



ADVANCED METERING INFRASTRUCTURE

**AMENDED SUBMITTED BUDGET AND
CHARGES APPLICATION 2012-15**

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26 August 2011

POWERCOR AUSTRALIA'S
AMENDED SUBMITTED BUDGET & CHARGES APPLICATION 2012-15

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Attachments

1. Explanation of CitiPower and Powercor Australia's Meter and Communications Non-Contract Capital Expenditure Forecasts for 2012-15
2. Background context to Amended Application
3. *AMI Cost Review* prepared by Deloitte [forthcoming]
4. Deloitte's Model [forthcoming]
5. Letter from PricewaterhouseCoopers to Mr Brent Cleeve dated 16 August 2011
6. Meter Maintenance Model
7. Communications operations model
8. Customer Services Model
9. Meter and Communications Capital Expenditure Model
10. Budget Templates
11. Charges Templates
12. *Market Risk Premium, An update prepared in response to the draft determination by the AER on the Victorian Advanced Metering Infrastructure Review: 2012 – 15 budget and charges applications* prepared by Value Adviser Associates, August 2011 [forthcoming]
13. *Implied Market Risk Premium, response to the draft determination by the AER on the Victorian Advanced Metering Infrastructure Review: 2012 – 15 budget and charges applications* prepared by Capital Research, August 2011 [forthcoming]
14. *The Market Risk Premium, A report for CitiPower, Jemena Electricity Networks, Powercor, SP AusNet and United Energy Distribution* prepared by NERA Economic Consulting, August 2011 [forthcoming]
15. *AMI Program Field Force Service Provider Contract Renegotiation Audit Report* prepared by Portland
16. Report prepared by NERA for EnergyAustralia entitled *Economic Interpretation of clauses 6.5.6 and 6.5.7 of the National Electricity Rules*
17. Meter Asset Management Plan

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Abbreviations

Term	Description
AEMO	Australian Energy Market Operator
AER	Australian Energy Regulator
AMI	Advanced Metering Infrastructure
AMI Cost Recovery Order	Order in Council S200 made on 28 August 2007 under Sections 15A and 46D of the Electricity Industry Act 2000 (Vic), as amended by the Order in Council S314 made on 25 November 2008 pursuant to Sections 15A and 46D of the Electricity Industry Act 2000 (Vic)
AMI Specifications Order	Order in Council S286 made on 12 November 2007 under Sections 15A and 46D of the Electricity Industry Act 2000 (Vic)
AP	Access point
Approved Budget	takes its defined meaning as set out in Clause 2.1 of the AMI Cost Recovery Order.
ATO	Australian Taxation Office
B2B	Business to Business
BAU	Business As Usual
BBS	Bilfinger Berger Services (Australia) Pty Ltd
Budget Application	This document, its appendices and attachments, which comprise Powercor Australia's Budget Application for regulatory period 2012 to 2015.
CATS	Consumer Administration and Transfer Solution
CHED Services	CHED Services Pty Ltd
CitiPower	CitiPower Pty
Conneq	Conneq Infrastructure Services (Australia) Pty Limited
CT	current transformer
Deloitte	Deloitte Touche Tohamtsu
Distributor	Local Network Service Provider as defined in the Rules
DNSP	Distribution Network Service Provider
EDPR	Electricity Distribution Price Review
ESC	Essential Services Commission
EWOV	Energy & Water Ombudsman (Victoria)
Final Determination	AER, Final Determination for Victorian Advanced Metering Infrastructure Review, 2009–11 AMI Budget and Charges Applications, October 2009.
FTE	Full Time Equivalents
GFC	Global financial crisis
HAN	Home Area Network
IEE	Itron Enterprise Edition
Initial Budget Application	Powercor Australia's Budget Application for regulatory period 2009 to 2011
Initial Charges Application	Charges Application for 2012-15 to be submitted on 28 February 2011

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Term	Description
	pursuant to the Revised OIC
IMF	International Monetary Fund
JEN	Jemena Electricity Networks (Vic) Ltd
L&G	Landis + Gyr Pty Ltd
Metering Agreement	Powercor Australia 2008-2013 Metering & Field Services Agreement
Metrology Procedure	National Electricity Market Metrology Procedure
MRIM	manually read interval meter
MTS	Market Transaction System
MWh	Megawatt hour
NERA	National Economic Research Associates
NIC	Network Interface Card
NIEIR	National Institute of Economics and Industry Research
NMI	National Meter Identifiers
NMS	Network Management System
NOC	Network Operations Centre
Oakley Greenwood Study	Oakley, Greenwood, Benefits and Costs of the Victorian AMI Program, August 2010
OECD	Organisation for Economic Co-operation and Development
OIC	Order in Council
PMO	Project Management Office
PNS	Powercor Network Services Pty Ltd
Powercor Australia	Powercor Australia Limited
PRI	PRI Australasia Pty Ltd
PSTN	Public Switched Telephone Network
PwC	PricewaterhouseCoopers
RAB	Regulated Asset Base
RBA	Reserve Bank of Australia
Regulated Services	takes its defined meaning as set out in Clause 2.1 of the AMI Cost Recovery Order.
Revised OIC	Order in Council S314 made on 25 November 2008 pursuant to Sections 15A and 46D of the Electricity Industry Act 2000 (Vic)
RFP	Request for Proposal
Rules	National Electricity Rules
Scope Document	Notice issued pursuant to clause 14B.1 of the AMI Cost Recovery Order Victorian Government Gazette issued dated 22 January 2009
SORI	Statement of Regulatory Intent
SSI	Service Stream Infrastructure
SSN	Silver Spring Networks Inc

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Term	Description
TB	Terabyte
ToU	Time of Use
Tribunal	Australian Competition Tribunal
UED	United Energy Distribution Pty Ltd
USB	utility service bus
UXC	UXC Limited
Victorian EDPR	Victorian Electricity Distribution Determination 2011-2015
Victorian EDPR 2016-2020	Victorian Electricity Distribution Determination 2016-2020
WACC	Weighted Average Cost of Capital

1. Executive summary

This *Amended Submitted Budget and Charges Application 2012-15* (**Amended Application**) has been prepared by Powercor Australia Limited (**Powercor Australia**) for submission to the Australian Energy