AER to make guidelines relating to the preparation by a DNSP of its cost allocation method (CAM).
- 6.10 The current Cost Allocation Guidelines³³ were published in June 2008.
- 6.11 Clause 6.15.4 of the NER sets out the requirements for each DNSP in preparing and submitting a CAM to the AER for approval. These requirements include that DNSPs submit a proposed CAM to the AER by 1 January 2009 and that the proposed CAMs must give effect to, and be consistent, with the Guidelines issued by the AER.
- 6.12 As part of giving any approval, the AER may, after consulting with the relevant DNSP, amend the CAM submitted to it, in which case the CAM as so amended will be taken to be approved by the AER.
- 6.13 The AER may amend the Guidelines from time to time, following public consultation. A DNSP may submit a revised CAM to the AER for approval at any time.

³³ Australian Energy Regulator, [Electricity Distribution Network Service Providers - Cost Allocation Guidelines](#), June 2008.

Framework and approach

- 6.14 In its Framework Statement, the Commission noted that, while the NT Network Access Code does not explicitly require the network service provider to submit a cost allocation methodology to the Commission, the network service provider is implicitly required to allocate costs between different categories of distribution services.
- 6.15 However, noting PWC Networks' resource constraints, the Commission did not require PWC to fully comply with the AER's Cost Allocation Guidelines, but required PWC to fully document its existing cost allocation methodology such that the following can be audited against it:
- allocation of costs to the regulated network business;
 - allocation of costs between standard control services and alternative control services; and
 - allocation of costs between customer classes and geographic regions.

PWC Networks' regulatory proposal

- 6.16 PWC Networks submitted a CAM as part of its regulatory proposal.
- 6.17 PWC Networks' advised that the CAM was prepared for the approval of the Commission, in a manner that contained detailed principles, policies and methodology, having regard to the NER requirements.

Submissions

- 6.18 While making no specific comment on PWC Networks' CAM, the NTMEU noted that:
- ...as PWC is a multi-utility, it has the ability to maximise the allocation of overhead costs to regulated elements of its portfolio so as to minimise the overhead share carried by its unregulated elements. (page.36)*
- 6.19 No further submissions were received on the cost allocation methodology.

Issues and Commission's considerations

- 6.20 PWC assigns the direct cost of services where they are provided between its business divisions (including PWC Networks) wherever feasible. The Commission understands this to mean that where a corporate support unit provides a specific service to an operating business unit (for example employee services undertaking specific recruitment activity for PWC Networks, or the economics and regulation unit assisting with the preparation of PWC Networks' regulatory proposal), the cost will be directly attributed to the business unit, with a corresponding credit to the corporate support unit.
- 6.21 The remaining costs of each corporate support unit are allocated to each business unit on a causal basis using an appropriate allocator. The method and rationale underlying the calculation of these allocators are specified in the CAM.
- 6.22 Where one operating business unit provides a service to another operating business unit, a service level agreement (SLA) is entered into, which details the services to be provided and the fees for these services. The CAM sets out the method and rationale underlying the calculation of the fees associated with SLAs to which PWC Networks is a party.

- 6.23 Within PWC Networks, the cost allocations to standard network access services, alternative control services and unregulated services³⁴ are less well developed. With the exception of alternative control services for streetlighting, which are directly attributable and separately recorded, allocation of costs between standard control services and alternative control services are determined manually in an Excel spreadsheet. No information has been provided on how costs are allocated to unregulated services.
- 6.24 The Commission considers that PWC Networks has met the requirements (substantially modified from those specified by the AER) set by the Commission in its Framework Statement.
- 6.25 However, the Commission considers that the CAM could be improved by:
- including a statement regarding the nature, scope and purpose of the document (beyond satisfying requirements set by the Commission) and the way in which it is to be used by PWC;
 - clarifying the accountabilities within the organisation for implementing the CAM, responsibilities for updating, maintaining and applying the CAM, and for internal monitoring and reporting on its application;
 - providing details of how direct costs are processed through PWC's financial systems, possibly illustrated by mapping the chart of accounts;
 - providing further details of how directly attributable costs for services provided between business units are determined;
 - providing further details of the process for establishing the monthly journals to be uploaded to the general ledger system, including accountabilities for calculating and approving the percentage rates; and
 - providing further details of how PWC maintains records of the attribution or allocation of costs, for example the outputs that are obtained from the financial management system such as financial reports or views of the posting of financial transactions that can be produced depending on the nature of the enquiry, and the safeguards in place to ensure that records cannot be modified or deleted;
 - further development of cost allocations between standard control services, alternative control services and unregulated services.
- 6.26 PB undertook a detailed assessment of the methodology and approach taken by PWC to allocate the corporate and shared services between business divisions. PB reviewed the allocation method and rationale used for each division within the corporate business units and expressed the view that suitable drivers were used for each allocation.
- 6.27 The Commission's detailed analysis of capital and operating expenditure forecasts has not identified any costs attributable to the wider Corporation included in PWC Networks' costs.
- 6.28 In assessing the level of shared corporate costs allocated to PWC Networks, PB undertook a detailed assessment of the methodology and approach taken by PWC to allocate the corporate and shared services between the divisions. The Commission is satisfied that the allocation method and rationale used for each division within the corporate business units are based on a suitable driver for each allocation.

³⁴ PWC Networks does not provide any services classified that would be classified as negotiated distribution services under the NER.

Commission's conclusions

- 6.29 The Commission's Framework Statement noted that full adoption of an approach consistent with the AER processes may not be practical in the Territory at this time due to resourcing constraints and economies of scale.
- 6.30 However, the Commission notes that, over the course of the forthcoming regulatory control period, progress will be required in the development of the CAM and its application to the regulatory process, particularly with respect to the allocation of costs between network access services. In addition to enhancing the transparency, reliability and certainty of the price determination process, a more comprehensive and defined CAM will be required to enable effective transition to national regulation by the AER.
- 6.31 Cost allocation is also a key underpinning for structural separation of the supply chain, which is likely to occur in the course of the forthcoming regulatory control period.

Commission's draft decision

- 6.32 The Commission has accepted that PWC Networks has documented its existing cost allocation methodology, as required in the Commission's Framework Statement.
- 6.33 The Commission considers that further progress will be required in the development of the CAM over the forthcoming regulatory control period to align with the requirements of the NER.

CHAPTER 7

Opening regulatory asset base

Introduction

- 7.1 This chapter sets out the method used by the Commission to determine the opening RAB for the forthcoming regulatory control period. The opening RAB will be used to calculate the annual building block revenue requirements.

Regulatory requirements

NT Network Access Code

- 7.2 Clause 68 of the NT Network Access Code requires the Commission, in setting a revenue or price cap, to take into account the revenue requirements of the network service provider during the relevant financial year or years having regard to a number of factors.
- 7.3 One of these factors is:
- (e) *the provision of a return on efficient capital investment undertaken by the network provider in order to maintain or extend network capacity that is commensurate with the commercial and regulatory risks involved;*
- 7.4 Schedule 7 of the NT Network Access Code sets out how the network asset base should be identified and measured.
- 7.5 Clause 6 of Schedule 7 sets out the basis for valuing assets for the second and subsequent regulatory control periods, with any valuations or revaluations to be undertaken on a basis approved by the Commission. It also provides that:
- (2) *In approving the basis of asset valuation to be used, the regulator must have regard to:*
 - (a) *the agreement of the Council of Australian Governments of 19 August 1994 that deprival value should be the preferred approach to valuing network assets;*
 - (b) *any subsequent decisions of the Council of Australian Governments regarding the valuation of public sector assets; and*
 - (c) *generally accepted regulatory practice at the time.*

National Electricity Rules

- 7.6 Clause 6.5.1 of the NER outlines the approach to be used by the AER to determine the opening RAB for a distribution determination. Consistent with the requirements of this clause, the AER published an asset base roll forward model (RFM) which sets out the method for determining the roll forward of the RAB.³⁵

³⁵ AER, [Final decision, Electricity distribution network service providers, Roll forward model](#), June 2008.

- 7.7 Clause S6.2.1(c)(1) of the NER provides that the RAB for any DNSP for the first year of the next regulatory control period must be determined by rolling forward the relevant RAB value set out in the schedule.
- 7.8 For other distribution systems (that is, those not specified in the schedule under clause S6.2.1(c)(1)), clause S6.2.1(d) specifies that:
- (2) The value of the regulatory asset base for that distribution system as at the beginning of the first regulatory year of the first regulatory control period for the relevant Distribution Network Service Provider is the prudent and efficient value of the assets that are used by the provider to provide those standard control services (but only to the extent that they are used to provide such services), as determined by the AER. In determining this value, the AER must have regard to the matters referred to in clause S6.2.2.*

Framework and approach

- 7.9 In its Framework Statement, the Commission set out its preferred approach to adopt a RFM, largely modelled on the AER's published RFM and its accompanying handbook, for use by the network service provider in the 2014 Network Price Determination to roll forward the RAB, which was set by the Commission at \$350.0 million (excluding gifted assets) as at 1 July 2002 (in July 2002 dollars) (the Off Ramp Decision³⁶).

PWC Networks regulatory proposal

- 7.10 PWC Networks proposed an opening RAB for the forthcoming regulatory control period of \$930.1 million as at 1 July 2014. The proposed opening RAB is based on a DORC³⁷ valuation undertaken for PWC Networks by Sinclair Knight Mertz (SKM) of \$856.2 million as at 1 July 2013, rolled forward for one year using the AER's RFM.
- 7.11 PWC Networks argued that:
- The method that was adopted by jurisdictional regulators across Australia for the initial valuation of assets under the building block model was the depreciated optimised replacement cost (ODRC) methodology. This approach avoids the circularity associated with the regulator estimating an asset value that is supported by a revenue stream that is determined by the regulator. (page.124)*
- 7.12 Although noting that RAB values for NEM DNSPs are based on a roll forward of initial RAB values specified in the NER, PWC contends that the values prescribed in the NER are based on DORC for the respective DNSPs upon their entry to the NEM and exposure of their business to the NER framework.
- 7.13 PWC Networks further argued that the concerns that led to the Commission's Off-ramp Decision relating to deficiencies in its asset register have been addressed:
- Based on its transition to a world class asset management system, Maximo, and the positive findings of the SKM review of its data integrity, Power Networks believes that the*

³⁶ Utilities Commission, [Networks Pricing: Asset Valuation Off-Ramp Final Decision Statement Of Reasons](#), April 2005.

³⁷ In its regulatory proposal, PWC Networks has termed this ODRC. The two acronyms, DORC and ODRC, have the same meaning.

accuracy of its asset records is now equivalent to best practice levels, and therefore provides substantial confidence in the robustness of the valuation outputs. (page.129)

- 7.14 PWC Networks contends that basing the opening RAB on the 2013 SKM DORC valuation delivers a more appropriate means of establishing the efficient value of investment in the network.

Table 7.1: PWC Networks proposed RAB roll forward for the current regulatory control period (\$M, nominal) based on 2013 SKM DORC valuation

	Actual			Estimate	
	2009-10	2010-11	2011-12	2012-13	2013-14
Opening RAB at 1 July					856.18
Net capex					93.20
Regulatory depreciation					19.32
Closing balance					930.06
Contributed assets					9.64
Inflation rate					2.57%

Source: PWC RFM (ODRC)

- 7.15 PWC Networks also provided a roll forward of the asset base based on the Commission's valuation as set in the Off-ramp Decision in March 2005.

Table 7.2: PWC Networks provided RAB roll forward for the current regulatory control period (\$M, nominal) based on Off-ramp Decision

		Actual			Estimate	
	2008-09 ^(a)	2009-10	2010-11	2011-12	2012-13	2013-14
Opening RAB at 1 July	460.40	514.80	585.07	669.40	734.32	832.89
Net capex	56.56	80.38	91.08	77.49	103.44	93.22
Regulatory depreciation	15.56	- 10.11	- 6.75	- 12.57	- 4.87	- 5.28
Difference between forecast and actual for last year of previous regulatory control period	13.40					- 4.48
Closing balance	514.80	585.07	669.40	734.32	832.89	916.35
Contributed assets	18.56	10.88	7.31	11.12	14.85	9.64
Inflation rate	3.75%	2.35%	3.11%	2.30%	2.57%	2.66%

Source: PWC RFM (Commission preferred)

(a) from 2009 Network Price Determination, [Po adjustment model FINAL](#), worksheet 'RAB Roll Forward', 2008-09 opening RAB \$460.518 million less streetlights \$0.116 million

Submissions

- 7.16 The NTMEU submitted that the opening RAB should be based on a roll forward of the asset base previously determined by the Commission.
- 7.17 The NTMEU argued that:
- The only reason to set the RAB using a DORC approach is because the historic value of the assets is unknown. This is the case when a vertically integrated firm cannot specifically point to the cost of the network assets it has provided in the past.*
- However, the UC has previously determined an asset base and once set, needs no further reassessment.”(page.24*
- 7.18 Further:
- The NTMEU does not agree that the PWC assets should be "re-DORCed" as this inappropriately increases the value of the assets and that the previously agreed asset base should be rolled forward as has been done in the past. (page.25*
- 7.19 No other submissions were received on the opening RAB.

Issues and Commission's considerations

- 7.20 A key aspect of any building block approach to regulation is the value assigned to the opening RAB. The RAB has a substantial impact on network charges through the return of capital (depreciation) and return on capital components of the allowed revenue.
- 7.21 The Commission's Off-ramp Decision was initiated because, during the 2004 Network Price Determination process, PWC Networks was unable to confirm the accuracy of its estimates of the DORC value of the regulated network assets that were in service on 1 July 1999 or the roll-forward in these values to 1 July 2004.
- 7.22 The Commission then established a total value of \$350.0 million (excluding gifted assets) as at 1 July 2002 (in July 2002 dollars), with PWC Networks then allocating this across asset categories based on a pro-rata allocation in line with its best estimates of the existing asset base at that time.
- 7.23 The Commission notes that the DORC value for the opening RAB proposed by PWC Networks is not significantly greater than the value obtained by rolling forward the current RAB.
- 7.24 Given the small difference between the two outcomes, the Commission also considered the constitution of the RAB. In its Off-ramp Decision, the Commission only set an aggregate value for the total RAB. The Commission accepted the disaggregation into asset classes provided by PWC Networks, established on a 'best endeavours' basis, based on information available at that time. The SKM review provides improved information on the constitution of the asset base.
- 7.25 The SKM review is the most detailed examination of the asset base and the Commission consequently accepts that it has sufficient authority to warrant its acceptance in lieu of the imputed asset value determined for 1 July 2002. In addition, the Commission notes that the imputed value rolled forward since 1 July 2002 and the SKM valuation is substantially comparable, the \$14 million difference is statistically acceptable, and the valuation provides a transparent, detailed, reliable and stable base for future determinations. The certainty that is available in this opening RAB

value will also assist in the transition to regulation by the AER in the near future, presumably without the need for subsequent revisions to the RAB.

Table 7.3: Comparison of disaggregation of RAB into asset classes (\$M, nominal)

	2013 SKM valuation	Roll forward of 2009 NPD
System Capex		
Transmission terminal station	37.6	64.0
Zone substations	262.8	288.8
Transmission lines	165.5	156.6
Distribution mains	313.8	329.0
Distribution substations	83.9	21.8
Metering	7.5	4.9
Land and easements	33.9	11.7
Secondary systems - Control, communications & Protection	12.0	18.8
Other	0.4	- 0.7 ¹
Non-System Capex		
Non-network - IT and Communications Capex	3.1	0.0
Non-network - Motor Vehicles Capex	0.0	0.0
Non-network - Property Capex	0.0	0.0
Non-network - Plant & Equipment Capex	8.9	19.7
Non-network - Other capex	0.7	1.8
Total	930.1	916.4

Source: PWC Regulatory Proposal

1. Negative value due to adjustment in RFM for difference between forecast and actual capex values in the final year of the previous regulatory control period.

7.26 In light of this, the Commission sees advantages in adopting the opening RAB proposed by PWC Networks, as it provides a firm basis for the disaggregation of the asset base into asset classes going forward.

Escalation rate for RAB roll forward

7.27 The NER provides that the roll forward of the RAB be adjusted for actual inflation, consistent with the method used for the indexation of the control mechanism during the preceding regulatory control period.

- 7.28 The method used for indexation of the control mechanism during the current regulatory control period has been to use the Australian Bureau of Statistics (ABS) weighted average of eight capital cities³⁸.
- 7.29 In rolling forward the RAB from 2013 to 2014, PWC Networks has applied CPI based on a national forecast for 2013-14 provided by Deloitte Access Economics, as actual CPI will not be available at the time of the Commission's determination.
- 7.30 The Commission accepts this method as a practical approach for the draft decision.

Commission's conclusions

- 7.31 The Commission accepts the opening RAB proposed by PWC of \$930.1 million for standard control services. The Commission considers that the SKM review of the RAB provides a transparent and reliable asset value materially consistent with the Commission's estimated asset value developed for 1 July 2002. The proposed RAB value provides a level of granularity that will facilitate a greater degree of certainty in future determinations.
- 7.32 The Commission is satisfied that PWC Networks has completed the AER's RFM in accordance with the requirements of the NER.
- 7.33 The Commission will update the roll forward of PWC Networks' RAB with the most recent forecast of capital expenditure for 2013-14, and the latest actual CPI data at a time closer to its final determination.

Commission's draft decision

- 7.34 The Commission has determined that the opening asset base for PWC Networks as at 1 July 2014 is \$930.1 million.
- 7.35 The Commission will update the roll forward of PWC Networks' RAB with the most recent forecast of capital expenditure for 2013-14, and the latest actual CPI data at a time closer to its final determination.

³⁸ For pricing approvals in the current regulatory control period, the Commission has used the year on year four quarter Mar-Dec average of CPI (to remove any quarter on quarter volatility), rather than the quarter to quarter CPI used by the AER. For the forthcoming regulatory control period, the Commission will change its approach to the CPI adjustment to bring the Territory in to line with the approach commonly used by the AER. This should provide more certainty and consistency for future determinations.

CHAPTER 8

Demand forecasts

Introduction

- 8.1 PWC Networks must be able to deliver electricity to its customers and must build, operate and maintain its network to manage expected changes in the demand for electricity. PWC Networks therefore requires demand-driven capital expenditure (capex) and operating and maintenance expenditure (opex) so that its network can deliver a reliable supply of electricity when:
- the demand for electricity is at its peak (maximum demand);
 - new customers connect to the network; and
 - the overall consumption of electricity increases.
- 8.2 Maximum demand is a snapshot of the highest level of demand on PWC Networks' distribution system at a point in time.
- 8.3 New customer connections have an effect on the expenditure required to construct new connections and augment upstream infrastructure for the connected load. They also affect capital contributions and contributed assets received by PWC Networks.
- 8.4 Electricity consumption forecasts are important for setting tariff levels, but the Commission is not required to set tariffs in this determination. PWC Networks must submit its proposed prices for the first year of the forthcoming regulatory control period to the regulator for approval 60 days prior to start of the financial year.³⁹
- 8.5 This chapter discusses whether PWC Networks' demand forecasts reflect a reasonable expectation of the demand for standard control services over the forthcoming regulatory control period. The Commission also considers the extent to which the forecasts can be relied upon for the purposes of assessing the proposed load driven capex and whether PWC Networks' energy sales forecasts are appropriate inputs to the NTRM.

Regulatory requirements

NT Network Access Code

- 8.6 Clause 68 of the NT Network Access Code requires the Commission, in setting a revenue or price cap, to take into account the revenue requirements of the network service provider during the relevant financial year or years having regard to a number of factors.

³⁹ NT Network Access Code clause 78 (1).)

8.7 One of these factors is:

- (a) *the demand growth that the network provider is expected to service using any appropriate measure including but not limited to:*
 - (i) *energy consumption by category of network users or other relevant groups of persons who consume energy;*
 - (ii) *demand by category of network users or other relevant groups of persons who consume energy;*
 - (iii) *numbers of network users or other relevant groups of persons who consume energy by category of network users; and*
 - (iv) *length of the electricity network;*

National Electricity Rules

- 8.8 The NER requires DNSPs to provide a realistic expectation of the maximum demand forecast as part of addressing the capex and opex objectives and criteria under clauses 6.5.6(a)(1), 6.5.6(c)(3), 6.5.7(a)(1) and 6.5.7(c)(3).
- 8.9 Clause 6.5.6(a)(1) of the NER requires that a building block proposal must include the total forecast operating expenditure for the relevant regulatory control period which the DNSP considers is required to, amongst other things, meet or manage the expected demand for standard control services over that period.
- 8.10 Clause 6.5.6(c)(3) requires the AER to accept the forecast of required operating expenditure of a DNSP that is included in a building block proposal if the AER is satisfied that the total of the forecast operating expenditure for the regulatory control period reasonably reflects each of the operating expenditure criteria, including a realistic expectation of the demand forecast and cost inputs required to achieve the operating expenditure objectives.
- 8.11 Clause 6.5.7(a)(1) of the NER requires that a building block proposal must include the total forecast capital expenditure for the relevant regulatory control period which the DNSP considers is required to, amongst other things, meet or manage the expected demand for standard control services over that period.
- 8.12 Clause 6.5.7(c)(3) of the NER requires the AER to accept the forecast of required capital expenditure of a DNSP that is included in a building block proposal if the AER is satisfied that the total of the forecast capital expenditure for the regulatory control period reasonably reflects, amongst other things, a realistic expectation of the demand forecast and cost inputs required to achieve the capital expenditure objectives.
- 8.13 The NER also requires the AER, as part of its distribution determination, to make a constituent decision on appropriate amounts, values or inputs, under clause 6.12.1(10).

PWC Networks regulatory proposal

Table 8.1: PWC Networks maximum demand, customer number and energy consumption forecasts

	2014-15	2015-16	2016-17	2017-18	2018-19	Average annual growth 2014-19 (%)
Weather normalized system maximum demand (50% PoE) (MW)						
Darwin-Katherine	307.7	313.3	318.9	324.6	330.2	1.46
Alice Springs	55.2	54.9	54.7	54.4	54.2	- 0.36
Tennant Creek	7.3	7.4	7.4	7.5	7.5	0.55
Customer numbers (total)	81,844	83,834	85,878	87,978	90,134	2.03
Customer connections	1,960	2,020	2,075	2,103	2,190	2.90
Energy consumption (GWh)	1,743,346	1,764,240	1,768,815	1,779,910	1,791,075	0.55

Source: Derived from PWC Networks, Regulatory proposal, September 2013, RIN templates 6.1, 6.2 and 6.3 (confidential)

- 8.14 PWC Networks' proposal identified that economic activity in the Territory is proceeding apace in comparison to muted global economic growth and slower Australian economic growth. PWC Networks identified the INPEX Total joint venture Ichthys project (Ichthys) and noted that other private engineering construction, equipment and housing investments were at very high levels.
- 8.15 PWC Networks noted that Deloitte Access Economics had forecast:
...average annual five-year economic growth rate for the Territory through to 2016-17 to be 4.5 per cent compared to a national average annual growth rate of 3.0 per cent and is the highest growth rate of all jurisdictions over this period. (page.47)
- 8.16 PWC Networks also identified high levels of economic activity evident in Territory building approvals and increasing high rates of population growth. PWC Networks noted that the immediate to medium term economic outlook for the Territory was higher than average and higher than national levels.
- 8.17 PWC Networks identified that, although electricity demand is relatively price inelastic, the large increase in regulated retail prices on 1 January 2013 and further price increases from January 2014 were expected to have a dampening impact on energy consumption. However, the impact on maximum demand was expected to be much less significant.
- 8.18 PWC Networks noted the rapidly increasing number of photovoltaic (solar PV) installations, predominantly at domestic and small commercial premises. PWC Networks' regulatory proposal identified that while solar PV installations reduce the energy transmitted, they do not have a proportionate effect on demand as output is intermittent.
- 8.19 PWC Networks highlighted that its approach to network demand forecasting was documented in its Network Demand and Customer Connections Forecasting Procedure and that the approach was accepted as reasonable by the Commission in the Power System Review for 2011-12.

- 8.20 PWC Networks identified that global demand forecasts provided an indication of overall trends in network regions. They did not directly relate to the incidence of growth-related capex but rather were used as a check to ensure the sum of spatial demand forecasts, which influence both capex and opex, are in reasonable alignment.

Submissions

- 8.21 PWC Networks submitted that electricity demand would continue to grow over the price determination period. For example, PWC Networks referred to average annual growth forecasts for the Territory to 2016-17 of 4.5 per cent compared to 3 per cent annual average growth nationally.⁴⁰ Additionally, PWC Networks referred to the population growth rate forecast for 2016-17 of 1.7 per cent, compared to 1.6 per cent nationally, and up from 1.4 per cent in 2013-14.⁴¹
- 8.22 The NTMEU submitted that PWC Networks' forecasts were likely to be overstated as a result of reliance on overly optimistic growth expectations.⁴²
- 8.23 The Northern Territory Council of Social Services (NTCOSS) implicitly addressed demand growth forecasts, noting that growth in the number of low income households or the elderly would, in turn, raise affordability issues and imply potential growth in electricity demand as more residents would be at home during the day and using more electricity on airconditioning, cooking and entertainment. NTCOSS provided no data to support the argument that there was likely to be growth in low income households in the Territory or an increase in the daily usage patterns of such households.
- 8.24 NTCOSS argued that wages growth in the Territory, one factor influencing the economic outlook identified in PWC Networks' regulatory proposal, did not extend to all Territorians, particularly those on low incomes who continue to struggle with existing electricity prices, let alone any future increase. NTCOSS did not provide further details of this analysis. NTCOSS also commented that the growth in solar PV installations is not occurring in low income households and encouraged the Territory Government to find creative solutions to make energy efficiency measures more accessible to low income households.
- 8.25 Dr Clark noted in his submission that obtaining basic electricity system data on Territory grids has been difficult, and therefore he had limited capacity to present quantitative arguments. Dr Clark advised that demand data for the Darwin-Katherine system had been obtained (and incorporated in modelling work examining the impact of solar PV) from PWC, but that it was considered commercial-in-confidence. He urged the Commission to act aggressively in facilitating data requests into the public domain in all cases except where a clear and strong case of commercial sensitivity exists.

⁴⁰ PWC regulatory proposal page 47 cited Deloitte Access Economics, Territory Economic Review, July 2013, page. 11.

⁴¹ Ibid, page. 47.

⁴² NTMEU, Submission to the Utilities Commission on Power and Water Corporations Network Pricing proposal: 2014 Regulatory Reset, page.20.

- 8.26 Dr Clark also submitted that the arrival of retail parity for solar PV represents a key challenge for the networks business, yet PWC Networks' proposal makes no material attempt to examine this challenge and it would be difficult for the Commission to make a rational assessment of the totality of PWC Networks' proposal.

Issues and Commission's considerations

- 8.27 With technical advice from PB, the Commission undertook a review of the reasonableness of demand forecasts and projected growth scenarios using the principles set out in the NER as a guide. The Commission reviewed the reasonableness of the growth forecast, customer number forecast, projected customer usage and growth scenarios in the documentation provided by PWC Networks.
- 8.28 The Commission observes that PWC Networks' forecasts tended to prefer data indicative of higher growth, which may not be sustainable over time and may not be supported by other indicators of potential demand. For example, building approvals have been relatively flat over the period June 2009 and June 2013.⁴³ Also, steeply rising penetration of solar PV in the electricity market appears to indicate the contrary view: solar PV installation applications have risen from 284 in 2010-11 to 579 in 2012-13.⁴⁴ The growth in penetration of solar PV combined with other energy efficiency incentives mitigates against continually increasing peak demand over the period.
- 8.29 The Commission acknowledges PWC Networks' proposed growth rate is based on a range of factors including population growth forecast of 1.5 per cent, historical connection growth rate of 3.8 per cent and a five-year rolling average in dwelling approvals of 2.7 per cent and an historical growth in gross state product of 3.9 per cent.
- 8.30 PWC Networks' review and preparation of historical data as well as its weather normalisation practice generally aligns with industry practice. However, there are concerns about PWC Networks' general application of a least squares regression model and associated adjustments. Specifically, the use of a least squares regression model to project the linear trend component of the historical data inherently assumes that the underlying drivers of this linear trend continue, unmodified, for the forecast period. To account for this inherent limitation, PWC Networks applies adjustments based on expert judgement to derive resultant forecasts that consider factors such as expected economic conditions, technology, social impacts, spot loads and network configuration changes.
- 8.31 The Commission notes that spot loads and network configuration adjustments are documented at the time of the forecast through the 'Load Log Table' and a 'Transfer Log Table' respectively and that this practice provides transparency, repeatability and supports independent objective review of the forecast. However, while PWC Networks' Forecasting Procedure notes that the forecasting process includes

⁴³ PWC regulatory proposal page 47 cited Deloitte Access Economics, Territory Economic Review, July 2013, page. 11 Ibid, p. 47

⁴⁴ Ibid, p.48

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- consideration of ‘adjustments for changes in key drivers’, and that the ‘projection of regional demand is made after the consideration of economic indicators’, details of the method by which such adjustments are achieved were not provided.
- 8.32 An examination of examples of the forecasting procedures exhibited adjustments being made without supporting documentation to provide specific justification for these adjustments, the methodology used to apply the adjustments, details of the judgements employed or their impact on the forecasts.
- 8.33 The Commission’s view is that PWC Networks’ forecasting methodology is not sufficiently transparent or repeatable as details of the expert judgements employed are not clearly documented. Furthermore, the lack of documented detail regarding the expert judgements employed does not make it possible to objectively assess if there has been appropriate incorporation of key drivers of demand and exclusion of unjustified drivers.
- 8.34 Following examination of a number of forecasting examples, the Commission’s view is that the adjustments applied exhibit an upward bias in the trend derived directly from the least squares fit process.
- 8.35 While an increasing linear rate of growth in the forecast above the historical trend may be appropriate where the underlying drivers of demand are in the main expected to increase, no evidence was provided to support this upward bias.
- 8.36 The Commission shares the NTMEU view that PWC Networks has tended to overestimate growth in demand. PB’s view was that a three-year deferral in demand, particularly in the mid to latter part of the forecast period, should be applied when interpreting PWC Networks’ demand forecasts. The Commission did not seek an alternative demand forecast but rather PB identified where deferrals are warranted for some zone substation replacement projects (Casuarina by one year, Berrimah by two years and East Arm and Lovegrove to outside the forthcoming regulatory control period).
- 8.37 The Commission notes that while the Power System Review 2011-12 identified that PWC Networks’ approach to network demand forecasting was reasonable, for the purposes of determining the demand-supply balance, the Commission’s assessment of reasonableness for the 2014 Network Price Determination is based on the AER’s approach that PWC Networks’ forecasting techniques should demonstrate the following characteristics:
- accurate and unbiased data – an unbiased forecast of demand should include careful management of data quality (for example, removal of outliers, spurious values, data normalisation), and the forecasting model construction should be based on sound theoretical grounds that closely fit the observed data;
 - transparency and repeatability – as evidenced by good documentation, including documentation of the use of judgment, which ensures consistency and minimises subjectivity in forecasts;
 - appropriate incorporation of key drivers (inputs) of demand and exclusion of spurious drivers;
 - model validation and testing – including, where appropriate, assessment of statistical significance of explanatory variables, ‘goodness of fit’, in-sample forecasting performance of the model against actual data, diagnostic checking of the old models, out-of-sample forecast performance;
-

- accuracy and consistency of forecasts at different levels of aggregation – affects the overall reasonableness of the forecasts as accuracy at the total level may mask errors at lower levels that cancel each other out; and
 - use of most recent input information.
- 8.38 An overestimation of demand for the purposes of the Power System Review may be less critical than identifying areas of potential under supply, but, for the Power System Review 2012-13, the Commission will consider the analysis undertaken as part of the 2014 Network Price Determination with the objective of providing a more robust demand forecasting assessment.
- 8.39 The Commission understands the issues raised by the NTCOSS submission on affordability, demand growth and ability for low income households to implement energy efficiency measures (such as solar PV installations). The regulation of retail charges for small and medium customers and the application of subsidy schemes, such as the Pensioner Concession Scheme, are matters of Territory Government policy and not within the authority of the Commission and this draft decision.
- 8.40 The level of customer connections is the primary cost driver of the forecast network user initiated capex. The Commission notes that PWC Networks' customer connection forecast is developed using similar techniques to the demand forecasts, specifically least squares regression and adjustments based on expert judgement to account for factors that impact on customer number growth (for example, forward economic conditions).
- 8.41 In relation to customer connection forecasts, the Commission again notes that the adjustments are made based on expert judgements that are not clearly documented.
- 8.42 It is noted that the ABS demographics data shows that the population of the Territory grew by 4,297 persons per annum on average across the five years from 2007-08 to 2011-12. Over the forecast period from 2011 to 2021, the ABS is projecting a population increase of 3,600 persons per annum on average, a reduction in population growth of about 16 per cent on average.
- 8.43 In contrast, analysis of PWC Networks' customer connection forecast shows that, over the five years from 2008-09 to 2012-13, PWC Networks connected 1,718 customers per annum on average. However, over the five years of the forecast period (2014-15 to 2018-19) PWC Networks forecasts connections of 2,075 customers per annum, on average, a 21 per cent increase over the historical average. Based on these numbers, historically there was one connection made for each 2.5 persons, while PWC Networks' forecasts reflect one connection made for each 1.7 persons (an average 31 per cent change in this ratio over five years).
- 8.44 The Commission considers that an increase in the average number of customers connecting per annum might be reasonable, but the basis for the significant increase in annual average connections and the implied connections per head of population has not been demonstrated by PWC Networks. The Commission considers that PWC Networks' customer connection forecasts are biased and overestimated.
- 8.45 The Commission also notes that PWC Networks' customer connection forecast does not consider the various types of customer connections. This approach does not account for the mix of customer types and the associated mix of connection types (for example, small commercial, large commercial, industrial, residential).

- 8.46 The Commission understands that connection costs vary considerably by connection type and, therefore, forecasting the total number of connections does not allow the mix of customer connection types to be reflected into the network user initiated capex forecast and introduces additional variance into the forecast's unit cost estimate.

Commission's conclusions

- 8.47 The Commission considers that the growth in forecast demand submitted by PWC Networks is likely to be overstated but, in lieu of an alternative authoritative forecast, has adopted the recommendations to defer proposed costs for some zone substation replacement projects.
- 8.48 PWC Networks' customer connection forecasts are considered by the Commission to be biased and overestimated. While an increase in the average number of customers connecting per annum might be reasonable, the basis for the significant increase in annual average connections and the implied connections per head of population has not been demonstrated. Therefore, the Commission cannot conclude that the customer connection forecasts are reasonable.
- 8.49 However, the Commission considers PWC Networks' forecasts are nonetheless appropriate for the purposes of illustrating indicative tariffs and pricing impacts of the Commission's draft decision. This will be considered further as part of the Final Determination and any submissions received from stakeholders.

Commission's draft decision

- 8.50 Consistent with clause 6.8 of the NT Network Access Code and clauses 6.5.6(a)(1), 6.5.6(c)(3), 6.5.7(a)(1) and 6.5.7(c)(3) of the NER, the Commission will make adjustments to capex on the basis that PWC Networks' forecast demand and customer connections is biased and overestimated and that therefore the proposed capex forecast is not efficient.

CHAPTER 9

Maintaining Quality, Reliability and Security of Supply

Introduction

- 9.1 Standards of quality, reliability and security of supply are key considerations of regulators in undertaking network price regulation and identifying the optimum balance between price and service levels – a trade-off known as the regulatory bargain.
- 9.2 PWC Networks' licence requires that it operate, maintain (including repair and replace as necessary) and protect its regulated network in accordance with the NT Network Access Code and the Network Technical Code. PWC Networks must supply reliable and secure electricity. Many of the requirements in this objective overlap with regulatory obligations applying to PWC Network. For example, PWC Networks is subject to reliability targets established under the ESS Code⁴⁵ and the GSL Code.⁴⁶

Regulatory requirements

NT Electricity Standards of Service Code

- 9.3 Clause 68 of the NT Network Access Code requires the Commission, in setting a revenue or price cap, to take into account the revenue requirements of the network service provider during the relevant financial year or years having regard to a number of factors.
- 9.4 One of these factors is:
- (b) *the service standards applicable to the network provider under this Code and any other standards imposed on the network provider by any regulatory regime administered by the regulator and by agreement with the relevant network users;*
- 9.5 The ESS Code, implemented on 1 December 2012, applies to all electricity entities providing generation, network and retail services on the regulated network, excluding independent power producers, and establishes services and performance measures for network service providers.
- 9.6 The objectives of the ESS Code are to:
- establish standards of service and performance measures in the electricity supply industry;
 - develop, monitor, and enforce compliance with, and promote improvement in, standards of service of supply in the electricity supply industry; and
 - require electricity entities to have adequate systems in place which allow for regular reporting of actual performance in accordance with the ESS Code.

⁴⁵ Utilities Commission, [Northern Territory Electricity Standards of Service Code](#), December 2012.

⁴⁶ Utilities Commission, [Northern Territory Guaranteed Service Level Code](#), January 2012.

9.7 The ESS Code sets out the process and obligations for establishing, amending and meeting the approved target standards to be met by network service providers.

9.8 The targets must be set for the performance indicators included in Table 9.1 below.⁴⁷

Table 9.1: Network target standards and segmentation

Target Standards	Segmentation
Adjusted distribution network performance indicators	
System average interruption duration index (SAIDI)	By distribution feeder type (CBD, urban, short rural, long rural)
System average interruption frequency index (SAIFI)	By distribution feeder type (CBD, urban, short rural, long rural)
Adjusted transmission network performance indicators	
Average circuit outage duration (ACOD)	By transmission network
Frequency of circuit outage (FCO)	By transmission network
Average transformer outage duration (ATOD)	By transmission network
Frequency of transformer outages (FTO)	By transmission network

9.9 The targets set and approved by the Commission in accordance with clause 3.1 of the ESS Code will apply for the duration of the forthcoming regulatory control period.

9.10 The process for approving the relevant targets is based on a propose-approve model, with PWC Networks to apply a methodology identified in the ESS Code, based on:

- segmenting the targets in accordance with the feeder categories specified in the Feeder Category Guidelines⁴⁸ issued by the Commission;
- averaging the data from the preceding five financial years; and
- applying adjustments to the interruptions⁴⁹ by excluding those events that are considered outside the control of the network service provider.

9.11 In accordance with clause 3.1 of the ESS Code, the Commission considered the distribution targets developed by PWC Networks and submitted to the Commission on 1 March 2013.

9.12 The Commission did not approve the proposed distribution targets submitted by PWC Networks as they did not meet the objectives of the ESS Code which, inter alia, aim to:

...promote improvement in standards of service by electricity entities in the electricity supply industry.

9.13 In making its decision, the Commission had also regard to PWC Networks' historical performance, customers' willingness to pay and the performance of comparable distributors in other Australian jurisdictions.

⁴⁷ Clause 3.1.2(a) and Schedule 2, ESS Code.

⁴⁸ Feeder Category Guidelines developed in accordance with the ESS Code on 1 December 2012.

⁴⁹ A network interruption excluding those less than one minute in duration.

9.14 On 12 July 2013, the Commission approved the distribution and transmission network performance target standards applicable to PWC Networks for the forthcoming regulatory control period.

9.15 Pursuant to clause 3.1.8 of the ESS Code, the Commission set distribution targets using an improvement factor of:

- 5 per cent applicable to CBD, urban and short rural feeders; and
- 10 per cent applicable to long rural feeders due to their exceptionally poor historical performance.

9.16 The Commission has approved the distribution targets contained in Table 9.2 below.

Table 9.2: Distribution targets set by the Commission

	Distribution Targets	
Feeder category	SAIDI	SAIFI
Rural long	2,164.9	35.1
Rural short	496.3	8.1
Urban	136.0	2.5
CBD	18.8	0.4
Rural long	2,164.9	35.1
Rural short	496.3	8.1
Urban	136.0	2.5
CBD	18.8	0.4

9.17 The Commission has approved the transmission targets proposed by PWC Networks and contained in Table 9.3 below.

Table 9.3: Transmission targets set by the Commission

Transmission performance indicators	Target
ACOD	358.8
FCO	49.0
ATOD	123.3
FTO	0.8

Guaranteed Service Level Code

9.18 In late 2011, the Commission made a GSL Code to set out the arrangements for payments by network service providers to small customers who receive poor levels of service.

- 9.19 The GSL Code is based on the recommendations arising from the Review of Options for Implementation of a Customer Service Incentive Scheme for Northern Territory Electricity Customers⁵⁰ and consultation with electricity industry participants.
- 9.20 All Australian jurisdictions have established guaranteed service level (GSL) schemes for electricity network service performance, although the services subject to penalty payments and the applicable payment levels vary widely.
- 9.21 The GSL Code took effect from 1 January 2012, with a staged approach to the implementation of payments for various service performance measures. The GSL Code came into full force on 1 July 2012.
- 9.22 The GSL Code applies to customers using less than 160MWh per year in the regulated networks of Darwin-Katherine, Alice Springs and Tennant Creek.
- 9.23 Under the Territory's GSL Code, if PWC Networks does not meet the guaranteed service levels as specified in the GSL Code, PWC Networks must make a GSL payment to the eligible small customer in accordance with the GSL Code.
- 9.24 While GSL schemes are designed to provide an incentive for a network service provider to improve service to its worst-served customers, reliability expenditure is fundamentally driven by the need to meet average targets across all customers connected to the network. A network service provider can be fully compliant with average reliability standards and still be required to make payments under a GSL scheme, as there will inevitably be poorer outcomes for some individual customers.
- 9.25 The GSL Code sets payments from PWC Networks to an eligible customer who has experienced exceptionally poor service. GSL payments are not intended to be compensation but rather some recognition for poor service.
- 9.26 GSL schemes are generally funded through the operational costs of a network service provider and approved by the regulator through network price determinations. The cost of the scheme is therefore borne by the network service provider's customer base. Should the total actual GSL payments made over the regulatory control period be below or above the estimated provision approved by the regulator, the network service provider retains or absorbs the difference. The level of funding for GSL payments for PWC Networks for the forthcoming regulatory control period is discussed in Chapter 11.

National Electricity Rules

- 9.27 Under the NER, accountability for delivering distribution services lies with the applicable network service provider. The AER, through its service target performance scheme and efficiency benefit sharing scheme, places incentives on network service providers to improve distribution system reliability to all customers. The scheme aims to ensure that any cost savings achieved by a network service provider during a regulatory control period do not come at the expense of service standards. In addition, the AER's demand management incentive scheme provides network service providers with additional incentives to manage demand.

⁵⁰ Utilities Commission, [Customer Service Incentive Scheme for Northern Territory Electricity Customers Final Report](#), July 2010.

- 9.28 The AER published its Service Target Performance Incentive Scheme (STPIS) in June 2008, in accordance with clause 6.6.2 of the NER. An amended version was released in November 2009.
- 9.29 While the regulatory regime as a whole encourages a business to improve its operating and capital efficiency, the STPIS is designed to ensure that this increase in efficiency is not at the expense of a deterioration in service performance for customers. Further, the STPIS is intended to encourage a business to improve its service performance where customers are willing to pay for these improvements.
- 9.30 The AER's STPIS comprises four components being the:
- 'reliability of supply' component;
 - 'quality of supply' component;
 - 'customer service' component; and
 - GSL component.
- 9.31 Under the reliability of supply, quality of supply and customer service components of the scheme, a network service provider's revenue is increased (or decreased) based on changes in service performance, as assessed by the AER in accordance with this scheme. This is achieved by including an S-factor component in the price control mechanism, so that network service providers are penalised (or rewarded) for diminished (or improved) service compared to predetermined targets.
- 9.32 Under the GSL component, payments are made directly to customers where the service performance received is worse than a specified threshold.
- 9.33 As part of a distribution determination, the AER will determine whether one or more components of this scheme may apply to a DNSP. Jurisdictional schemes take precedence and the AER will only consider applying components of the STPIS where there is no jurisdictional scheme. For example, for those jurisdictions which have a GSL scheme in place, the AER does not include that component in the STPIS arrangements for that jurisdiction.
- 9.34 The AER's STPIS also includes information and reporting requirements for annual reporting by DNSPs of actual performance against the parameters applicable to it as set out in the relevant distribution determination.

Framework and approach

- 9.35 In its Framework Statement, the Commission identified that it would be premature for the 2014 Network Price Determination to include STPIS arrangements in the price control mechanism⁵¹, since PWC Networks will have had only limited exposure to the new service standards. Rather, the Commission will rely on the GSL Code to drive reliability improvements in poorly performing areas of the network, and on the targets and reporting framework established under the ESS Code to encourage reliability improvements across the regulated network as a whole.

⁵¹ Utilities Commission, [2014 Network Price Determination: Framework and Approach Decision Paper](#), November 2012, page.77.

PWC Networks regulatory proposal

- 9.36 PWC Networks' regulatory proposal notes that the Commission approved the targets required under the ESS Code on 12 June 2013. PWC Networks is currently reviewing its proposed reliability capital expenditure, vegetation management program, unplanned corrective maintenance and GSL payment forecasts.
- 9.37 PWC Networks has prepared its expenditure forecasts on the basis of the former standards. PWC Networks has foreshadowed a variation to the expenditure forecasts in its revised regulatory proposal (required to be submitted within 20 business days of the release of this Draft Determination) to meet the revised reporting standards and targets standards set under the ESS Code.

Submissions

- 9.38 The Commission did not receive any submissions specific to the service standards proposed in PWC's regulatory proposal.
- 9.39 The NTMEU noted that the fact that the Commission had implemented a GSL program to be implemented late in the third regulatory control period warranted an increase in operational costs. However, the NTMEU also noted that PWC cited step changes resulting in increased staffing for a variety of additional activities but there was no detailed explanation of these step changes and what has caused the changes to be implemented.

Issues and Commission's considerations

- 9.40 The purpose of the determination process is to ensure that secure, safe and reliable services are provided to consumers at a fair and reasonable price. A customer-focused culture and a culture of not only regulatory compliance, but also regulatory outperformance, is inherent in the pricing process.
- 9.41 The Commission notes PWC Networks' advice that capex and opex forecasts have been developed based on the service standard targets in place prior to those approved by the Commission in June 2013 and foreshadowing revised forecasts to meet the new targets.
- 9.42 The Commission notes that the new standards were introduced in July 2013, three months before PWC Networks submitted its regulatory proposal. Further, the Commission considers that there was significant funding provided to implement the recommendations of the Davies Review, and there should be significant reliability benefits associated with this expenditure.

Commission's conclusions

- 9.43 The Commission considers that the ESS Code and GSL Code establish the appropriate standards for the service element of the regulatory bargain and form an appropriate basis for determining the capital, operating and expenditure required in the forthcoming regulatory control period.

Commission's draft decision

- 9.44 The standards of quality, reliability and security of supply that are to be delivered in the forthcoming regulatory control period are the standards established in the Commission's ESS Code and GSL Code.

CHAPTER 10

Forecast capital expenditure

Introduction

- 10.1 This chapter sets out the Commission's conclusions on forecast capex allowances for PWC Networks for the forthcoming regulatory control period. It also:
- discusses the framework the Commission has applied in assessing the proposal;
 - discusses the outcomes of the current regulatory control period;
 - provides a general overview of the proposal;
 - lists comments made by stakeholders on the proposal; and
 - sets out the Commission's considerations and responses to stakeholder comments.

Regulatory requirements

NT Network Access Code

- 10.2 Clause 68 of the NT Network Access Code requires the Commission, in setting a revenue or price cap, to take into account the revenue requirements of the network service provider during the relevant financial year (or years) having regard to a number of factors.
- 10.3 One of these factors is:
- (e) *the provision of a return on efficient capital investment undertaken by the network provider in order to maintain or extend network capacity that is commensurate with the commercial and regulatory risks involved;*

National Electricity Rules

- 10.4 Under clause 6.12.1(3) of the NER, the AER must make a decision to accept, or reject and form its own estimate of, the total of forecast capex included in the building block proposal of each DNSP in accordance with the capex objectives and the capex criteria and factors outlined in clause 6.5.7 of the NER.

Capex objectives

- 10.5 Clause 6.5.7(a) of the NER provides that a DNSP must include the total forecast capex for the regulatory control period in order to achieve the following capex objectives:
- (1) *meet or manage the expected demand for standard control services over that period*
 - (2) *comply with all applicable regulatory obligations or requirements associated with the provision of standard control services*
 - (3) *maintain the quality, reliability and security of supply of standard control services*
 - (4) *maintain the reliability, safety and security of the distribution system through the supply of standard control services.*

Capex criteria and factors

- 10.6 Clause 6.5.7(c) of the NER also provides that the AER must accept the capex forecast included in a DNSP's regulatory proposal if it is satisfied that the total of the capex forecast for the regulatory control period reasonably reflects:
- (1) *the efficient costs of achieving the capex objectives*
 - (2) *the costs that a prudent operator in the circumstances of the relevant DNSP would require to achieve the capex objectives*
 - (3) *a realistic expectation of the demand forecast and cost inputs required to achieve the capex objectives.*
- 10.7 In making this assessment, the AER must have regard to the capex factors in clause 6.5.7(e) of the NER.
- 10.8 Clause 6.5.7(d) of the NER states that, if the AER is not satisfied that a DNSP's forecast capex reasonably reflects the capex criteria, then the AER must not accept the forecast capex in a building block proposal. If the AER does not accept the total forecast capex proposed by a DNSP, clause 6.12.1(3)(ii) of the NER requires the AER to include in its draft decision:
- ...an estimate of the total of the DNSP's required capex for the regulatory control period that the AER is satisfied reasonably reflects the capex criteria, taking into account the capex factors.*
- 10.9 In its Framework Statement, the Commission set out its preferred approach that it would assess the forecast capex in PWC Networks' regulatory proposal against the requirements of clause 6.5.7 of the NER.

Current period outcomes

- 10.10 The Commission has been unable to undertake a detailed analysis of capital expenditure outcomes with respect to the allowance set by the Commission for the 2009-2014 period, as the 2009 NPD was not based on a building block approach and a bottom up assessment of proposed capex projects. Rather, the Commission applied a total factor productivity (TFP)-style approach to escalate the total revenue allowance in line with what the Commission would expect an efficient firm to require.
- 10.11 The Commission has backcast the 2009 NPD to estimate the capex allowance that would have given rise to the same revenue outcomes. The estimated capex allowance, the increase attributable to the cost pass through approved by the Commission in May 2013⁵² and PWC Networks' actual and forecast capex spend for the current regulatory control period are shown in Table 10.1.
- 10.12 PWC Networks is expected to exceed the estimated regulatory allowance, including the additional cost pass through allowance, by \$58.6 million (14 per cent).
- 10.13 PWC Networks identified the main drivers of the overspend as PWC Networks' implementation of the Davies Review recommendations, the stated need for significant expenditure related to remedial works following the Casuarina Zone

⁵² Utilities Commission, [Cost Pass Through Application Final Determination](#), May 2013.

Substation failure in late 2008, and the subsequent enhancement of the network asset management regime.

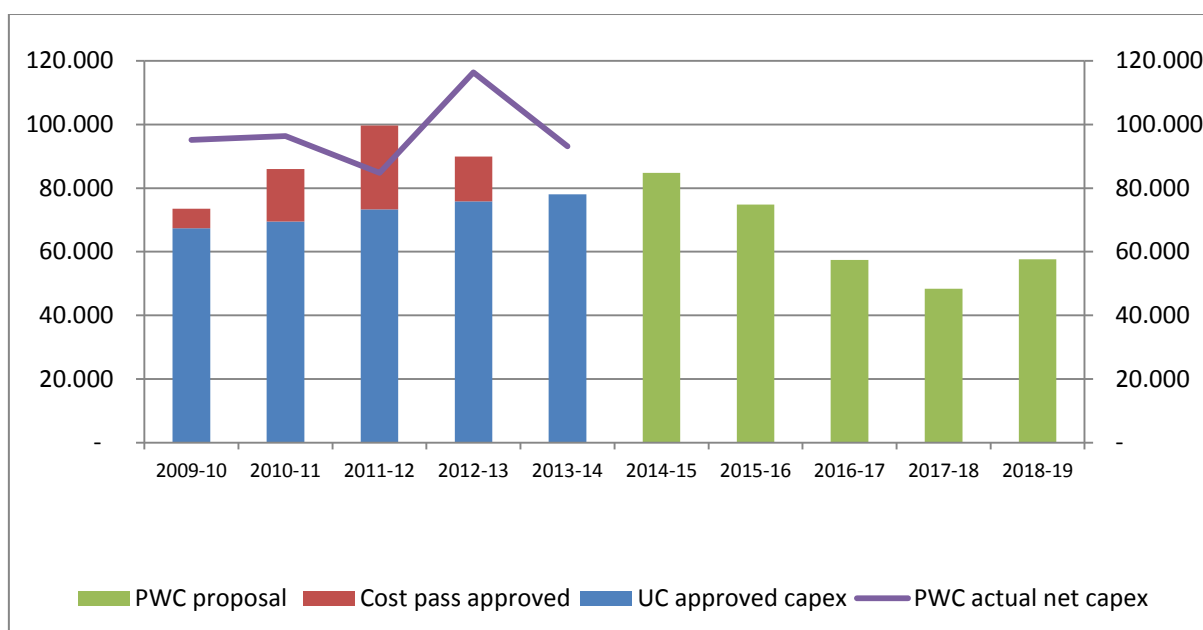
Table 10.1: Capex outcomes for PWC Networks for current regulatory control period, (\$M, 2013-14)

	2009-10	2010-11	2011-12	2012-13 (f)	2013-14 (f)	Total
(est) Regulatory allowance	67.36	69.48	73.33	75.79	78.02	363.98
Additional cost pass through allowance ^(a)	6.19	16.52	26.32	14.15	0.00	63.18
	73.54	86.00	99.65	89.94	78.02	427.16
Actual net capex	95.15	96.34	84.82	116.37	93.10	485.77
Overspend	21.60	10.34	(14.83)	26.42	15.08	58.61

Source: Utilities Commission; PWC Regulatory Proposal, converted to real terms using ABS inflation data.

(a) Cost pass through associated with implementation of recommendations from the Davies Review, approved by the Commission in May 2013.

Figure 10.1: Capex allowance (including cost pass through) and actual capex for 2009-14 and proposed capex for 2014-19



Source: Utilities Commission

PWC Networks regulatory proposal

10.14 PWC Networks has forecast total capex of \$323.0 million (\$2013-14) for the forthcoming regulatory control period. The amounts proposed by the PWC Networks are set out in Table 10.2.

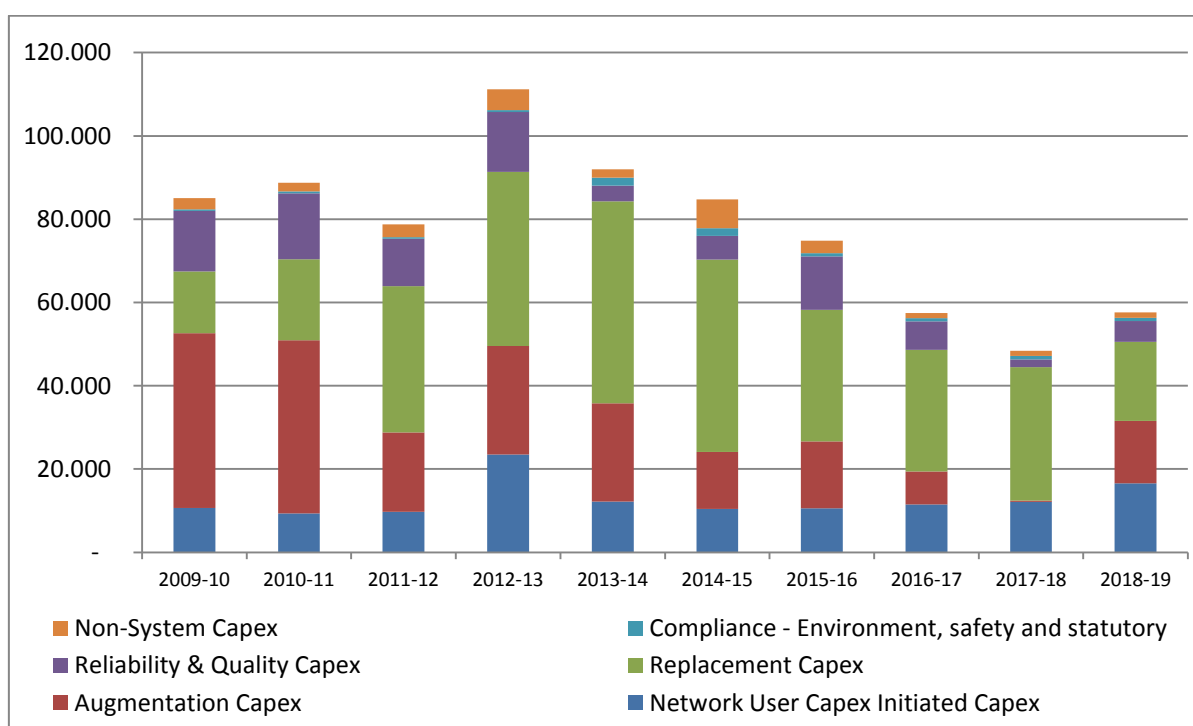
10.15 PWC Networks' forecast total capex for the forthcoming regulatory control period is approximately 24 per cent (in real terms) lower than the capex allowed (including the cost pass through) for the current regulatory control period and 29 per cent (in real terms) lower than expected actual capex.

Table 10.2: PWC Networks proposed capex, (\$M, 2013-14)

	2014-15	2015-16	2016-17	2017-18	2018-19	Total
User initiated	10.386	10.590	11.467	12.096	16.608	61.146
Augmentation	13.731	16.018	7.919	301	14.989	52.958
Replacement	46.172	31.624	29.227	32.058	18.964	158.046
Reliability	5.689	12.796	6.873	1.874	4.990	32.222
Compliance	1.883	822	720	823	793	5.051
Non-system	6.882	2.952	1.236	1.236	1.236	13.544
Total proposed capex	84.743	74.803	57.442	48.389	57.580	322.957

Source: Derived from PWC Networks, Regulatory proposal, September 2013, RIN template 3.1 (confidential)

Figure 10.2: Actual capex for 2009-14 and proposed capex for 2014-19 by capex driver



Source: Utilities Commission

10.16 PWC identified the following key drivers for its proposed capex forecast:

- the intensive program of remedial works to replace or refurbish unserviceable equipment following on from the recommendations of the Davies Review in 2008-2009 is nearing completion. While there is some carry over to the estimated and forecast periods, asset replacements and refurbishments should return to more normal levels towards the end of the forecast period;
- demand growth is expected to continue at a higher rate than the historical growth throughout the estimated and forecast periods. However the 'lumpiness' of expenditure on major projects such as zone substations and transmission lines results in significant year-on-year expenditure variation in a relatively small network; and

- non-system capex is forecast to decline during the estimated and forecast periods, as the need to acquire modern diagnostic and test equipment for the remedial asset management program has been met in the current regulatory control period.

Submissions

10.17 The NTMEU submitted that PWC Networks is proposing considerably more capex for the forthcoming regulatory control period than is warranted (especially after what it contends was the massive overspend in current regulatory control period), noting that:

Whilst the excessive capex for [the current regulatory control period] has been justified on the basis of the large amount of rectification of the failures experienced when seen in comparative terms, the capex proposed for [the forthcoming regulatory control period] is still excessive when compared to that incurred in [the previous regulatory control period], despite there being only a modest growth in demand. (page.27)

10.18 The NTMEU argued that, while the capex projects nominated by PWC Networks might be justified when viewed from a 'bottom up' basis, a 'top down' assessment of the proposed capex for the forthcoming regulatory control period does not support the amount of capex proposed by PWC Networks:

- augmentation capex would appear to exceed forecast expectation of growth;
- replacement capex represents a very large proportion of the RAB to be replaced in a five-year period; and
- PWC Networks' arguments on expenditure to replace ageing assets do not appear to be supported by the asset age profile, with an implied decrease in average asset age in a short period.

10.19 The NTMEU also expressed concern that PWC Networks did not provide a sufficiently detailed breakdown of the three capex classifications (augmentation, replacement and non-network) incurred in the current regulatory control period, making comparisons with the forecast capex extremely difficult.

10.20 No other submissions were received on the PWC Networks' forecast capex.

Issues and Commission's considerations

10.21 The Commission engaged PB to provide independent reviews of the prudence and efficiency of PWC Networks' capex proposal. PB's report has been released with this Draft Determination.

10.22 The NT Network Access Code provides the Commission with more flexibility in its approach than the NER, which is prescriptive in its treatment of any expenditure that is not fully justified by the DNSP. While PB's review approach considers the NER and is based upon the principles and practices that the AER has applied in its previous regulatory reviews, the Commission directed PB to take into consideration the context in which PWC Networks is operating, specifically the recent development of appropriate processes and procedures and thus the limited availability of documentation and data.

10.23 In assessing whether the capex proposed by PWC Networks is prudent and efficient, PB has:

- assessed whether PWC Networks is acting efficiently in accordance with good industry practice through a review of capital governance, policy and procedures,

cost estimating practices, specific reviews of certain expenditures, and the deliverability of the proposed works program;

- assessed whether there is a justifiable need for the proposed investment within each expenditure category;
- assessed whether all reasonable options have been considered and the most efficient investment selected to satisfy that need after confirming the need for an investment; and
- assessed whether those assumptions are reasonable where an investment is based on assumptions about future conditions.

10.24 A project is considered prudent if it addresses an identified and justifiable need and the benefits of undertaking the project outweigh the costs. A project is considered efficient if it employs the least cost option to deliver the technical requirements in the required timeframe.

Policies and procedures

- 10.25 The Davies Review identified a number of shortcomings of PWC's substation maintenance practices and risks posed by the uncertain condition of its substation assets at the time of the review, and made a number of recommendations. The recommendations encompassed changes to policies, systems and processes, new reporting systems, increased workforce levels and training, and equipment upgrades.
- 10.26 Accordingly PWC Networks' capital governance framework is relatively new, with new processes and procedures set out and templates developed in the Capital Investment and Delivery Framework implemented in May 2012. The Commission has been advised that PWC Networks has worked closely with peer DNSPs familiar with the requirements of the NER and national regulatory bodies.
- 10.27 The Commission notes, however, that PWC Networks is in the early stages of implementing the improved governance framework so that evidence of application is not readily assessable.
- 10.28 The Commission is satisfied that, in general, the principles and practices set out in the Capital Investment and Delivery Framework and associated documents broadly accord with good industry practice and form a firm basis for PWC Networks to make efficient and prudent capital investment going forward.

Network user initiated capex and augmentation capex

- 10.29 Network user initiated capex is the expenditure required to construct assets where customers seek network extensions and upgrades in accordance with PWC Networks' NCCP⁵³. PWC Networks funds that portion of the capex that it can reasonably expect to recover through network tariffs over time, with the customer making a capital contribution for the cost of the works above this level.
- 10.30 Network user initiated capex and augmentation capex are considered together as they both reflect expected growth in the network.
- 10.31 Network user initiated capex and augmentation capex accounts for 35 per cent of PWC Networks forecast capex.

⁵³ The NCCP is discussed in Chapter 16.

- 10.32 PB examined the largest project associated with network user initiated capex and the two largest augmentation capex projects:
- customer augmentation and network extension program, with forecasts based on historical expenditure, adjusted for proposed changes to the NCCP;
 - construction of the East Arm Zone substation, to address emerging capacity constraints for the Berrimah Zone Substation and the Palmerston Zone substation and constraints on 11kV feeders that are resulting in quality of supply issues; and
 - construction of the Archer to Palmerston 66kV line, to address an expected growth rate of 3.2 per cent in the Palmerston, McMinn and Humpty Doo areas.
- 10.33 The Commission considers that these projects, while prudent, are not efficient. Network user initiated capex should be reduced based on actual 2012-13 expenditure, construction of the East Arm Zone substation should be deferred to post-2019 and construction of the Archer to Palmerston 66kV line should be deferred by two years.

Replacement capex

- 10.34 Replacement capex accounts for 49 per cent of PWC Networks forecast capex. The primary driver of the replacement capex forecast is the condition of the assets and the increased risk that is introduced by the condition of the assets.
- 10.35 PB examined the six largest replacement capex projects:
- replacement of Casuarina Zone Substation 66kv Outdoor Switchyard, to address risk of asset failure;
 - replacement of McMinns 66/22kV Zone Substation, to address risk of asset failure;
 - replacement of Berrimah Zone Substation, to address risk of asset failure and emerging capacity constraints;
 - new Mitchell Street switching station, to address possible (but not confirmed) need to vacate premises;
 - asset replacement and upgrade programs composed of 19 sub-programs to replace non-major assets;
 - Meters/metering program composed of four sub-programs – new meter installations, meter replacements, pre-payment meter replacements and smart metering trial.
- 10.36 PB noted that the forecast replacement capex profile is relatively ‘front loaded’.
- 10.37 The Commission considers that these projects, while mostly prudent, are not efficient and contain some unnecessary expenditure. The Commission considers that prudent and efficient replacement capex would be achieved by deferring works at the Casuarina and Berrimah Zone substations by one and two years respectively, removing some sub-programs as unnecessary in the forthcoming regulatory control period, and reducing PWC Networks’ estimates of unit rate costs.
- 10.38 With respect to the Mitchell Street switching station, the Commission notes that PWC Networks is still in negotiations with the City of Darwin Council and may reach an agreement for operation at the current site to continue. Accordingly, this forecast expenditure has been excluded. The Commission will give consideration to including this as a contingent project if there is legal clarification of the scope for such arrangements in the NT Network Access Code.

- 10.39 The Commission notes arguments from the NTMEU that PWC Networks' proposed replacement capex is excessive as it represents a very large proportion of the RAB to be replaced in a five-year period.
- 10.40 While replacement capex may represent a large proportion of the RAB based on dollar value, it does not necessarily represent a large proportion of the units in service. PWC Networks continues to have a large number of older assets in service, with capex prior to the Casuarina event in 2008 being more focused on growth of the network.
- 10.41 Further, the replacement capex as a proportion of the RAB is not inconsistent with that allowed by the AER for comparable distributors.⁵⁴

Reliability and quality improvement capex

- 10.42 Reliability and quality improvement capex accounts for 10 per cent of PWC Networks' forecast capex. This is reflective of PWC's move to condition-based maintenance of its assets, rather than a run-to-failure regime.
- 10.43 PB examined the largest reliability capex project:
- rebuild the Channel Island Power Station to Hudson Creek 132kV transmission line, to ensure that optimal risk mitigation is achieved.
- 10.44 The Commission considers that this project is prudent. However, the Commission considers that this project should be undertaken earlier than proposed by PWC Networks and that the efficiency of the project decreases as delivery is deferred.

Real input cost escalation

- 10.45 PB was not required to assess forecast rates of growth in input costs. However, as part of its review, PB was required to ensure that forecast changes in input costs were appropriately reflected in the cost escalation calculations performed by PWC Networks in forecasting capex.
- 10.46 PB reviewed the application of escalation in PWC Networks' forecast capex model (refer Table 10.3) and confirmed that the rates applied are those relevant to the capex forecast for the forthcoming regulatory control period as recommended by consultants engaged by PWC Networks. PB found that PWC Networks' overall capex escalation process is reasonable, however PB did not offer a view about the reasonableness of the escalators themselves.

⁵⁴ For example, for the 2010-15 determination for Ergon, replacement capex was 16 per cent of the opening RAB (which had 64 per cent of its life remaining on a weighted average basis) and for the 2010-15 determination for ETSA Utilities, replacement capex was 12 per cent of the opening RAB (which had 38 per cent of its life remaining on a weighted average basis).

Table 10.3: Impact of PWC Networks real cost escalators on forecast capex, (\$M, 2013-14)

	2014-15	2015-16	2016-17	2017-18	2018-19	Total
Base capex	83.446	76.197	57.838	48.061	56.808	322.349
Real cost escalation adjustment	1.298	(1.394)	(395)	328	772	608
Total proposed capex	84.743	74.803	57.442	48.389	57.580	322.957

Source: Derived from PWC Networks, Regulatory proposal, September 2013, RIN template 3.1 (confidential)

- 10.47 The NTMEU expressed concern that real labour cost escalators did not include a productivity adjustment and, for internal labour, were based on the PWC Enterprise Bargaining Agreement (EBA). The NTMEU also noted that the long-term accuracy of forecasters of future labour costs was variable.
- 10.48 The NTMEU accepted that PWC Networks' approach to forecast real material cost changes has regulatory precedent.
- 10.49 The Commission considers the real input cost escalators proposed by PWC Networks are reasonable, taking into account the higher costs generally incurred in the Territory due to its remoteness, lack of economies of scale and pressure arising from such major projects as Ichthys.

Deliverability

- 10.50 The Commission notes that PWC Networks' forecast capex program represents a decrease compared to the level of actual capex in the current regulatory control period.
- 10.51 Adjustments to the timing of some capex projects will address the 'front loading' and improve the deliverability of the forecast capex program.
- 10.52 The Commission is satisfied that PWC Networks has resource capability and material procurement processes in place to deliver its proposed capital works program during the forthcoming regulatory control period.

Commission's conclusions

- 10.53 For the reasons summarised in this chapter, the Commission is not satisfied that the proposed forecast capex allowance proposed by PWC Networks reflects the efficient capital investment required to be undertaken by it in the forthcoming regulatory control period in order to maintain or extend network capacity that is commensurate with the commercial and regulatory risks involved. Further, the Commission is not satisfied that PWC Networks' forecast capex, taking into account the capex factors, reasonably reflects the capex criteria in clause 6.5.7 of the NER.
- 10.54 Following its review of PWC Networks capex proposal, the Commission has made the following adjustments⁵⁵:

⁵⁵ Real cost escalation applied to PB recommendations by the Commission.

- a reduction of \$8.6 million to the network user initiated capex forecast as the forecast has not been sufficiently substantiated.
- a reduction of \$15.8 million to the augmentation capex forecast as the forecast has not been sufficiently substantiated.
- a reduction of \$31.4 million to the asset replacement capex forecast consisting of:
 - \$15.8 million as some components of work are not demonstrated to be prudent and the unit rates underpinning the forecasts are upwardly biased.
 - \$15.6 million as the Mitchell St switching station replacement is a contingent project,⁵⁶ dependent on the decision by City of Darwin Council not to extend the lease on the Mitchell Street site.
- a reduction of \$2.1 million to the capex forecast relating to reliability and quality of supply, as some components of work are not demonstrated to be prudent.

10.55 The Commission has also had regard to the capex criteria set out in the NER, taking into account the capex factors. The Commission considers this reduction is the minimum adjustment necessary to ensure PWC Networks' capex forecast meets the capex criteria.

10.56 Commission has accepted real input cost escalators proposed by PWC.

Table 10.4: Commission conclusion on PWC Networks capex allowance, (\$M, 2013-14)

	2014-15	2015-16	2016-17	2017-18	2018-19	Total
PWC Networks proposed capex	84.74	74.80	57.44	48.39	57.58	322.96
Adjustment to network user initiated capex	- 1.20	- 1.43	- 1.71	- 2.01)	- 2.23	- 8.57
Adjustment to augmentation capex	- 1.73	- 10.28	- 6.05	7.06	- 4.81	- 15.81
Adjustment to replacement capex	- 18.76	- 6.44	- 4.32	- 8.73	- 6.88	- 31.37
Adjustment to reliability capex	10.93	- 5.78	- 4.65	0.29	- 2.88	- 2.08
Commission capex allowance	73.99	50.88	40.71	45.00	54.55	265.13

Source: Utilities Commission

Commission's draft decision

10.57 The Commission does not accept PWC Networks' forecast capex for the forthcoming regulatory control period.

10.58 The Commission is not satisfied that the capital expenditure proposed by PWC Networks reasonably reflects the efficient capital investment required to be undertaken by PWC Networks in the forthcoming regulatory control period. Further,

⁵⁶ The treatment of contingent projects is discussed in Chapter 14.

the Commission is not satisfied that PWC Networks' forecast capex, taking into account the capex factors, reasonably reflects the capex criteria in clause 6.5.7 of the NER.

- 10.59 The Commission's estimate of the total capex required by PWC Networks in the forthcoming regulatory control period, that reflects efficient capital investment and the capex criteria taking into account the capex factors, is set out in Table 10.4 of this draft decision.

CHAPTER 11

Forecast operating and maintenance expenditure

Introduction

- 11.1 This chapter sets out the Commission's conclusions on forecast opex allowances for PWC Networks for the forthcoming regulatory control period. It also:
- discusses the framework the Commission has applied in assessing the proposal;
 - discusses the outcomes of the current regulatory control period;
 - provides a general overview of the proposal;
 - lists comments made by stakeholders on the proposal; and
 - sets out the Commission's considerations and responses to stakeholder comments.

Regulatory requirements

NT Network Access Code

- 11.2 Clause 68 of the NT Network Access Code requires the Commission, in setting a revenue or price cap, to take into account the revenue requirements of the network service provider during the relevant financial year (or years) having regard to a number of factors.
- 11.3 One of these factors is:
- (f) *the right of the network provider to recover reasonable costs incurred by the network provider in connection with the operation and maintenance of the network, including those arising from but not limited to:*
 - (i) *any Territory and Commonwealth taxes or equivalent taxes paid in connection with the operation of its business as a provider of network access services; and*
 - (ii) *the tariffs and charges paid to other network providers irrespective of whether these tariffs and charges are regulated under this Code;*

National Electricity Rules

- 11.4 Under clause 6.12.1(4) of the NER, the AER must make a decision to accept or not accept the forecast opex included in a building block proposal. If the AER does not accept the proposal it must form its own estimate in accordance with the opex objectives and the opex criteria and factors outlined in clause 6.5.6 of the NER.

Opex objectives

11.5 Clause 6.5.6(a) of the NER provides that a DNSP must include the total forecast opex for the regulatory control period in order to achieve the following opex objectives:

- (1) *meet or manage the expected demand for standard control services over that period;*
- (2) *comply with all applicable regulatory obligations or requirements associated with the provision of standard control services;*
- (3) *maintain the quality, reliability and security of supply of standard control services;*
- (4) *maintain the reliability, safety and security of the distribution system through the supply of standard control services.*

Opex criteria and factors

11.6 Clause 6.5.6(c) of the NER provides that the AER must accept the opex forecast included in a building block proposal if it is satisfied that the total of the forecast opex for the regulatory control period reasonably reflects:

- (1) *the efficient costs of achieving the opex objectives; and*
- (2) *the costs that a prudent operator in the circumstances of the relevant DNSP would require to achieve the opex objectives; and*
- (3) *a realistic expectation of the demand forecast and cost inputs required to achieve the opex objectives.*

11.7 In making this assessment, the AER must have regard to the opex factors contained in clause 6.5.6(e) of the NER.

11.8 Clause 6.5.6(d) of the NER states that, if the AER is not satisfied that a DNSP's forecast opex reasonably reflects the opex criteria, then the AER must not accept the forecast opex in a building block proposal. If the AER does not accept the total forecast opex proposed by a DNSP, clause 6.12.1(4)(ii) of the NER requires the AER to include in its draft decision:

...an estimate of the total of the DNSP's required opex for the regulatory control period that the AER is satisfied reasonably reflects the opex criteria, taking into account the opex factors.

Framework and approach

11.9 In its Framework Statement, the Commission set out its preferred approach that it would assess the forecast capital expenditure in PWC Networks' regulatory proposal against the requirements of clause 6.5.6 of the NER.

Current period outcomes

11.10 The Commission has been unable to undertake a detailed analysis of operating and maintenance expenditure outcomes with respect to the allowance set by the Commission for the 2009-2014 period, as the 2009 NPD was not based on a building block approach and a bottom up assessment of proposed opex. Rather, the Commission applied a TFP-style approach to escalate the total revenue allowance in line with what the Commission would expect an efficient firm to require.

11.11 The Commission has backcast the 2009 NPD to estimate the opex allowance that would have given rise to the same revenue outcomes. The estimated opex allowance, the increase attributable to the cost pass through approved by the Commission in

May 2013 and PWC Networks actual and forecast opex spend for the current regulatory control period are shown in Table 11.1.

11.12 PWC Networks is expected to exceed the estimated regulatory allowance, including the additional cost pass through allowance, by \$148.2 million (46 per cent).

11.13 PWC Networks identified the main drivers of the overspend as:

“the deteriorating state of assets, changes to the asset management approach, and the minimum levels of expenditure required to satisfy core network asset management related principles regarding the safety of the network and the objective maintenance needs of assets.” (pages.90-91)

11.14 PWC Networks has argued that a significant contributor to the overspend in the current regulatory control period was that the regulatory allowance for opex was too low:

“The shortfall in 2009-14 regulatory funding allowance has resulted in gaps in Power Networks’ current operational and investment expenditure. This is in turn leading to the rationing of some standard control services and support functions and driving up costs above efficient levels. Examples of regulated funding constraints driving inefficient expenditure include:

- *Under-expenditure on replacement investment is increasing the cost of planned and unplanned corrective maintenance (fault management); and*
- *Under-expenditure on planned corrective maintenance is leading to a growing backlog of corrective maintenance, which is in turn driving an increase in unplanned corrective costs above efficient levels.*

In addition to the degraded level of operational efficiency, underfunding is reducing the scope and quality of standard control services.” (page 92)

11.15 The Commission considers that the opex allowance for the current regulatory control period provided sufficient funding for the efficient operation and maintenance of the network, based on PWC Networks’ practices at that time.

11.16 Following the Casuarina failure in late 2008, the Davies Review subsequently identified a number of shortcomings in PWC Networks’ policies, practices and procedures. The Davies Review found that PWC Networks did not have in place the systems and processes to collect and analyse the necessary information that would allow it to appropriately manage and maintain its network assets, and thus lacked the systems and knowhow required to implement alternative better approaches being adopted throughout the industry.

11.17 The Commission considers that the overspend in the current regulatory control period is largely explained by implementation of the Davies Review recommendations and resulting changed work practices, and that this has been taken into account by PWC Networks in developing its regulatory proposal.

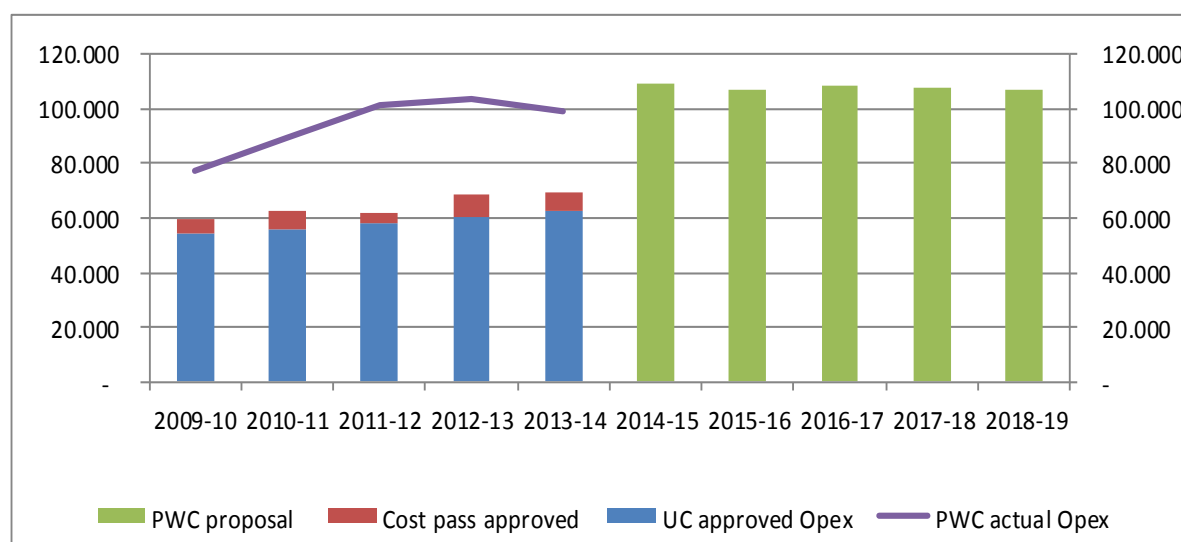
Table 11.1: Opex outcomes PWC Networks for current regulatory control period, (\$M, 2013-14)

	2009-10	2010-11	2011-12	2012-13 (f)	2013-14 (f)	Total
(est) Regulatory allowance	54.26	55.97	58.11	60.58	62.85	291.77
Additional cost pass through allowance ^(a)	5.06	6.90	3.85	8.37	6.28	30.45
	59.32	62.88	61.96	68.94	69.13	322.22
Actual net opex	77.11	89.32	101.08	103.84	99.02	470.37
Overspend	17.80	26.44	39.12	34.90	29.90	148.15

Source: Utilities Commission; PWC Regulatory Proposal, converted to real terms using ABS inflation data

(a) Cost pass through associated with implementation of recommendations from the Davies Review, approved by the Commission in May 2013

Figure 11.1: Opex allowance (including cost pass through) and actual opex for 2009-14 and proposed opex for 2014-19



Source: Utilities Commission

PWC Networks regulatory proposal

11.18 PWC Networks has forecast total opex of \$539.3 million (\$2013-14) for the forthcoming regulatory control period. The amounts proposed by the PWC Networks are set out in Table 11.2.

11.19 PWC Networks' forecast total opex for the forthcoming regulatory control period is approximately 67 per cent (in real terms) higher than the opex allowed for the current regulatory control period and 14 per cent (in real terms) higher than expected actual opex. Allowed opex includes the additional amounts approved by the Commission for the cost pass through of expenditure related to the Davies Review⁵⁷ and actual opex in the current regulatory control period includes significant expenditure related to

⁵⁷ Utilities Commission, [Cost Pass Through Application Final Determination](#), May 2013.

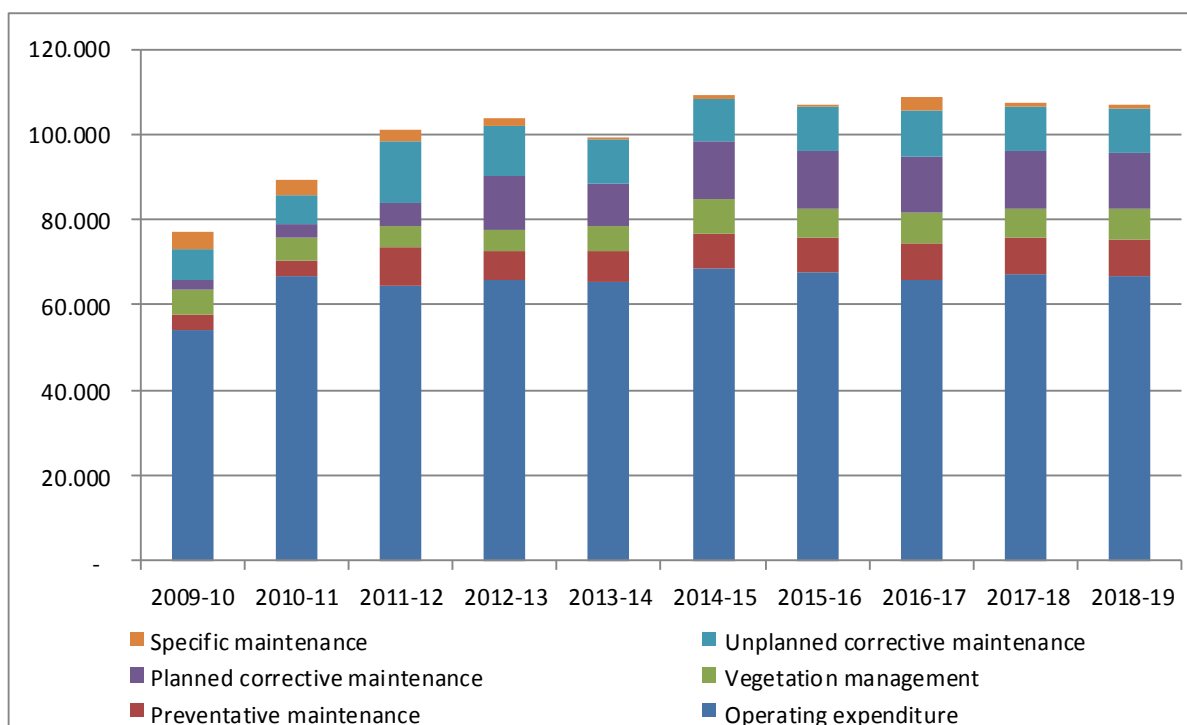
remedial works following the Casuarina Zone Substation failure in late 2008 and the implementation of a condition-based maintenance regime.

Table 11.2: PWC Networks proposed opex, (\$M, 2013-14)

	2014-15	2015-16	2016-17	2017-18	2018-19	Total
Operating expenditure						
Operating	68.71	67.75	66.03	67.22	66.68	336.39
Maintenance expenditure						
Preventative	8.19	7.97	8.60	8.45	8.81	42.02
Vegetation mgmt.	7.97	6.97	7.03	7.10	7.18	36.25
Planned corrective	13.32	13.49	13.25	13.20	12.97	66.23
Unplanned corrective	10.31	10.42	10.56	10.46	10.27	52.01
Specific	0.81	0.56	3.12	0.95	0.96	6.39
Total maintenance	40.60	39.41	42.55	40.15	40.19	202.990
Total proposed opex	109.30	107.17	108.58	107.37	106.87	539.29

Source: Derived from PWC Networks, Regulatory proposal, September 2013, RIN templates 2.1 and 2.2 (confidential)

Figure 11.2: Actual opex for 2009-14 and proposed opex for 2014-19 by opex driver



Source: Utilities Commission

11.20 PWC Networks identified the following key drivers for its proposed opex forecast:

- acquiring new expertise, skills and resources to improve the asset management function; and
- increasing knowledge about network assets leading to rising maintenance expenditure.

Submissions

11.21 The NTMEU expressed concern at the massive increase in opex both over the current regulatory control period and proposed by PWC Networks for the forthcoming regulatory control period:

"What is more concerning is the massive increase in opex - basically over a period of 5 years, opex has doubled, yet the size of the networks has not increased significantly. This implies that PWC is not in control of its operations and is trending towards operating on a "cost plus" approach and is not trending towards the efficient cost base for its networks."
(page.12)

11.22 The NTMEU argued that:

- there has been considerable replacement of assets during the current regulatory control period which should have resulted in a reduction of opex; and
- it is not demonstrated that the base year opex is efficient (with this premise being the basis of the 'base, step, trend' approach used by PWC Networks), with the NTMEU assessing benchmark efficient opex in the range of \$60-70 million per annum.

11.23 The NTMEU also noted that PWC Networks has cited step changes resulting in increased staffing for a variety of additional activities. The NTMEU expressed concern that a bottom up assessment of staffing needs would lead to an increase that is not efficient when considered from a top down perspective.

11.24 No other submissions were received on the PWC Networks' forecast capex.

Issues and Commission's considerations

11.25 The Commission engaged PB to provide independent reviews of the prudence and efficiency of PWC Networks' opex proposal. PB's report has been released with this Draft Determination.

11.26 The NT Network Access Code provides the Commission with more flexibility in its approach than the NER, which is prescriptive in its treatment of any expenditure that is not fully justified by the DNSP. While PB's review approach considers the NER and is based upon the principles and practices that the AER has applied in its previous regulatory reviews, the Commission directed PB to take into consideration the context in which PWC Networks is operating, specifically the recent development of appropriate processes and procedures and thus the limited availability of documentation and data.

11.27 PB's review of PWC's proposed opex included an assessment of:

- the efficiency of the forecast opex for each year of the forthcoming regulatory control period, and whether there is any further scope for efficiencies;
- the appropriateness of the allocation of opex costs to specific activities;
- the effectiveness of operating practices, procedures, and asset management systems at ensuring only necessary and efficient opex occurs;

- the major factors (drivers) that may affect the level of efficient opex required over the forthcoming regulatory control period; and
- the appropriateness of the opex forecasting methodology.

11.28 The Commission subsequently requested that PB undertake further analysis of the benchmarking of PWC Networks' operations and maintenance expenditure to provide a reasonable indication of the relative efficiency of PWC Network against its peers. The supplementary advice from PB has been released with this Draft Determination.

Operating costs

- 11.29 PWC Networks has developed its forecast for operating costs by considering individual opex categories and applying a top-down, base, step and trend modelling approach.
- 11.30 PWC Networks has used 2013-14 as the base year, as it considers that the 2013-14 opex reflects a reasonable and improving degree of efficiency, given the level of regulated funding and need to ensure equipment operates safely, and that the maintenance of assets is based on objective need.

Network management

- 11.31 Network management covers the general management of PWC Networks and management of legislative requirements. Network management accounts for 2 per cent of forecast opex.
- 11.32 A small step increase, driven by internal labour costs, is forecast for 2013-14, with costs then forecast to remain at that level for the forthcoming regulatory control period. The step change is not considered material.
- 11.33 The Commission considers that the forecast network management opex is efficient.

Service delivery

- 11.34 Service delivery covers the delivery of PWC Networks' maintenance and capital works programs. Service delivery accounts for 16 per cent of forecast opex.
- 11.35 Peak expenditure for service delivery opex occurred in 2010-11 as a result of the Remedial Asset Management Program (RAMP). With the completion of this program, opex declined over the last three years of the current regulatory control period and costs are forecast to remain at this lower level during the forthcoming regulatory control period. More accurate time sheeting has also resulted in some costs previously allocated to this category now being allocated to maintenance.
- 11.36 However, PB noted the inclusion of an 'Other – Remainder' amount that does not have a clear justification.
- 11.37 The Commission considers that the forecast service delivery opex should be reduced to remove the 'Other – Remainder' amount.

Strategy and planning

- 11.38 Strategy and planning covers PWC Networks' strategy and planning functions, including asset management, network planning development, and investment analysis. Strategy and planning accounts for 12 per cent of forecast opex
- 11.39 There was a gradual increase in expenditure on strategy and planning in the current regulatory control period, with expenditure in 2013-14 forecast to be \$3 million higher than in 2009-10. Expenditure is forecast to increase slightly in the forthcoming

regulatory control period. PB again noted the inclusion of an 'Other – Remainder' amount that does not have a clear justification.

- 11.40 The NTMEU expressed the view that while costs associated with the strategy and planning function may have risen as PWC Networks implemented its survey of assets and rectification program following the Davies Review, costs should have reverted to historic levels once this was completed.
- 11.41 The Commission considers that the development of appropriate processes and procedures for management of PWC Networks' assets is still relatively recent. While documentation is now substantially complete, the strategy and planning function will now turn to assessment and review to ensure continuous improvement, rather than reverting to previous practices. That said, the Commission expects PWC Networks to find scope for future efficiency dividends as the new asset management processes are bedded down.
- 11.42 The Commission considers that the forecast strategy and planning opex should be reduced to remove the 'Other – Remainder' amount. This reduces strategy and planning opex to the average annual expenditure level incurred in the current regulatory control period.

Metering

- 11.43 Metering covers electricity metering provision, and electricity meter data services. Meter reading is undertaken for both electricity and water meters as a common process, with costs allocated based on the respective proportion of total meters. Metering accounts for 4 per cent of forecast opex.
- 11.44 PWC Networks has identified a range of process gaps in its existing information technology systems. In addition, PWC Networks is proposing to implement a new structure that will result in an increase in staff. This results in an increase in forecast expenditure for the forthcoming regulatory control period of 39 per cent compared with current levels.
- 11.45 The Commission considers that increase in opex related to upgrading the IT system is justified as it is closely linked to increased licence and system support costs. While some increase in staffing was justified, the Commission considers that the increase proposed by PWC Networks is above the efficient level, as it appears to be based on the creation of new roles rather than any likely increase in the volume of work.
- 11.46 The Commission considers that the forecast metering opex should be reduced as proposed staffing levels are not efficient.

Regulatory costs

- 11.47 Regulatory costs covers the expenditure required for PWC Networks to meet new obligations that will be established as the Commission progressively moves towards a regulatory framework similar to the NER applied by the AER. Regulatory costs accounts for 1 per cent of forecast opex.
- 11.48 Regulatory costs were not separately identified in the current regulatory control period. Regulatory compliance costs were captured under network management as part of its responsibility for managing legislative requirements. Funding for preparation of the 2014 regulatory proposal has been capitalised.

- 11.49 PWC Networks' forecast for regulatory costs is based on estimated staffing requirements and costs for preparation of the 2019 regulatory proposal as being similar to those for the 2014 regulatory proposal.
- 11.50 The NTMEU did not consider an increase in regulatory costs justified, as PWC Networks has been subject to regulatory reviews in the past.
- 11.51 The Commission rejects this contention. Due to the limited availability of documentation and data from PWC Networks, previous reviews have been undertaken with minimal reliance on input from PWC Networks. Resourcing constraints for PWC Networks and economies of scale have meant that full adoption of an approach consistent with the NER requirements has also not been practicable for the forthcoming regulatory control period. However, the Commission believes that full compliance with these requirements is an appropriate objective for future regulatory control periods.
- 11.52 That said, however, the Commission considers that the staffing requirements proposed by PWC Networks are above the efficient level.
- 11.53 The Commission considers that the forecast regulatory costs opex should be reduced as proposed staffing levels are not efficient.

System operations

- 11.54 System operations are the services provided by PWC System Control to PWC Networks under a SLA. Services provided include network operations, under frequency load shedding, organising access to infrastructure and operation of a fault call centre service. System operation cost accounts for 4 per cent of forecast opex.
- 11.55 Costs increased in the current regulatory control period following a review of actual costs involved in provision of these services and the finalisation of a formal service level agreement. Costs are forecast to remain at current levels.
- 11.56 PB found that some costs had been included relating to operation of zone substations on unregulated networks.
- 11.57 The Commission considers that the forecast system operation costs opex should be reduced to remove the costs associated with non-regulated networks.

GSL costs

- 11.58 GSL costs cover the implementation and administration of the GSL scheme established under the GSL Code which took effect from 1 January 2012, and includes forecast GSL payments to customers and operating costs relating to the ongoing administration, reporting and customer interaction associated with the GSL scheme. GSL costs account for 1 per cent of forecast opex.
- 11.59 PWC Networks' base year payment estimate was sourced from a report prepared by PricewaterhouseCoopers and based on best case compliance assumptions. The proposal notes that GSL payments are assumed to decline in line with capital expenditure on the GSL program (part of PWC networks feeder upgrade program).
- 11.60 GSL operating costs related to the ongoing administration, reporting and customer interactions associated with the GSL Scheme, including assessment of customer eligibility, processing of applications, organising payments, recording of payments and annual updates of the GSL feeder maps.

- 11.61 PB found that PWC Networks forecast for payments to be made to customers were over-estimated because:
- estimated outages were based on actual performance in 2010-11, a year of relatively poor reliability performance; and
 - estimates of the number of customers affected by an outage are over-stated as PWC Networks has assumed that all customers on the feeder experience an interruption.
- 11.62 GSL schemes are generally funded through the operational costs of a network service provider and approved by the regulator through the network revenue determinations. The cost of the scheme is therefore borne by the network service provider's customer base. Should the total actual GSL payments made over the regulatory control period be below or above the estimated provision approved by the regulator, the network service provider will retain or absorb the difference.
- 11.63 The Commission accepts that a prudent and efficient network service provider may incur GSL payments in order to meet efficient planning goals. Planning goals are set to achieve average levels of reliability for all customers on the network. It is inevitable that there will always be some customers who, for whatever reason, will experience bad service, even if the network service provider is meeting the average reliability standards. A level of average reliability that resulted in no GSL payments would indicate over-investment and 'gold-plating' of the network.
- 11.64 The Commission considers that the forecast GSL costs opex should be reduced to levels commensurate with average reliability performance that meets the standards set by the Commission under the ESS Code.
- 11.65 No retrospective allowance has been made for GSL scheme obligations incurred in the current regulatory control period. In its recommendation to the Minister for the establishment of a GSL scheme,⁵⁸ the Commission recommended, and PWC agreed, that any GSL payments made until 1 July 2014 would come out of PWC Networks profits and that the Commission should consider if an allowance for GSL payments should be made when assessing the regulated revenue requirement of PWC Networks for the forthcoming regulatory control period.

Corporate and shared services

- 11.66 Corporate and shared services covers the portion of corporate overheads allocated to PWC Networks. This is PWC Networks' share of the functions undertaken at the Corporation level such as human resources and recruitment, finance, economics and legal services. Corporate and shared services costs account for 21 per cent of forecast opex.
- 11.67 There were two step changes in corporate and shared service opex in the current regulatory control period. The first occurred from 2009-10 to 2010-11 and was the result of PWC Networks' share of an increase in the total cost of the Employee and Organisational Services corporate support unit plus an increase in PWC Networks' relative share of this allocation due to an increase in personnel related to the RAMP program. The second step change from 2011-12 to 2012-2013 was a result of the

⁵⁸ Utilities Commission, [Review of Options for Implementation of a Customer Service Incentive Scheme For Electricity Customers](#), July 2010, page.27.

share of the new asset management system and its software depreciation expense allocated to PWC Networks. Costs are forecast to decrease over the early part of the forthcoming regulatory control period, back to 2010--11 levels by 2016-17.

- 11.68 The NTMEU argued that it did not accept, as a matter of principle, that the demand made on corporate services by PWC Networks has increased as a result of the growth of the network. The NTMEU expressed concern that PWC might maximise the allocation of overhead costs to the regulated businesses so as to minimise the overhead share carried by its unregulated businesses.
- 11.69 The Commission discussed the CAM provided by PWC in Chapter 6 of this paper. The Commission is satisfied that the allocation method and rationale are based on a suitable driver for each allocation.
- 11.70 The Commission considers that the forecast corporate and shared services opex is efficient.

Other

- 11.71 Other costs account for 0.2 per cent of forecast opex.
- 11.72 The Commission considers that the forecast other opex is efficient.

Maintenance costs

- 11.73 PWC Networks has developed its forecast for maintenance costs by using a 'bottom up' approach.
- 11.74 PWC Networks submitted that the use of historical trends in overall expenditure is not appropriate, due to significant changes in cost recording methodologies during the current regulatory control period. In addition, historical expenditure trends are not necessarily a good indication of future maintenance requirements.

Preventative maintenance

- 11.75 Preventative maintenance is maintenance which is carried out to prevent an asset failing or wearing out by providing continuous condition monitoring and systematic inspection. Preventative maintenance accounts for 8 per cent of forecast opex.
- 11.76 PWC Networks has based its forecast on a complete task breakdown derived from maintenance schedules extracted from its asset management system. The resultant forecast has been adjusted to account for step changes to the asset base, estimated costs of new preventative maintenance activities, an allowance for travel time and associated expenses incurred in relation to remote locations and an estimate of non-trades labour related to planning, supervision and administration of maintenance programs.
- 11.77 Expenditure is forecast to increase by 32 per cent over the current regulatory control period due to a greater focus on condition based management of assets.
- 11.78 The NTMEU agreed that replacement of assets should lead to lower maintenance costs, but did not accept what it characterised as PWC Networks' comment that new assets require more maintenance.
- 11.79 The Commission does not agree with this interpretation of PWC Networks' explanation of increased maintenance costs. Rather, the Commission interprets this as recognition by PWC Networks that increasing levels of preventative maintenance will mean that new assets will have a greater economic life than the assets they are replacing, those assets having had a shorter life due to maintenance not being appropriately undertaken.

11.80 The Commission considers that, while the justification for the cost estimates could be significantly improved, the costs are prudent and efficient in accordance with the requirements of the NT Network Access Code.

11.81 The Commission considers that the forecast preventative maintenance opex should be increased to allow for additional costs arising from deferral of replacement capex.

Vegetation management

11.82 Vegetation management is the clearance of vegetation near powerlines to maintain reliability and public safety. Vegetation management accounts for 7 per cent of forecast opex.

11.83 Expenditure is forecast to increase 33 per cent over the current regulatory control period to increase the vegetation cutting profile and to target vegetation management programs in the poorly performing areas.

11.84 The Commission considers that the need for reliability improvement through vegetation management had not been established by PWC Networks.

11.85 The Commission considers that an increase is not justified and that vegetation management opex should be reduced to current levels.

Planned corrective maintenance

11.86 Planned corrective maintenance covers maintenance on assets that are identified to be defective during the Preventative Maintenance or other inspection programs. Planned corrective maintenance accounts for 12 per cent of forecast opex.

11.87 Forecast expenditure is based on actual expenditure in 2012-13 adjusted for the projected growth rate of asset defects.

11.88 There was a step increase in expenditure from 2011-12 to 2012-13 due to a stronger focus on accurately capturing the time spent on maintenance activities. Expenditure in the forthcoming regulatory control period is expected to remain at this higher level as increased focus on the condition of assets has increased identification of assets where corrective maintenance is required. While planned asset replacement programs target the assets in poorest condition, an increase in planned corrective maintenance is required to address the backlog of defects in the wider network.

11.89 The Commission considers that PWC Networks' approach to forecast planned corrective maintenance is reasonable; however, PWC Networks did not clearly justify the change in defect growth rates.

11.90 The Commission considers that the forecast planned corrective maintenance opex should be adjusted to remove expenditure associated with the revised defect growth, and to allow for additional costs arising from deferral of replacement capex.

Unplanned corrective maintenance

11.91 Unplanned corrective maintenance covers maintenance on assets that fail in service in order to restore them to an acceptable condition so they can be operated safely at the required level of reliability and capacity. Unplanned corrective maintenance accounts for 10 per cent of forecast opex.

11.92 Forecast expenditure is based on actual expenditure in 2012-13 adjusted for the projected growth rate of asset defects. The annual forecast expenditure has then been adjusted for step changes due to capital works program, backlog reduction programs, administration and travel.

- 11.93 A significant step change of 217 per cent occurred from 2010-11 to 2011-12 due to a stronger focus on accurately capturing the time spent on maintenance activities. A subsequent decrease in 2012-13 is attributed to improved definition between planned and unplanned maintenance categories. Overall expenditure in the forthcoming regulatory control period is forecast to be slightly higher (by 3.4 per cent) than for the current regulatory control period.
- 11.94 The Commission considers that PWC Networks' approach to forecast unplanned corrective maintenance was reasonable.
- 11.95 The Commission considers that the forecast unplanned corrective maintenance opex should be adjusted to allow for additional costs arising from deferral of replacement capex.

Specific maintenance

- 11.96 Specific maintenance activities address systemic or common issues across an asset class. Specific maintenance accounts for 1 per cent of forecast opex.
- 11.97 Specific maintenance is forecast to decrease significantly from the current regulatory control period, following completion of the RAMP program and implementation of the Davies Review recommendations, to a small allowance for unforeseen contingencies.
- 11.98 The Commission considers that the forecast specific maintenance opex should be decreased to remove the costs of decommissioning of assets where the associated replacement capex has been deferred.

Real input cost escalation

- 11.99 PB was not required to assess forecast rates of growth in input costs. However, as part of its review, PB was required to ensure that forecast changes in input costs have been appropriately reflected in the cost escalation calculations performed by PWC Networks in forecasting opex.
- 11.100 PB reviewed the application of escalation in PWC Networks' forecast opex mode (refer Table 11.3) and confirmed that the rates applied are those relevant to the opex forecast for the forthcoming regulatory control period as recommended by consultants engaged by PWC Networks. PB found that PWC Networks' overall opex escalation process is reasonable, however PB did not offer a view about the reasonableness of the escalators themselves.

Table 11.3: Impact of PWC Networks real cost escalators on forecast capex, (\$M, 2013-14)

	2014-15	2015-16	2016-17	2017-18	2018-19	Total
Base opex	107.12	104.46	105.26	103.39	102.16	522.38
Real cost escalation adjustment	2.18	2.71	3.32	3.99	4.71	16.91
Total proposed opex	109.30	107.17	108.58	107.37	106.87	539.29

Source: Derived from PWC Networks, Regulatory proposal, September 2013, RIN templates 2.1 and 2.2 (confidential)

11.101 PWC Networks has applied the same real cost escalators for opex as were used for capex.

11.102 As discussed in Chapter 10, the Commission considers that the real input cost escalators proposed by PWC Networks are reasonable, taking into account the higher costs generally incurred in the Territory due to its remoteness and lack of economies of scale, and in view of expected cost pressures arising from such projects as Ichthys.

Efficiency of forecast opex

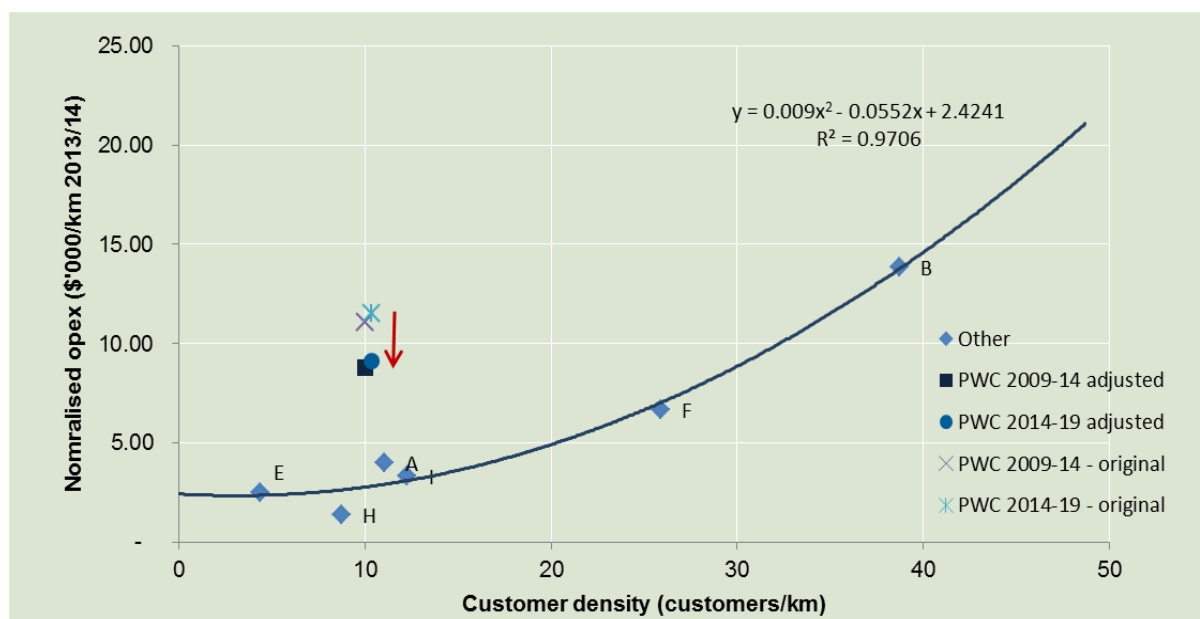
11.103 Underlying the base, step and trend modelling approach adopted by PWC Networks to develop its operating cost forecasts is the assumption that the base year represents efficient opex.

11.104 The NTMEU expressed concern as to whether opex in the base year (2013-14) is efficient.

11.105 PB's initial analysis of total opex found that PWC Networks appears to require a high level of opex compared to its peers on a per unit basis, approximately three times the cost of DNSPs with similar customer densities.

11.106 Figure 11.3 shows the benchmarking chart for Opex per km of line versus Customer density, with the proposed PWC Networks opex adjusted for regional uplift by applying a 30 per cent adjustment to the assumed variable cost, which was determined as the total opex less \$10 million.

Figure 11.3: Benchmarking of PWC Networks against peers: Normalised total opex vs. customer density



Source: Parsons Brinckerhoff, Supplementary advice

11.107 Following further analysis and after adjusting for economies of scale and regional uplift, PB found that a 27 per cent reduction would be required for PWC Networks to achieve the average of its peers.

11.108 PWC Networks has based its contention that 2013-14 represents an efficient level of operating expenditure based on benchmarking analysis undertaken by Huegin Consulting of PWC Networks' 2010-11 operating and maintenance expenditure. PWC Networks advises that:

"...Power Networks' 2010/11 operating and maintenance expenditure was benchmarked by Huegin as being in the middle of Australian distribution networks"(page.92)

- 11.109 The Commission notes that the average annual opex forecast by PWC Networks for the forthcoming regulatory control period is \$107.9 million, 21 per cent above the 2010-11 (in real \$2013-14) actual opex that PWC Networks has identified as efficient.
- 11.110 The Commission is not satisfied that PWC Networks' current opex is efficient, which in turn means that forecast opex also incorporates a level of inefficiency.
- 11.111 The specific opex adjustments identified by the Commission from the bottom up analysis set out above result in reduction in opex of 6 per cent. Based on the analysis by PB, a further reduction of 21 per cent would be required to eliminate the difference between PWC Networks and the average of its peers.
- 11.112 A key question for the Commission is the timeframe required for such a performance gap to be removed. The answer will depend on several factors, including the size of the efficiency gap, its possible causes and the degree of cost flexibility that the service provider could reasonably be expected to achieve.
- 11.113 If the timeframe is set too short, there is scope for the business to be placed under excessive financial stress and for service quality to drop substantially as maintenance programs are terminated to meet overly onerous annual cost reduction targets. For PWC Networks, this could impact on the significant improvement program currently underway. This runs the risk of consumers seeing quick price reductions but at the expense of receiving a degraded product in the future.
- 11.114 Conversely, setting the timeframe too long may place little pressure on PWC Networks to reduce costs and could see consumers paying more than they should be for a longer period of time.
- 11.115 The Commission considers that a glidepath approach to remove 10 per cent of the difference between PWC Networks and the average of its peers across the forthcoming regulatory control period provides an appropriate balance. Accordingly, in addition to the specific opex adjustments detailed in the preceding sections, the Commission has further reduced the opex forecast by 2.5 per cent in 2015-16, 5 per cent in 2016-17, 7.5 per cent in 2017-18 and 10 per cent in 2018-19.
- 11.116 Assessment of the scope for further efficiency improvements is expected to be undertaken as part of the next networks price determination.

Commission's conclusions

- 11.117 For the reasons summarised in this chapter, the Commission is not satisfied that the operational and maintenance expenditure proposed by PWC Networks reflects the reasonable costs to be incurred by it in connection with the operation and maintenance of the network. Further, the Commission is not satisfied that PWC Networks' forecast opex, taking into account the opex factors, reasonably reflects the opex criteria in clause 6.5.6 of the NER.
- 11.118 Following its review of PWC Networks opex proposal, the Commission has made the following adjustments⁵⁹:
- a reduction of \$8 million to the Service Delivery operating expenditure (opex) forecast as some components of work are not demonstrated to be prudent;

⁵⁹ Real cost escalation applied to PB recommendations by the Commission

- a reduction of \$5.8 million to the Strategy and Planning opex forecast as some components of work are not demonstrated to be prudent;
- a reduction of \$0.2 million to the System Operations opex forecast to remove works associated with non-regulated asset;
- a reduction of \$1.1 million to the Metering opex forecast as basing the forecast on the creation of new roles to support the metering activity, rather than workloads, has overestimated the required resources;
- a reduction of \$4.9 million to the GSL Costs opex forecast as the forecast used is an overestimate;
- a reduction of \$0.7 million to the Regulatory Costs opex forecast as many of the regulatory functions are already undertaken by the Network Management group and one Full Time Employee (FTE) should be sufficient to address any new requirements;
- an increase of \$3 million to the Preventative Maintenance opex forecast to align the preventative maintenance of zone substation assets with the deferral of some zone substation replacement works and the reallocation of some testing works that had been proposed as capex;
- a reduction of \$4.4 million to the Planned Maintenance opex forecast as the forecast growth rate of defects has not been justified. An increase to align the planned maintenance of zone substation assets with the deferral of some zone substation replacement works has been included;
- an increase of \$0.1 million to the Unplanned Maintenance opex forecast to align the unplanned maintenance of zone substation assets with the deferral of some zone substation replacement works;
- a reduction of \$10.4 million to the Vegetation Management opex forecast as the need to increase the vegetation management program from historical levels has not been established;
- a reduction of \$0.4 million to the Specific Maintenance opex forecast to align the decommissioning of zone substation assets with the deferral of some zone substation replacement works; and
- a reduction of \$25.2 million as a further unallocated efficiency adjustment to bring PWC Networks opex closer to the average achieved by its peers.

11.119 The Commission has also had regard to the opex criteria set out in the NER, taking into account the opex factors. The Commission considers this reduction is the minimum adjustment necessary to ensure PWC Networks' opex forecast meets the opex criteria.

Table 11.4: Commission conclusion on PWC Networks opex allowance, (\$M, 2013-14)

	2014-15	2015-16	2016-17	2017-18	2018-19	Total
PWC Networks proposed opex	109.30	107.17	108.58	107.37	106.87	539.29
Adjustment to service delivery	- 1.60	- 1.60	- 1.60	- 1.60	- 1.60	- 8.00
Adjustment to strategy and planning	- 1.15	- 1.15	- 1.15	- 1.15	- 1.15	- 5.75
Adjustment to metering	- 0.22	- 0.23	- 0.23	- 0.23	- 0.23	- 1.14
Adjustment to regulatory costs	- 0.14	- 0.14	- 0.14	- 0.14	- 0.15	- 0.72
Adjustment to GSL costs	- 0.98	- 0.98	- 0.98	- 0.98	- 0.98	- 4.92
Adjustment to system operations	- 0.05	- 0.05	- 0.05	- 0.05	- 0.05	- 0.24
Adjustment to preventative maintenance	0.83	0.92	0.93	0.18	0.27	3.12
Adjustment to vegetation management	- 2.90	- 1.84	- 1.86	- 1.88	- 1.90	- 10.38
Adjustment to planned corrective maintenance	- 0.85	- 1.05	- 0.70	- 0.83	-0.93	- 4.35
Adjustment to unplanned corrective maintenance	-	-	0.05	0.05	0.05	0.15
Adjustment to specific maintenance	-	-	-	- 0.35	-	- 0.35
Unallocated efficiency adjustment	-	- 2.53	- 5.14	- 7.53	- 10.02	- 25.22
Commission opex allowance	102.23	98.53	97.69	92.86	90.18	481.49

Source: Utilities Commission

Commission's draft decision

11.120 The Commission does not accept PWC Networks' forecast opex for the forthcoming regulatory control period.

11.121 The Commission is not satisfied that the operations and maintenance expenditure proposed by PWC Networks reflects the reasonable costs that will be incurred by the PWC Networks in connection with the operation and maintenance of the network. Further, the Commission is not satisfied that PWC Networks' forecast opex, taking into account the opex factors, reasonably reflects the opex criteria in clause 6.5.6 of the NER.

11.122 The Commission's estimate of the total opex required by PWC Networks in the forthcoming regulatory control period, that reflects the reasonable costs incurred by the PWC Networks in connection with the operation and maintenance of the network and the opex criteria taking into account the opex factors, is set out in Table 11.4 of this draft decision.

CHAPTER 12

Depreciation

Introduction

- 12.1 This chapter sets out the annual allowances for regulatory depreciation, also referred to as the return of capital, that sums the (negative) straight-line depreciation and the (positive) annual inflation effect on the opening RAB. It also sets out the Commission's assessment of PWC Networks' proposed asset lives used to calculate its depreciation schedules for the forthcoming regulatory control period.
- 12.2 Regulatory depreciation is used to model the nominal asset values over the regulatory control period and provides the depreciation allowance in the annual revenue requirement. The annual regulatory depreciation allowance is an amortised value of the RAB, derived using a specified depreciation schedule that reflects the nature of the assets over their economic life. Regulatory practice has been to assign a regulatory life (standard life) to each category of assets that equals its expected economic life.

Regulatory requirements

NT Network Access Code

- 12.3 Clause 6(2) of schedule 6 of the NT Network Access Code provides that:
- (2) *The asset lives used for the purpose of calculating depreciation rates are to be consistent with good electricity industry practice.*

National Electricity Rules

- 12.4 Clause 6.5.5 of the NER sets out the requirement for depreciation for each regulatory year. Clause 6.5.5(a) of the NER provides that depreciation must be calculated on the value of the assets included in the RAB at the beginning of the regulatory year.
- 12.5 A building block proposal must contain depreciation schedules that conform to the following requirements set out in clause 6.5.5(b) of the NER:
- (1) *the schedules must depreciate using a profile that reflects the nature of the assets or category of assets over the economic life of that asset or category of assets;*
 - (2) *the sum of the real value of the depreciation that is attributable to any asset or category of assets over the economic life of that asset or category of assets (such real value being calculated as at the time the value of that asset or category of assets was first included in the regulatory asset base for the relevant distribution system) must be equivalent to the value at which that asset or category of assets was first included in the regulatory asset base for the relevant distribution system;*
 - (3) *the economic life of the relevant assets and the depreciation methods and rates underpinning the calculation of depreciation for a given regulatory control period must be consistent with those determined for the same assets on a prospective basis in the distribution determination for that period.*

- 12.5.1 To the extent that a DNSP's building block proposal does not comply with the above requirements, clause 6.5.5(a)(2)(ii) of the NER provides for the AER to determine the depreciation schedules.

Framework and approach

- 12.6 In its Framework Statement, the Commission set out its preferred approach that the approach to calculating depreciation set out in clause 6.5.5 of the NER provides an appropriate model for PWC Networks' regulatory proposal.

PWC Networks regulatory proposal

- 12.7 PWC Networks advised that it had revised its depreciation methodology to align with the standard AER approach. This method was retrospectively applied in rolling forward the asset base to get the opening RAB for 2014.
- 12.8 PWC Networks consolidated assets into 14 regulatory asset categories. PWC Networks sought advice from SKM in determining the appropriate average life, average age and remaining life to apply to the 14 asset categories as at 30 June 2013. The standard life and remaining life for each asset category proposed by PWC Networks reflects this advice.
- 12.9 The regulatory depreciation allowances proposed by PWC Networks for the forthcoming regulatory control period are set out in Table 12.1.

Table 12.1: PWC Networks proposed regulatory depreciation allowances (\$M, nominal)

	2014-15	2015-16	2016-17	2017-18	2018-19	Total
Depreciation (DORC)	27.73	30.37	26.24	28.01	30.39	142.74

Source: PWC Regulatory Proposal, page.140

Submissions

- 12.10 No submissions were received on PWC Networks' calculation of the depreciation allowance.

Issues and Commission's considerations

- 12.11 The allowance for regulatory depreciation is an output of the NTRM rather than an input to be specified or proposed by the network service provider. The relevant inputs to the NTRM's calculation of an allowance for regulatory depreciation include:
- standard life for each asset class;
 - remaining life for each asset class; and
 - existing assets (opening RAB) and new asset values (forecast capex) for each asset class.

Standard life

- 12.12 There were several asset categories for which PWC Networks proposed different standard asset lives to those used in the 2009 NPD. In response to a query from the Commission, PWC Networks advised that this was due to a different aggregation into asset categories. For the 2009 NPD, 230 different asset classes taken from PWC Networks accounting register were aggregated into 20 regulatory asset classes. For the 2014 Network Price Determination, 48 asset categories identified by SKM for valuation purposes have been aggregated into 14 regulatory asset categories.

- 12.13 This means that some regulatory asset classes included assets of various types with different standard lives and that the weighting of these assets determined the average standard life for the asset class as a whole.
- 12.14 The changed aggregation of assets into the 14 asset classes used for the RFM and NTRM for the 2014 Network Price Determination has resulted in changes to the weighted average standard life across most categories.
- 12.15 However, a review of determinations undertaken by the AER for DNSPs in other jurisdictions shows that the AER accepts a range of standard asset lives. The values proposed by PWC are within the range that has been accepted by the AER in other determinations.

Remaining life

- 12.16 The 2013 SKM valuation has recommended values for remaining asset lives that are lower than those calculated by rolling forward the values in the 2009 NPD.
- 12.17 Based on the 2013 SKM valuation, PWC's RAB has, on a weighted average basis, only 48 per cent of its life remaining. By contrast, based on rolling forward the values from the 2009 NPD, the RAB would have 59 per cent of its life remaining.
- 12.18 This is generally consistent with information gained from other work undertaken by the Commission that PWC's assets are in a more degraded condition than previously thought.
- 12.19 Further, for the 2009 NPD, the Commission undertook a single-year 'cost of service' building block assessment to determine a P0 adjustment to apply at the commencement of the current regulatory control period. The regulatory depreciation allowance that formed part of this single year building block was well below the average annual depreciation allowance provided for other DNSPs (negative \$1.7 million) casting doubt on the reasonableness of the associated asset lives.
- 12.20 The Commission considers that the SKM review provides reliable asset life estimates and provides a level of granularity that will facilitate a greater degree of certainty in future determinations.

Commission's conclusions

- 12.21 The Commission has assessed the remaining lives and standard lives used by PWC Networks as input to the NTRM, and the resulting regulatory depreciation allowance, consistent with the requirements of clause 6.5.5 of the NER.
- 12.22 On the basis of the Commission's approved asset lives, opening RAB, and forecast capex allowance, the Commission has determined PWC Networks' regulatory depreciation allowances for the forthcoming regulatory control period as set out in Table 12.2.
- 12.23 The depreciation allowance is higher than that proposed by PWC Networks due to updating the expected inflation rate.

Table 12.2: Commission conclusion on regulatory depreciation allowances (\$M, nominal)

	2014-15	2015-16	2016-17	2017-18	2018-19	Total
Depreciation (DORC)	28.49	31.13	27.13	28.92	31.18	146.85

Source: Utilities Commission

Commission's draft decision

- 12.24 The Commission does not accept PWC Networks' depreciation allowances for the forthcoming regulatory control period.
- 12.25 The depreciation allowances for PWC Networks for the forthcoming regulatory control period, are set out in Table 12.2 of this draft decision.

CHAPTER 13

Cost of capital

Introduction

- 13.1 This chapter sets out the Commission's calculation of the rate of return for PWC Networks for the forthcoming regulatory control period. The key issues considered include the WACC parameters specified in the Commission's Framework Statement, and the determination of the risk-free rate, debt risk premium (DRP) and inflation forecast.

Regulatory requirements

NT Network Access Code

- 13.2 Clause 1(2) of schedule 8 of the NT Network Access Code provides that:
- (2) *The methodology for determining any WACC for use in the second and subsequent regulatory control periods is to be determined by the regulator in a manner that most effectively achieves the outcomes in clause 63 and is consistent with generally accepted regulatory practice at the time.*

National Electricity Rules

- 13.3 The AER must determine the rate of return in accordance with clause 6.5.2 of the NER⁶⁰. This clause provides that the return on capital building block must be calculated by applying the rate of return to the value of the RAB as determined in accordance with clause 6.5.1 and schedule 6.2 of the NER.
- 13.4 Clause 6.5.2(b) of the NER provides that the rate of return for a DNSP is a nominal post-tax WACC calculated in accordance with the formula set out in the NER.
- 13.5 Under clause 6.5.4(a) of the NER, the AER conducted the WACC review of the matters referred to in clauses 6.5.2 and 6.5.3 of the NER. On completion of the WACC review in May 2009, the AER issued its Statement of Regulatory Intent (SORI) regarding these parameters. Under clause 6.5.4(g) of the NER, a distribution determination must be consistent with the relevant SORI unless there is persuasive evidence justifying a departure from a value, method or credit rating level set out in the SORI. Clause 6.5.4(h) of the NER requires that in deciding whether a departure from a value, method or credit rating level set in the SORI is justified, the AER must consider:
- (1) *the criteria on which the value, method or credit rating level was set in a SORI (the underlying criteria); and*

⁶⁰ The version of the National Electricity Rules used by the Commission for the purposes of this Consultation Paper is the National Electricity Rules Version 49 which commenced from 5 April 2012. This is the version of the NER that was in effect at the commencement of the 2014 Network Price Determination process.

- (2) *whether, in light of the underlying criteria, a material change in circumstances since the date of the statement, or any other relevant factor, now makes a value, method or credit rating level set in a statement inappropriate.*

- 13.6 In November 2012, the Australian Energy Market Commission made a final determination on new rules to regulate electricity network prices. This included changes to the way in which the rate of return (under the NER and the National Gas Rules) is to be determined:
- The new rate of return framework is common to electricity distribution, electricity transmission and gas. It requires the regulator to make the best possible estimate of the rate of return at the time a regulatory determination is made. It requires the regulator to take into account market circumstances, estimation methods, financial models and other relevant information.
 - The regulator is required to undertake an open and consultative process at least every three years to develop its approach to setting the rate of return.
 - The new common framework enables the regulator to take a range of different approaches to estimate the return on debt component, potentially allowing for reduced risk for debt financing for network businesses.
- 13.7 The AER published a draft Rate of Return Guideline⁶¹ in August 2013 and a further Equity Beta Issues Paper⁶² in October 2013.
- 13.8 The Guidelines set out how the AER will determine a rate of return for each service provider that is commensurate with the efficient financing costs of a benchmark efficient entity with a similar degree of risk to that which applies to the service provider in respect of the provision of regulated services.

Framework and approach

- 13.9 In its Framework Statement, the Commission accepted PWC Networks' arguments that the post-tax approach mandated under the NER's approach should be modified to accommodate its constraints. It argued that, given the tight timeframe for the determination, a post-tax framework would only add to the already considerable increase in reporting requirements. However, it agreed that it should transition to a post-tax approach for the 2019 Network Price Determination.
- 13.10 Accordingly, the Commission's Framework Statement set out its preferred approach that it will determine the pre-tax nominal WACC based on the parameters established by the AER in its most recent distribution price determination being the 2012-17 distribution determination for Tasmania, except for the DRP. The DRP will be based on the updated methodology set out in the AER's draft determination for Tasmanian DNSPs for 2012-17 which estimates the DRP based on observed market data of a large representative sample of the benchmark Australian corporate bond with a 10-year term to maturity and BBB+ credit rating.

⁶¹ AER, [Better Regulation: Draft rate of return guideline](#), August 2013.

⁶² AER, [Better Regulation: Equity beta issues paper](#), October 2013.

PWC Networks regulatory proposal

- 13.11 PWC Networks' has applied the WACC parameters specified in the Commission's Framework Statement with the exception of the credit rating used to determine the DRP.
- 13.12 PWC Networks argues that the Bloomberg BBB rated fair value curve (FVC)⁶³ should be used to estimate the DRP, extrapolated to a 10-year term, as it is demonstrably 'generally accepted regulatory practice at the time' as applied by the AER to Aurora and several other network businesses.
- 13.13 PWC Networks has not updated the market based parameters – nominal risk free rate, the debt risk premium or the inflation rate – and has applied the values for those parameters used in the Aurora final determination.

Table 13.1: PWC Networks proposed WACC parameters

Set parameters	PWC Regulatory Proposal
Nominal risk-free rate	3.89%
Market risk premium (MRP)	6.00%
Equity beta	0.8
Debt risk premium	4.11%
Gearing	60:40
Inflation rate	2.60%
Corporate tax rate	30.00%
Gamma	25.00%
Pre-tax nominal WACC	8.80%

Source: PWC Networks, NTRM (ODRC)

Submissions

- 13.14 The NTMEU expressed the view that:

The reviews by the ERA and AER have been driven by a recognition that the previously used inputs grossly overstated the rates of return that should apply to the very low risk activities undertaken by networks. The NTMEU considers that the UC must take note of these recent changes when setting the WACC for PWC. (page.42)

- 13.15 The NTMEU suggested the following changes to the WACC parameters be considered:

- the risk free rate should be based on the five-year commonwealth government security (CGS), rather than the 10 year CGS;
- inflation should be market driven by assessing the difference between inflation indexed bonds and nominal bonds;

⁶³ A proprietary fair value, or best fit, curve, for BBB rated corporate bonds developed by Bloomberg and used by subscribers to determine a theoretical value for where a selected bond should trade compared to similar bonds.

- the DRP should reflect a five-year term for the debt and be based on the bond yields of a cohort of specific bonds rather than the Bloomberg FVC; and
- the equity beta should be lower, the NTMEU notes that the AER has recently released an issues paper indicating an equity beta of 0.7 is at the high end of the plausible range and that ERA has calculated that the equity beta should be 0.65.

13.16 No other submissions were received on the WACC.

Issues and Commission's considerations

Parameters on which there is agreement

13.17 The Commission considers that there is broad agreement on the market risk premium, gearing, corporate tax rate and gamma.

13.18 Accordingly the:

- market risk premium of 6.0 per cent proposed by PWC Networks is as specified in the Commission's Framework Statement and is accepted by the Commission;
- gearing of 60:40 proposed by PWC Networks is as specified in the Commission's Framework Statement and is accepted by the Commission;
- corporate tax rate of 30 per cent proposed by PWC Networks is as specified in the Commission's Framework Statement and is accepted by the Commission; and
- gamma of 25 per cent proposed by PWC Networks is as specified in the Commission's Framework Statement and is accepted by the Commission.

Expected inflation

13.19 The expected inflation rate is not an explicit parameter within the WACC calculation. However, it is used in the NTRM to forecast nominal allowed revenues and to index the RAB.

13.20 The Commission has estimated inflation consistent with the approach adopted by the AER (refer Table 13.2). Inflation estimated by applying the Reserve Bank of Australia's (RBA) short-term inflation forecasts (currently extending out to two years) and adopt the mid-point of its target inflation band beyond that period (2.5 per cent) for the remaining eight years. An implied 10-year forecast is derived by a geometric average of these individual forecasts.

Table 13.2: Commission's conclusion on expected inflation (per cent)

	June 2013	June 2014	June 2015 ^(a)	June 2016	June 2017	June 2018	June 2019	June 2020	June 2021	June 2022	Geo. Mean
Forecast inflation	2.40	2.75	2.50 ^(a)	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.51

Source: RBA Statement on Monetary Policy, November 2013, page.65

(a) the RBA has not yet released a forecast for the year ending June 2015. The mid-point of the target range has been assumed for the purposes of this draft decision.

Nominal risk free rate

13.21 The NTMEU has suggested that the risk free rate be based on the five-year, rather than the 10-year, CGS, but has advanced no arguments for this.

13.22 Use of the 10-year CGS is generally accepted regulatory practice and the Commission sees no reasons to depart from that at this time.

- 13.23 The Commission has calculated the nominal risk free rate as 4.13 per cent, based on the 10-year CGS over a 20 day averaging period from 4 to 29 November 2013.

Equity beta

- 13.24 The equity beta is a measure of expected volatility of the return on an investment in a particular asset or firm relative to the market as a whole. An equity beta of one implies that the business' returns have the same level of systematic risk as the overall market. An equity beta of less than one implies the business' returns are less sensitive to systematic risk than the overall market, and an equity beta greater than one implies the business' returns are more sensitive.
- 13.25 While an equity beta of 0.8 has historically been applied for electricity networks, recent research and empirical analysis, as noted by the NTMEU, strongly suggests that a lower value is appropriate.
- 13.26 In its Equity Beta Issues Paper, the AER proposed the adoption of an equity beta point estimate of 0.7 for a benchmark efficient entity, chosen from within a range of 0.4 to 0.7. This is based on conceptual analysis and empirical estimates for Australian energy networks from a range of studies.
- 13.27 The Commission considers generally accepted regulatory practice no longer supports an equity beta above 0.7.
- 13.28 The equity beta of 0.8 proposed by PWC Networks is not accepted by the Commission. The Commission has applied an equity beta of 0.7.

Debt risk premium

- 13.29 The DRP is the margin above the nominal risk-free rate that a debt holder in a benchmark efficient DNSP is likely to demand as a result of issuing debt to fund the business operations. It is intended to equate to a commercial cost of debt.
- 13.30 PWC Networks has proposed that the Bloomberg BBB rated FVC should be used to estimate the DRP, to a 10 year term, while the NTMEU has suggested that the DRP should reflect a five year term for the debt and be based on the bond yields of a cohort of specific bonds.
- 13.31 In light of the position taken by the AER in its draft Rate of Return Guidelines, the Commission's preference is to follow regulatory precedent and base the DRP on the Bloomberg BBB rated FVC. However, the Commission does not have access to Bloomberg data at this time.
- 13.32 For the purposes of this draft decision, the Commission has used the DRP as calculated by the AER with reference to the Bloomberg FVC in its most recent decision (SPAusnet draft determination, estimated over the 20 business days commencing from 24 June 2013).

Commission's conclusions

- 13.33 For this draft decision, the Commission has calculated an indicative nominal pre-tax WACC of 8.12 per cent for PWC Networks.
- 13.34 This WACC is lower than that proposed by PWC Networks because the Commission has adopted a lower equity beta and because market based parameters (nominal risk free rate, DRP and expected inflation) have changed since PWC Networks prepared its regulatory proposal.

13.35 Table 13.3 outlines the WACC parameters for this draft decision. The Commission will update the nominal risk-free rate and DRP, based on the agreed averaging period, and the expected inflation rate at a time closer to the final determination.

Table 13.3: Utilities Commission draft decision - WACC parameters

Set parameters	PWC regulatory proposal	Commission Draft Decision
Nominal risk-free rate	3.89%	4.13% ¹
Market risk premium (MRP)	6.00%	6.00%
Equity beta	0.8	0.7
Debt risk premium	4.11%	3.00% ²
Gearing	60:40	60:40
Inflation rate	2.60%	2.51 ³
Corporate tax rate	30.00%	30.00%
Gamma	25.00%	25.00%
Pre-tax nominal WACC	8.80%	8.12%

Source: Utilities Commission

1 Calculated as the yield on 10-year CGS averaged over 20 business days from 4 November 2013 to 29 November 2013

2 Taken from the most recent AER determination – SPAusnet Draft Determination August 2013

3 RBA Statement on Monetary Policy November 2013.

Commission's draft decision

13.36 The Commission has determined that the rate of return to apply to PWC Networks is 8.12 per cent.

CHAPTER 14

Cost pass through arrangements and contingent projects

Introduction

- 14.1 This chapter sets out the Commission's assessment of PWC Networks' proposed pass through events to apply during the next regulatory control period.
- 14.2 An objective of the incentive framework is to ensure that risks are appropriately managed. If a network service provider fails to manage risks properly and incurs additional costs, it would be expected to bear those costs. However, the NER recognises a network service provider can be exposed to risks beyond its control, which may have a material impact on its costs.
- 14.3 One means of dealing with such outcomes is the pass through provisions and the contingent project provisions contained in the NER. These provisions allow material changes (both increases and decreases) in the costs of providing direct control services to be passed through to distribution network users during a regulatory control period if certain events occur. This is achieved through an amendment to the price or revenue determination.

Regulatory requirements

NT Network Access Code

- 14.4 The NT Network Access Code does not specifically provide for cost pass throughs or contingent projects during a regulatory control period.
- 14.5 However, section 21 of the *Utilities Commission Act*, which provides the Commission with its general power to make price regulation determinations, specifies that:
 - (1) *Subject to the requirements imposed by the relevant industry regulation Act or by regulations under this Act, a determination under section 20(1)(a) may regulate prices in any manner that the Utilities Commission considers appropriate including –*
 - (a) *fixing a price or the rate of increase or decrease in a price;*
 - (b) *fixing a maximum price or maximum rate of increase or minimum rate of decrease in a maximum price;*
 - (c) *fixing an average price for specified goods or services or an average rate of increase or decrease in an average price;*
 - (d) *specifying pricing policies or principles;*
 - (e) *specifying an amount determined by reference to a general price index, the cost of production, a rate of return on assets employed or any other specified factor;*
 - (f) *specifying an amount determined by reference to quantity, location, period or other specified factor relevant to the supply of goods or services; and*
 - (g) *fixing a maximum revenue, or maximum rate of increase or minimum rate of decrease in maximum revenue, in relation to specified goods or services.*

- 14.6 Clause 71 of the NT Network Access Code provides for revoking or resetting a revenue or price cap in some circumstances:

The regulator may only revoke or reset a revenue or price cap with respect to a particular financial year or years if it appears to the regulator that:

- (a) the cap was set on the basis of false or materially misleading information provided to the regulator;*
- (b) there was a material error in the setting of the cap; or*
- (c) there were extraordinary developments with respect to any one of the key factors identified in clause 68 which, in the opinion of the regulator, were outside the network provider's control.*

National Electricity Rules

Cost pass through

- 14.7 The definition of a pass through event is set out in Chapter 10 of the NER:

Any of the following is a pass through event:

- (a) a regulatory change event;*
- (b) a service standard event;*
- (c) a tax change event;*
- (d) a terrorism event.*

An insurance event is a pass through event for a transmission determination (in addition to those listed above).

An event nominated in a distribution determination as a pass through event is a pass through event for the determination (in addition to those listed above).

- 14.8 Pass through events can be both positive and negative. A positive change event is a pass through event that materially increases the cost of providing direct control services. If this occurs, a DNSP may seek the approval of the AER to pass through to distribution network users a positive pass through amount under clause 6.6.1(a) of the NER.
- 14.9 A negative change event is a pass through event that materially reduces the cost of providing direct control services. If this occurs, a DNSP must notify the AER of the matters set out in clause 6.6.1(f) of the NER, including the details of the event and the negative pass through amount. After becoming aware that a negative change event has occurred and the AER imposes a requirement on the DNSP in relation to the negative change event, the AER must determine a negative pass through amount under clause 6.6.1(g) of the NER.
- 14.10 Clause 6.6.1 of the NER outlines the procedure for making pass through adjustments after the making of a distribution determination.
- 14.11 If it is determined that a pass through event has occurred, the AER must determine the pass through amount and how that amount is to be recovered over the remainder of the regulatory control period. The factors that the AER is required to take into account in determining the pass through amount are contained in clause 6.6.1(j) of the NER.
- 14.12 The NER does not specify a materiality threshold for pass through events. The AER sets a materiality threshold as part of its determination.

Contingent projects

- 14.13 A contingent project is a project that a DNSP will be required to undertake only if a particular trigger event occurs. Clause 6.6A.1 of the NER outlines the procedure for amending a distribution determination for a contingent project.
- 14.14 The DNSP must demonstrate to the AER's satisfaction that the relevant trigger event relating to a contingent project has occurred before an assessment of any adjustments to the MAR. Where a trigger event has occurred, the scope of the contingent project must not include any projects (or associated project scope) that were contained in DNSP's approved ex ante capex allowance.
- 14.15 Clause 6.6A.1(b)(2)(iii) requires that the proposed contingent capital expenditure exceed either \$30 million or 5 per cent of the value of the annual revenue requirement for the DNSP for the first year of the regulatory control period, whichever is the larger.

Framework and approach

- 14.16 In its Framework Statement, the Commission set out its preferred approach that it would adopt the same list of allowable pass through events as that applied to the 2009 NPD, but would follow the processes and have regard to the factors set out in clause 6.6.1 of the NER when determining whether a particular cost pass through event has occurred.
- 14.17 The Commission also proposed to adopt the AER's materiality thresholds for cost pass through events.

PWC Networks regulatory proposal

- 14.18 PWC Networks noted that the Commission decided to adopt the same set of pass through provisions for the forthcoming regulatory control period as it adopted in 2009 for the current period, namely extraordinary events that were a consequence of change in tax or insurance events, force majeure events, regulatory compliance events, service standard events or such other events that satisfied the conditions that the occurrence was not anticipated at the time of the preceding determination or was not a result of the actions of PWC's Board or management or the decisions of the Government in its capacity as owner or shareholder or guarantor of PWC.
- 14.19 PWC Networks noted also the Commission proposed to adopt the AER's materiality threshold. It proposed to clarify the Commission's adoption of the AER's definition of the threshold by expressing the threshold in the following way:

Operating costs: an additional cost of 1 per cent of the smoothed forecast revenue specified in the Commission's final decision in the years of the regulatory control period that the costs are incurred; and

Capital costs: where the cost to provide the return on and return of the additional capital using the WACC of the Commission's final decision and linear depreciation of the asset over its service life exceeds 1 per cent of the smoothed forecast revenue specified in the Commission's final decision in the years of the regulatory control period that the costs are incurred. (page.149)

- 14.20 PWC also proposed additional pass through events in addition to the events
- change in insurance and tax events;
 - a retailer insolvency event; and
 - a major network augmentation event.

Submissions

- 14.21 NTMEU expressed concerns about the pass through provisions sought in excess of those the Commission allowed in the 2009 NPD, arguing that the proposed additional pass through events sought by PWC Networks in its submission for the forthcoming regulatory control period would have the effect of reducing the risk it faced. Consequently, if the Commission allowed those pass through events, there should be a compensating reduction in PWC Networks' risk profile, that is the equity beta parameter in the WACC.
- 14.22 No other submissions were received on cost pass through arrangements.

Issues and Commission's considerations

- 14.23 In relation to the concerns raised by the NTMEU, the Commission notes that it has reduced the equity beta has been to reflect the lower risk faced by PWC Networks.
- 14.24 In the absence of specific provisions in the NT Network Access Code relating to cost pass through events and contingent projects, the Commission is seeking legal clarification of the scope for authorising such arrangements through the network price determination.
- 14.25 The Commission's considerations are predicated on the assumption that processes for dealing with cost pass throughs and contingent projects can be authorised by the Commission's final determination. The Commission's preferred approach is to set out processes and procedures in the final determination that mirror the arrangements in the NER, with the exception of setting a lower threshold of \$15 million for contingent projects.
- 14.26 If such arrangements cannot be authorised through the Commission's final determination and the NT Network Access Code remains unchanged, then the cost pass through events and contingent projects accepted by the Commission should be taken to be guidance, by way of examples, of the type of circumstances in which clause 71(c) of the NT Network Access Code might be applied.
- 14.27 The Commission has agreed to adopt the pass through provisions determined for the current regulatory control period ending in June 2014 for the forthcoming regulatory control period and the AER consistent threshold of 1 per cent of smoothed forecast revenue specified in the final decision in the years of the regulatory control period that the costs are incurred. The Commission notes it clarified in its Framework Statement that structural separation events, new technology events and emissions trading scheme events have been covered by existing pass through categories.
- 14.28 PWC Networks has proposed that the materiality threshold be assessed separately for operating costs and capital costs.
- 14.29 The Commission does not accept PWC Networks' proposal in this area. In the Commission's view, this would add additional complexity for little material gain.
- 14.30 PWC Networks has also proposed additional pass through events.
- 14.31 The Commission accepts liability above insurance cap and insurer credit risk events as cost pass through events within the category of insurance event. The Commission considers that these are both events for which the effect cannot be prevented or mitigated by prudent operational risk management. The Commission does not consider that insurance deductible meets the criteria for a cost pass through event.

- 14.32 The Commission does not consider that a retailer insolvency event meets the criteria for a pass through event. While the prudential arrangements that apply in the NEM to energy trading obligations do not apply in the Territory, the Commission considers that there are sufficient protections in the regulatory framework to protect PWC Networks if a retailer becomes insolvent. Clause 19(3)(c) of the NT Network Access Code allows PWC Networks to require a financial guarantee as a condition of a network access agreement. Further, the Electricity Retail Supply Code⁶⁴ sets out arrangements for credit support.
- 14.33 The Commission does not consider that a major network augmentation event meets the criteria for a pass through event. For projects such as the Mitchell Street switching station, the Commission's preference is to deal with such matters as contingent projects. To facilitate this, the Commission considers that it is appropriate to set a lower threshold under the Territory regulatory framework than that set in the NER.

Commission's conclusions

- 14.34 Pending legal clarification of the scope for authorising such arrangements through the network price determination, the Commission accepts the following pass through events as pass through events for PWC Networks for the forthcoming regulatory control period:
- the pass through events specified in the NER:
 - a regulatory change event;
 - a service standard event;
 - a tax change event; and
 - a terrorism event
 - additional pass through events:
 - an insurance event;
 - a force majeure event; and
 - such other events that satisfy the following requirements: (i) the occurrence was not anticipated at the time of the network price determination was made, or were, while allowable, explicitly excluded from affecting the outcome of that determination on the grounds that the likely impact on PWC Networks was unknown or too difficult to quantify at the time, and (ii) the occurrence is not a result of actions of PWC's board or management or of decisions of the Territory Government in its capacity as owner or shareholder or guarantor of PWC.
- 14.35 The Commission accepts the following contingent project:
- Mitchell Street switching station replacement, for which the trigger event is a decision by City of Darwin Council not to extend the lease on the Mitchell Street site.
- 14.36 If such arrangements cannot be authorised through the Commission's final determination and the NT Network Access Code remains unchanged, then the cost pass through events and contingent projects accepted by the Commission should be taken to be guidance, by way of examples, of the type of circumstances in which clause 71(c) of the NT Network Access Code might be applied.

⁶⁴ Utilities Commission, [Northern Territory Electricity Retail Supply Code](#), August 2011.

Commission's draft decision

- 14.37 Cost pass through events and contingent projects that apply to PWC Networks for the forthcoming regulatory control period are the events and projects set out in paragraphs 14.33 and 14.34 of this paper. These are events that may be considered by the Commission to be extraordinary developments that would require the Commission to revoke or reset the revenue cap pursuant to clause 71 of the NT Network Access Code.
- 14.38 If a relevant cost pass through event occurs or a relevant contingent project is required to be undertaken, PWC Networks may seek the Commission's approval of a cost pass through amount for the estimated financial effects of the relevant cost pass through event or relevant contingent project.

CHAPTER 15

Building block revenue requirements

Introduction

- 15.1 This chapter sets out the Commission's calculation of annual revenue requirements for PWC Networks for the provision of standard control services for each year of the forthcoming regulatory control period. This chapter also sets out X factor values to be applied as part of the revenue caps to apply to the standard control services provided by PWC Networks.

Regulatory requirements

NT Network Access Code

- 15.2 Clause 2 of schedule 6 of the NT Network Access Code requires that:
- (1) *The methodology to be used to determine the revenue cap in the first year of the first regulatory control period is termed the accrual building block approach.*
 - (2) *The approach calculates an annual revenue cap, that is, the maximum allowable revenue to be earned in a financial year by the network provider from prices and charges for regulated network access services, as the sum of:*
 - (a) *an allowable return on capital;*
 - (b) *an allowable return of capital; and*
 - (c) *an allowable return of non-capital costs.*
- 15.3 However, for the second and subsequent regulatory control periods⁶⁵, including the forthcoming regulatory control period, clause 1A of schedule 6 provides that:
- (1A) *The methodology for determining revenue or price caps in the second and subsequent regulatory control periods is to be determined by the regulator in a manner that most effectively achieves the outcomes in clause 63 and is consistent with generally accepted regulatory practice at the time.*

National Electricity Rules

Building block

- 15.4 Clause 6.3.2(a) of the NER states that the AER's building block determination must specify:
- the DNSP's annual revenue requirement for each regulatory year of the regulatory control period;
 - appropriate methods for the indexation of the regulatory asset base;

⁶⁵ Second regulatory control period 1 July 2004 to 30 June 2009, third regulatory control period (current) 1 July 2009 to 30 June 2014, fourth regulatory control period (forthcoming) 1 July 2014 to 30 June 2019.

- how any applicable efficiency benefit sharing scheme, service target performance incentive scheme or demand management incentive scheme are to apply to the DNSP;
 - the commencement and length of the regulatory control period; and
 - any other amounts, value or inputs on which the building block determination is based.
- 15.5 Clause 6.5.9 of the NER requires a building block determination to include the X factor for each year of the regulatory control period. The X factor must be set to equalise (in net present value terms) the revenue to be earned from the provision of standard control services with the total revenue requirement attributable to those services for the entire regulatory control period. The X factor must also minimise difference between expected revenue and the annual revenue requirement for the last year of the regulatory control period.
- 15.6 A DNSP's building block proposal must be prepared in accordance with the AER's post-tax revenue model (PTRM) and the requirements of Part C of NER. The building block proposal must also comply with the requirements of any relevant regulatory information instrument, such as a regulatory information notice or regulatory information order.
- 15.7 Under clause 6.12.3(d) of the NER, the AER must approve annual revenue requirements if it is satisfied that they have been calculated using the PTRM on the basis of amounts proposed by the DNSP and accepted by the AER, or otherwise determined by the AER under Part C of the NER.

X-factors

- 15.8 The AER must set X factors subject to the requirements of clause 6.5.9 of the NER. In particular, the X factors must:
- have regard to each DNSPs' total revenue requirement for the next regulatory control period;
 - minimise, as far as possible, the difference between the annual revenue requirement and expected revenue in the final year of the regulatory control period; and
 - equalise, in NPV terms, the total revenue requirement and expected revenues over the next regulatory control period under the applicable form of control.
- 15.9 Clause 6.5.9(c) of the NER also provides for different X factors to be set for each regulatory year.

Framework and approach

- 15.10 The Commission's Framework Statement provided that it would adopt a forward-looking building block approach using similar processes and practices as applied by the AER, but noting that full adoption of the AER processes may not be possible and variations may be required.
- 15.11 The Commission also proposed in the Framework Statement to adopt a pre-tax revenue model for use by the network service provider in the 2014 Network Price Determination, as a post-tax approach cannot currently be met by PWC without introducing unwarranted complexity.
- 15.12 The Commission, in consultation with PWC and seeking assistance from the AER where necessary, proposed to modified the AER's PTRM to accommodate a pre-tax approach for the purposes of the network price determination for the forthcoming regulatory control period. All other information requirements underlying the PTRM

would remained unchanged, and a modified pre-tax model suitable for publication would form part of PWC's regulatory proposal, consistent with requirements in the NER.

PWC Networks regulatory proposal

15.13 PWC Networks' calculation of annual revenue requirements and X factors is contained in its NTRM and is summarised in tables 15.1 and 15.2.

Table 15.1: PWC Networks roll forward of regulatory asset base (\$M, nominal)

	2014-15	2015-16	2016-17	2017-18	2018-19
Opening RAB	930.06	988.21	1,035.18	1,068.93	1,092.09
Net capex ^(a)	85.88	77.34	59.99	51.17	63.21
Indexation of the opening RAB	24.18	25.69	26.91	27.79	28.39
Straight-line depreciation	51.91	56.06	53.15	55.81	58.78
Closing RAB	988.21	1,035.18	1,068.93	1,092.09	1,124.91

Source: PWC Networks, NTRM (ODRC)

Note: the straight-line depreciation less the indexation of the opening RAB provides the regulatory depreciation building block allowance

(a) In accordance with the timing assumptions of the NTRM (and the AER's PTRM), the nominal capex values include a half WACC allowance to compensate for the average six-month period before capex is added to the RAB for revenue modelling purposes.

Table 15.2: PWC Networks proposed annual revenue requirements and X factors (\$M, nominal)

	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
Return on capital		81.85	86.97	91.10	94.07	96.11
Regulatory depreciation		27.73	30.37	26.24	28.01	30.39
Operating and maintenance expenditure		113.63	114.39	118.92	120.69	123.25
Unsmoothed annual revenue requirement		223.22	231.73	236.26	242.78	249.75
Expected revenues (smoothed revenue)	142.01	220.50	228.50	236.79	245.37	254.27
Forecast CPI (%)		2.60	2.60	2.60	2.60	2.60
X factors (%) ^(a)		- 51.34	- 1.00	- 1.00	- 1.00	- 1.00

Source: PWC Networks, NTRM (ODRC)

(a) Negative values for X indicate real revenue increases under the CPI-X formula.

15.14 The Commission's Cost Pass through Determination⁶⁶ provided for the approved cost pass through amount to be in two stages, with \$25 million to be recovered in 2013-14, the final year of the current regulatory control period, and the remaining \$29.92 million

⁶⁶ Utilities Commission, [Cost Pass Through Application: Final Determination](#), May 2013.

(\$2012-13) to be recovered over the next regulatory control period. PWC Networks has proposed that the remaining \$29.92 million be recovered in equal parts (adjusted for the time value of money) in each year of the forthcoming regulatory control period.

Table 15.3: PWC Networks proposed annual revenue requirements and X factors, including carryover from cost pass through decision (\$M, nominal)

	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
Unsmoothed annual revenue requirement		223.22	231.73	236.26	242.78	249.75
Carryover adjustment (2013 cost pass through)		7.37	8.23	9.28	10.25	11.44
Total unsmoothed annual revenue requirement		230.59	239.95	245.44	253.03	261.19
Expected revenues (smoothed revenue)	142.01	229.03	237.33	245.94	254.86	264.10
Forecast CPI (%)		2.60	2.60	2.60	2.60	2.60
X factors (%) ^(a)		- 57.20	- 1.00	- 1.00	- 1.00	- 1.00

Source: PWC Networks, NTRM (ODRC)

^(a) Negative values for X indicate real revenue increases under the CPI-X formula.

15.15 PWC Networks proposed an X factor of –57.20 per cent (that is, a real increase) for the first year of the forthcoming regulatory control period to account for the increase in revenue requirements between 2013-14 and 2014-15. It proposed an X factor of –1.00 per cent for years 2015-16 to 2018-19.

15.16 As required under the NER, the annual revenue requirements and expected revenues are equalised in NPV terms, and the difference between the annual revenue requirement and expected revenue in the final year of the regulatory control period is 1.12 per cent, as shown in Table 15.4.

Table 15.4: PWC Networks proposed annual revenue requirements and expected revenue, including cost pass through carryover (\$M, nominal)

	NPV	2014-15	2015-16	2016-17	2017-18	2018-19
Unsmoothed annual revenue requirement	957.10	230.59	239.95	245.44	253.03	261.19
Expected revenues (smoothed revenue)	957.10	229.03	237.33	245.94	254.86	264.10
Difference (%)		- 0.67	- 1.10	0.21	0.72	1.12

Source: PWC Networks, NTRM (ODRC)

Submissions

15.17 Submissions from both the NTMEU and NTCOSS expressed concern about the significant increases in prices resulting from PWC Networks' regulatory proposal.

15.18 NTCOSS expressed particular concern about detrimental social impacts on low income and disadvantaged Territorians.

- 15.19 The NTMEU noted that operating and maintenance costs comprised a larger proportion of the total revenue than is typical for most regulated networks:

In most regulated networks, opex is typically ~30% of the required revenue with return on capital being typically 50 per cent or more and regulatory depreciation up to 20 per cent.

PWC forecasts for its break down are:

- opex ~50%,
- return on capital ~40% and
- regulatory depreciation ~10%. (page.45)

Issues and Commission's considerations

- 15.20 The Commission is mindful of the potential impact of price increases on low income consumers. However, the NT Network Access Code requires the Commission to determine efficient costs of supply and that these costs should be recovered from customers in a cost-reflective manner. It does not allow the Commission to take into account social policy matters. These are currently dealt with by government through regulated retail tariffs and pensioner concession schemes for which PWC receives community service obligation (CSO) funding.
- 15.21 The Commission does not consider that the relative components of the building block analysis provide any relevant information on the prudence or efficiency of the revenue determination as there are a range of variables that can impact on the revenue required by a particular business.
- 15.22 Given that networks have a significant proportion of fixed costs, smaller networks are likely to exhibit a relatively higher proportion of operating costs than larger networks. Further, there has been a significant fall in interest rates in Australia over recent years, so that the proportion of capital related costs will be lower.
- 15.23 The Commission accepts PWC Networks' proposal that the remaining cost pass through be recovered in equal parts (adjusted for the time value of money) in each year of the forthcoming regulatory control period. However, the Commission has corrected an error in PWC Networks' calculation which had resulted in a double counting of indexation for inflation.

Commission's conclusions

- 15.24 The Commission's draft decision results in a total revenue requirement (exclusive of cost pass through carryovers) over the forthcoming regulatory control period of \$1,074.0 million, compared to \$1,183.7 million proposed by PWC Networks. Inclusion of the cost pass through carryover increases these figures to \$1,116.2 million and \$1,230.2 million respectively. The main reasons for this difference reflect the net effect of:
- removal of \$57.8 million from PWC Networks' forecast capex;
 - removal of \$57.8 million from PWC Networks forecast opex, which includes a global efficiency adjustment of \$25.2 million to bring PWC Networks closer to the average achieved by its peers;
 - a lower WACC of 8.12 per cent than the proposed 8.80 per cent by PWC Networks, due to the adoption of equity beta of 0.7 and updating of parameters based on observed market data; and
 - a reduction of \$4.3 million to remove double counting of indexation for inflation on the carryover of the cost pass through previously approved by the Commission.

Table 15.5: Commission conclusion on roll forward of PWC Networks' regulatory asset base (\$M, nominal)

	2014-15	2015-16	2016-17	2017-18	2018-19
Opening RAB	930.06	975.82	995.86	1,009.90	1,028.01
Net capex ^(a)	74.25	51.17	41.17	47.02	59.24
Indexation of the opening RAB	23.38	24.53	25.03	25.39	25.84
Straight-line depreciation	51.87	55.66	52.16	54.30	57.02
Closing RAB	975.82	995.86	1,009.90	1,028.01	1,056.07

Source: Utilities Commission, NTRM

Note: the straight-line depreciation less the indexation of the opening RAB provides the regulatory depreciation building block allowance

(a) In accordance with the timing assumptions of the NTRM (and the AER's PTRM), the nominal capex values include a half WACC allowance to compensate for the average six-month period before capex is added to the RAB for revenue modelling purposes.

Table 15.6: Commission conclusion on PWC networks annual revenue requirements and X factors (\$M, nominal)

	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
Return on capital		75.49	79.21	80.84	81.98	83.44
Regulatory depreciation		28.49	31.13	27.13	28.92	31.18
Operating and maintenance expenditure		106.29	105.10	106.84	104.17	103.74
Unsmoothed annual revenue requirement		210.28	215.44	214.80	215.06	218.37
Expected revenues (smoothed revenue)	142.01	200.97	208.08	215.45	223.07	230.97
Forecast CPI (%)		2.51	2.51	2.51	2.51	2.51
X factors (%) ^(a)		- 38.05	- 1.00	- 1.00	- 1.00	- 1.00

Source: Utilities Commission, NTRM

Table 15.7: Commission conclusion on PWC Networks proposed annual revenue requirements and X factors, including carryover from cost pass through decision (\$M, nominal)

	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
Unsmoothed annual revenue requirement		210.28	215.44	214.80	215.06	218.37
Carryover adjustment (2013 cost pass through)		7.18	7.76	8.39	9.07	9.81
Total unsmoothed annual revenue requirement		217.45	223.20	223.19	224.13	228.18
Expected revenues (smoothed revenue)	142.01	208.78	216.17	223.82	231.74	239.94
Forecast CPI (%)		2.51	2.51	2.51	2.51	2.51
X factors (%) ^(a)		- 43.42	- 1.00	- 1.00	- 1.00	- 1.00

Source: Utilities Commission, NTRM

^(a) Negative values for X indicate real revenue increases under the CPI-X formula.

15.25 The difference between the annual revenue requirement and expected revenue in the final year of the regulatory control period is 5.16 per cent

Commission's draft decision

15.26 The Commission does not approve the annual revenue requirement proposed by PWC Networks.

15.27 In accordance with clause 62(1)(a) of the NT Network Access Code, the Commission has determined that the total revenue requirement for PWC Networks for the forthcoming regulatory control period is \$1,074.0 million (nominal) plus an additional \$42.2 million (nominal) carried over from the cost pass through approved by the Commission in May 2013⁶⁷ of costs arising from the implementation of the Davies Review recommendations, as set out in Table 15.7 of this draft decision.

15.28 In setting the revenue cap, the Commission has taken into account the revenue requirements of PWC Networks during the forthcoming regulatory control period, having regard to the principles set out in clause 68 of the NT Network Access Code

15.29 The X factors to apply to PWC Networks for each year of the forthcoming regulatory control period are as specified in Table 15.7 of this draft decision.

⁶⁷ Utilities Commission, [Cost pass through application – Final determination](#), May 2013.

CHAPTER 16

Capital contributions principles and methods statement

Introduction

- 16.1 In accordance with clause 79(2) of the NT Network Access Code, the network service provider may require a network user to make a capital contribution (in the form of assets or a financial payment) where the:
- provision of network access services to the network user require new or upgraded connection assets or network system assets (involving asset augmentation or extension of connection equipment); and
 - cost of the assets (including design, construction, installation and commissioning) cannot be fully recovered by the network service provider through future tariff revenue.
- 16.2 The Commission is required to oversee the application of principles for setting of capital contributions and charges.⁶⁸
- 16.3 Prior to the commencement of each regulatory control period, PWC Networks must submit to the Commission for approval, a statement providing details of principles and methods for establishing capital contributions.⁶⁹
- 16.4 Clause 81(3) of the NT Network Access Code provides that:
- ...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 set out in this Chapter or is inconsistent with the requirements elsewhere in the Code.*
- 16.5 PWC Networks submitted a statement setting out its NCCP to be applied during the current regulatory control period as part of its regulatory proposal for the 2009 NPD. In accordance with clause 81(3) of the NT Network Access Code, the Commission approved the NCCP on 31 March 2009 as part of its 2009 Final Determination.
- 16.6 Capital contributions are also applied by PWC Networks under a separate policy, the Distribution System Extension Policy (DSEP) to meet the capital contribution provisions where the Minister declares an area to be a distribution system extensions area under section 86 of the *Electricity Reform Act*.
- 16.7 In July 2006, the Commission approved PWC Networks' current DSEP as complying with the provisions of section 86(7) of the *Electricity Reform Act*. The DSEP includes a schedule of financial contribution fee components.⁷⁰

⁶⁸ NT Network Access Code clause cl.62(1)(c).

⁶⁹ NT Network Access Code clause cl.81(2).

⁷⁰ Utilities Commission, [Electricity Distribution System Extension: Approval](#), 1 July 2006.

Regulatory requirements

- 16.8 Clause 81(3) of the NT Network Access Code requires that the Commission must approve PWC Networks' capital contribution principles and methods statement for use from 1 July 2014 unless the statement does not comply with the requirements set out in Chapter 8 of the NT Network Access Code (Capital Contributions), or is inconsistent with the requirements elsewhere in the Code, in particular the objectives of network pricing set out in clause 74.

PWC Networks regulatory proposal

- 16.9 PWC Networks' regulatory proposal includes a proposed capital contribution principles and methods statement and capital contributions policy. PWC Networks has also provided to the Commission a separate submission on the proposed policy and principles and methods statement.
- 16.10 In November 2013, the Commission consulted separately on the proposed policy and principles and methods statement. A consultation paper was distributed to stakeholders, advertised publicly and made available on the Commission's website.
- 16.11 The high level objectives of the revised NCCP are to:
- provide appropriate economic pricing signals to network users that reflect the true cost of connection to PWC Networks or any new or upgraded network access services;
 - ensure the commercial viability of connections made to PWC Networks' electricity networks, in order to provide a return to the shareholders commensurate with the required investment; and
 - ensure more equitable outcomes for both new and existing network users.
- 16.12 PWC Networks' revised policy submitted to the Commission outlines plans to levy a capital contribution on a network user for any new or upgraded network access service it provides.
- 16.13 PWC Networks' submission identifies that the changes proposed to the NCCP aim to align the policy with those adopted in other Australian jurisdictions.
- 16.14 Key elements of the proposed NCCP include:
- merging of the existing NCCP and DSEP to a single policy applying to all network users;
 - recovery of full capital costs incurred by PWC Networks;
 - that all network users will be required to pay the capital contribution in full prior to PWC Networks commencing the works;
 - maximum capital contributions for large users to be based upon the present value (PV) of the costs associated with the connection, less the PV of the project future tariff revenues earned from the connection offset by the shared network costs;
 - that upgrades to serviced properties by small individual network users will be based on the revised NPV approach to determine the maximum capital contribution;
 - that extensions to unserved areas by small individual network users will be based on a revised NPV approach to determine the maximum capital contributions;

- an NPV approach used to set the maximum amount of a capital contribution comprising the shortfall in the viability of the required works modified to offset the shared network costs from the projected future tariff revenues earned from the connection;
- an investment timeframe of 15 years, or less if PWC Networks reasonably considers that the project is characterised by a short asset life, risk of asset stranding or a high risk of default, used to calculate present value of the maximum capital contribution;
- that the option to repay the capital contribution over time through interest-free loan will no longer be available; and
- introduction of a cost sharing scheme to divide distribution system extension costs between all the beneficiaries of the system extension, within a five year timeframe of the original network user making the capital contribution.

Submissions

- 16.15 The Commission received one submission - from the Property Council of Australia – Northern Territory Division (PCNT).
- 16.16 The PCNT advocated fair costing for new and redeveloped networks in the Territory, with one of the recurring concerns raised by members being a lack of transparency and clear policies from PWC Networks for utilities augmentation works to service new or redeveloped sites. PCNT advised that the lack of clear policies has led to considerable uncertainty and financial risk for its members.
- 16.17 PCNT expressed concern with some definitions and operation of the proposed policy, and identified areas which required further clarification.
- 16.18 PCNT also sought clarification on co-generation options available to property owners and how excess electricity can be transmitted back into the grid.

Issues and Commission's considerations

- 16.19 The Commission must approve the principles and methods statement contained in the NCCP unless the Commission finds the principles and methods:
- did not meet the requirements of Chapter 8 of the NT Network Access Code;
 - was inconsistent with other requirements of the Code; or
 - was inconsistent with section 86(2) of the *Electricity Reform Act*.
- 16.20 The submission from the PCNT did not identify any major concerns with the NCCP or areas of inconsistency between the principles and methods of the NCCP and the NT Network Access Code or *Electricity Reform Act*.
- 16.21 The Commission engaged Deloitte Economic and Infrastructure Advisory (Deloitte) to provide high level advice on PWC Networks' NCCP and NPPS (discussed in Chapter 17). The Commission sought advice from Deloitte on the consistency of the NCCP with the network pricing objectives, capital contributions principles and high level pricing objectives of cost reflective price signals, simplicity, stability and equity.
- 16.22 Deloitte's view was that the level of detail included in the NCCP is comparable to that provided in other network businesses' (and regulators, where appropriate) policies.

16.23 Deloitte did identify some areas where there were, possibly, inconsistencies with the revised NCCP and relevant sections of the NT Network Access Code or *Electricity Reform Act*. These areas were:

- that the assumed 15-year connection life for small individual network users may be too short and should be amended to 30 years to be consistent with the NT Network Access Code; and
- that customers should 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.

Commission's conclusions

16.24 The Commission must approve the principles and methods statement of the NCCP unless it does not comply with the requirements set out in Chapter 8 of the NT Access Code (Capital Contributions) or is inconsistent with the requirements elsewhere in the NT Network Access Code, in particular the objectives of network pricing set out in clause 74, or section 86(2) of *Electricity Reform Act*.

16.25 The Commission did not find any significant inconsistencies with the NT Network Access Code or the *Electricity Reform Act*, but identified a number of issues which should be addressed by PWC prior to the Final Determination including:

- connection life for small individual network users be amended to 30 years or further justification supporting a shorter timeframe be provided by PWC Networks; and
- confirmation that customers should 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.

16.26 The Commission encourages PWC to dialogue with the PCNT to improve understanding of the proposed NCCP characteristics.

16.27 PCNT also sought the clarification of co-generation options available to property owners and how excess electricity can be transmitted back into the grid.

Commission's draft decision

16.28 The Commission, as above. The Commission approves PWC Networks' capital contribution principles and methods statement for use from 1 July 2014 in accordance with clause 81(3) of the NT Network Access Code, subject to amendments being made to address the issues raised by the Commission, as above.

CHAPTER 17

Network pricing principles and methods statement and indicative pricing proposal

Introduction

- 17.1 In the lead up to the commencement of each regulatory control period, the Commission is required to oversee the application by the network service provider of principles for setting reference tariffs to apply to standard network access services.
- 17.2 While the network service provider is responsible for establishing the pricing structure that best gives effect to the principles set out in the NT Network Access Code, the network service provider's proposed reference tariffs must be provided to the Commission for approval.

Regulatory requirements

NT Network Access Code

- 17.3 Clause 75(1) of the NT Network Access Code stipulates that the network service provider is to be responsible for establishing the pricing structure that best gives effect to the pricing principles set out in clause 74 of the Code.
- 17.4 However, prior to the commencement of each regulatory control period, the network service provider is required to provide to the Commission for approval a statement setting out the details of the principles and methods to be used for defining the individual standard network access services to be supplied by the network service provider and for establishing the reference tariffs to apply to those services.⁷¹ This is referred to as the Network Pricing Principles Statement (NPPS).
- 17.5 Further, at least 60 days prior to the start of each financial year, the network service provider must provide to the Commission for approval a statement setting out its proposed reference tariffs for the standard network access services for that year, with the statement detailing how the tariffs and charges have been calculated by application of the principles in the NT Network Access Code.⁷²
- 17.6 Clause 78(3) of the NT Network Access Code provides that:
 - (3) *The regulator must approve the tariffs and charges, or individual tariffs and charges, unless in the opinion of the regulator the tariffs and charges would result in the network provider not complying with the principles laid down in this Chapter or is inconsistent with requirements elsewhere in this Code.*

⁷¹ NT Network Access Code clause cl.75(5).

⁷² NT Network Access Code clause cl.78(1).

- 17.7 In the event that the Commission considers there to be a conflict between the requirements of clause 74(1) and those set out in clause 63, the requirements of clause 63 are to take precedence.

National Electricity Rules

- 17.8 The NER do not require DNSPs to provide a stand-alone document setting out the principles and methods for defining individual network access services.
- 17.9 Rather, the pricing principles underlying the manner in which revenue is to be recovered from each tariff class are set out in the clause 6.18.5 of the NER.
- 17.10 However, clause 6.18.4 of the NER requires the AER to formulate provisions of a distribution determination governing the assignment or reassignment of customers to tariff classes.
- 17.11 The DNSP is required to submit a comprehensive pricing proposal each year which includes definitions of the tariffs and tariff classes into which customers for direct control services are divided and their charging parameters, and which demonstrates that prices comply with the NER pricing principles. The range of matters that must be included in the pricing proposal is listed in clause 6.18.2 of the NER.

Framework and approach

- 17.12 The Commission's Framework Statement set out its preferred approach, which is to assess the NPPS that details PWC Networks' proposed structure for network tariffs, against the requirements of the NT Network Access Code and relevant provisions of the NER.
- 17.13 Mindful of the constrained timeframe for approval of network tariffs set out in the NT Network Access Code, the Commission also proposed that PWC Networks provide an indicative tariff proposal for the first year of the regulatory control period as part of its regulatory proposal.

PWC Networks regulatory proposal

- 17.14 PWC Network's draft NPPS and Pricing Proposal sets out:
- principles and methods used for establishing the network tariffs to apply to standard control services and alternative control services;
 - proposed pricing strategy for the forthcoming regulatory control period; and
 - proposed indicative network prices for 2014-15.
- 17.15 PWC Networks has identified the principles for establishing network tariffs as:
- enhancing cost reflectivity and reducing cross subsidies through network tariffs;
 - curtailing peak demand growth and, thereby, network costs;
 - improving demand side participation and energy efficiency;
 - rolling out smart meters and time-based pricing, to reduce demand during peak periods;
 - keeping prices as simple as possible and readily understandable by customers and market participants;
 - keeping prices stable and predictable; and
 - aligning prices and price components that are designed to signal to customers the need to moderate demand with the long-run marginal cost of supply to customers.
- 17.16 PWC Networks proposes to establish an additional tariff class, resulting in three tariff classes in the forthcoming regulatory control period:

- Domestic (all domestic customers);
 - Commercial HV (high voltage connected commercial kVA customers); and
 - Commercial LV (all other commercial customers and streetlighting and other unmetered supplies).
- 17.17 In the current regulatory control period, Commercial HV and Commercial LV constitute a single tariff class.
- 17.18 PWC Networks proposes to make alterations to some standard control services tariffs over the forthcoming regulatory control period. The proposed changes are set out in the NPPS.
- 17.19 The proposed tariff structure changes are based on analysis conducted by PWC Networks using its new Cost of Supply model.
- 17.20 PWC Networks submitted that the proposed tariff changes will:
- improve the cost reflectivity of the tariffs concerned;
 - improve equity between customers;
 - provide price signals intended to encourage customers to moderate their demand; and
 - in the case of the commercial kVA tariffs, simplify their existing structure.
- 17.21 PWC Networks submits that proposed revenue through tariffs for each tariff class lies between the stand-alone cost and the avoidable cost of supplying that tariff class and is therefore economically efficient.
- 17.22 PWC Networks proposes a uniform increase in all tariffs in the first year of the forthcoming regulatory control period, with rebalancing to occur gradually in later years of the regulatory control period.

Submissions

- 17.23 NTCOSS expressed concern at the emphasis on cost reflective pricing and the impact this may have on older and disadvantaged Territorians. NTCOSS argued:
- ...that attempts to limit peak load at the household level have the potential to cause older people to increase their focus on 'energy conserving' rather than 'energy efficient'. This response may have other undesirable consequences. (page.10)*
- 17.24 NTCOSS submitted that low income households may not have the financial means to take advantage of energy efficiency schemes. In addition, there is little incentive for landlords to make energy efficiency improvements when the cost of poor thermal efficiency in older accommodation is borne by renters.
- 17.25 The NTMEU argued that:
- ...PWC provides no evidence as to how it has concluded the current tariffs are not cost reflective, other than to provide a table purporting to show the recoveries by each class and compares these to its assessment of the allowances for each customer class. (page.46)*
- 17.26 The NTMEU submitted that PWC has not provided any explanation or evidence to support the derivations of the allowances.
- 17.27 In his submission, Dr Clark noted that network costs over time are strongly related to utilisation of overall capacity and the key driver was peak network load (in relation to the average load). Dr Clark stated that analysis of the Darwin-Katherine system indicated that most network costs are tied to the top 20 per cent of demand, which

occurs in the top 10 per cent of hours. Dr Clark further commented that perhaps 70 per cent of Darwin-Katherine system load is understood as cooling load, and this portion will be higher at times of peak demand. Dr Clark commented that any reduction of peak demand (or reduction in its growth), acts to reduce network costs and it is therefore important for the long-run cost of electricity that economic signals give focus to the mechanisms that can flatten or reduce cooling load at peak times.

- 17.28 Dr Clark noted that, time of use metering can provide a powerful mechanism for imposing cost reflectivity onto patterns of demand, and driving rational medium- and long-term economic responses. Dr Clark suggested that the case for strong cost reflectivity can drive the market to identify and deliver solutions that increase utility to society overall faster than otherwise.
- 17.29 Dr Clark noted that costs associated with a rollout of smart meters, and social aspects of maintaining simplicity in tariff arrangements, require a careful approach. Dr Clark agreed with PWC Networks' proposed roll-out of smart meters and Inclining Block Tariffs for the forthcoming regulatory control period.
- 17.30 Dr Clark advised that PWC Networks' proposal appeared to discard any considered discussion on a flat 58 per cent increase to existing network tariffs, that he did not understand the justification for a large proposed increase, but if required it would be best to move to inclined block structures as soon as possible.

Issues and Commission's considerations

- 17.31 The Commission must approve the NPPS unless it is inconsistent with the principles in clause 74 of the NT Network Access Code.
- 17.32 Likewise, the Commission must approve the tariffs and charges proposed by PWC Networks unless the Commission finds that the tariff and charges:
- do not comply with the principles laid down in Chapter 7 of the NT Network Access Code; or
 - are inconsistent with requirements elsewhere in the Code.
- 17.33 Deloitte was asked to provide the Commission with a high-level view on whether or not:
- the NPPS 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 service provider complying with the principles in Chapter 7 of the NT Network Access Code and requirements elsewhere in that Code.
- 17.34 Deloitte did not provide a comprehensive assessment of every proposed tariff or policy, but rather addressed only those areas where PWC Networks' proposal has shortcomings or is inconsistent or does not meet the requirements of the NT Network Access Code.

Commission's conclusions

- 17.35 The Commission must approve the NPPS unless it is inconsistent with the principles in clause 74 of the NT Network Access Code.
- 17.36 The Commission did not find any significant inconsistencies with the NT Network Access Code, but did identify some minor issues:
- PWC Networks' proposal to move to commercial kVA capacity tariffs may not be consistent with the NT Network Access Code as it does not necessarily

appropriately balance the interests of PWC Networks and network users, or promote price stability; and

- the approach to apply an excess KVAR tariff is inconsistent with clauses 74 (1)(a) and (1)(b) of the NT Network Access Code.

Commission's draft decision

17.37 The Commission approves PWC Networks' network pricing principles for use from 1 July 2014 in accordance with clause 75(6) of the NT Network Access Code, subject to amendments being made to address the issues raised by Deloitte in December 2013.

APPENDIX A

PWC network services classification and Determination of excluded services

Clause 72(1) of the NT Network Access Code requires that excluded network access services, being those services for which the associated costs and revenue are excluded from the revenue or price cap, are to be determined by the regulator (when the regulator determines the network revenue caps) in a manner consistent with clause 6(3) of the Competition Principles Agreement.

In accordance with clause 72(1) of the NT Network Access Code, the Commission determines the following services to be excluded network access services for the 2014 Network Price Determination:

- 1. Excluded network access services which do not lend themselves to being regulated by the price control mechanism for regulated network access services and, in the opinion of the Commission, are not subject to effective competition (equivalent to AER classification of alternative control services)**
 - a. Any above standard or non-standard network services:
 - i. provided at the request of a network user with higher (or lower, where permissible) quality or reliability standards than are required under applicable legislation, codes or other regulatory instruments; or
 - ii. requiring extension or augmentation of the regulated network associated with the provision of a new connection point or upgrading the capability of an existing connection point to the extent that the network user is required to make a financial contribution in accordance with clause 80 of the NT Network Access Code.
 - b. Any above standard or non-standard connection services:
 - i. provided at the request of a network user with higher (or lower, where permissible) security, reliability or service quality than are required under applicable legislation, codes or other regulatory instruments; or
 - ii. requiring the provision of a new connection point or upgrading the capability of an existing connection point to the extent that the network user is required to make a financial contribution in accordance with clause 80 of the NT Network Access Code; or
 - iii. requiring the abolishment of an above standard or non-standard connection service, to the extent that the costs of abolishment of that service exceed the costs of abolishment of a standard connection service; or
 - iv. that are ancillary connection services provided with respect to an above standard or non-standard connection service.

- c. Any metering services provided at the request of a network user with higher (or lower, where permissible) standards than are required under applicable legislation, codes or other regulatory instruments, including unscheduled meter reading, meter testing and rectification of damage not the fault of the network service provider.
- d. Provision, construction and maintenance of streetlighting assets not owned by the network service provider.
- e. Other fee-based services:
 - i. Street light services
 - ii. Non-standard data services
 - iii. Disconnection and reconnection
 - iv. Fault response – not PWC Networks equipment
 - v. Installation of minor equipment to the network
 - vi. Travel costs
- f. Other quoted services:
 - i. Asset relocation, temporary disconnection and reconnection and temporary line insulation services
 - ii. Emergency recoverable works
 - iii. Services associated with temporary supply
 - iv. Illegal connections and damage to network equipment
 - v. Provision of non-standard street light assets
 - vi. Wasted attendance
 - vii. Asset location and identification services
 - viii. High load transport escorts
 - ix. Covering of low voltage mains

2. Excluded network access services which do not lend themselves to being regulated by the price control mechanism for regulated network access services and, in the opinion of the Commission, are subject to effective competition (equivalent to AER classification of unregulated services)

- a. Equipment rental for non-network purposes
- b. Investigation and testing services
- c. Contestable networks engineering consulting services

APPENDIX B

Use of unders and overs account

To demonstrate compliance with the network price determination over the forthcoming regulatory control period, the Commission requires PWC Networks to maintain an unders and overs account. PWC Networks must provide information on this account to the Commission as part of their annual pricing proposals under clause 78(1) of the NT Network Access Code.

PWC Networks must provide the amounts for the following entries in its unders and overs account for the most recently completed regulatory year ($t-2$), the current regulatory year ($t-1$) and the next regulatory year (t):

1. opening balance for year $t-2$, year $t-1$ and year t ;
2. an interest charge for one year on the opening balance in year $t-2$ and an interest charge for one year on the opening balance in year $t-1$. These adjustments are to be calculated using the approved nominal weighted average cost of capital (WACC). No such interest charge applies to the opening balance for year t ;
3. the amount of revenue recovered from network charges in respect of that year, less any under/over adjustments approved by the regulator for year $t-2$ and year $t-1$, less the MAR for the year in question;
4. an interest charge for one year related to the net amounts in item 3 for year $t-2$ and an interest charge for one year for year $t-1$. These adjustments are to be calculated using the approved nominal WACC. No such charge applies to the net amount in item 2 for year t ;
5. the total of items 1–4 to derive the closing balance for each year.

PWC Networks must provide details of calculations in the format set out in Table B.1.

Amounts provided for the most recently completed regulatory year ($t-2$) must be audited.

Amounts for the current regulatory year ($t-1$) and the next regulatory year (t) will be regarded as forecasts.

Table B.1: Calculation of unders and overs account

Element	Year $t-2$ Actual	Year $t-1$ Expected	Year t Forecast
Opening balance	Opening $_{t-2}$	Opening $_{t-1}$ = Closing $_{t-2}$	Opening $_t$ = Closing $_{t-1}$
Interest on opening balance	Opening $_{t-2} \times W$	Opening $_{t-1} \times W$	na
Under/over recovery for the year	ΔR_{t-2}	ΔR_{t-1}	ΔR_t
Interest on under/over recovery for the year	$\Delta R_{t-2} \times V$	$\Delta R_{t-1} \times V$	na

Closing balance	$\text{Closing}_{t-2} =$ $\text{Opening}_{t-2} \times W$ $+ \Delta R_{t-2} \times V$	$\text{Closing}_{t-1} =$ $\text{Opening}_{t-1} \times W$ $+ \Delta R_{t-1} \times V$	$\text{Closing}_t =$ Opening_t $+ \Delta R_t$
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where

Opening_t is the Unders and Overs opening balance in year t

ΔR_t is the difference between the allowable revenue and revenue recovered in year t

W is the nominal WACC determined by the Commission for the regulatory control period

V is the WACC applicable to a half year [$V = \sqrt{(W + 1)} - 1$]

Closing_t is the Unders and Overs closing balance in year t

In proposing variations to the amount and structure of standard network access charges, PWC Networks are to achieve an expected zero balance on its unders and overs accounts at the end of each regulatory year in the forthcoming regulatory control period, unless PWC Networks can demonstrate for a given year that such an adjustment exceeds the agreed tolerance limits set out in Chapter 5 of this draft decision. In such circumstances, the balance at the end of the regulatory control period will reflect the amount by which the adjustment would exceed the applicable tolerance limit (that is, the amount by which the under/over adjustment would exceed 2 per cent of PWC Networks revenues).

The proposed prices for year t will be based on the sum of the MAR for year t plus any under/over recovery for year t , up to the tolerance level of PWC Networks' revenues specified by the Commission in this draft decision.

APPENDIX C

Annual reporting requirements

Subject to legal advice confirming the authority of the Commission, the Commission will consider in its Final Determination the appropriate annual reporting requirements for the forthcoming regulatory control period, using similar requirements to those applied by the AER.

The objective of annual reporting is for PWC Networks to provide the Commission with information it reasonably requires to carry out its regulatory functions. The Commission will use the information to assist in the assessment of future regulatory proposals and make future determinations. Collecting such information annually will enable the Commission to assess PWC Networks' performance during the course of the forthcoming regulatory control period.

APPENDIX D

Submissions

The Commission received submissions on PWC Networks' regulatory proposal from the following interested parties:

- Northern Territory Major Energy Users Group
- Northern Territory Council of Social Service Inc.
- Dr Francis Clark
- The Hon David Tollner MLA, Treasurer
- Property Council of Australia – Northern Territory Division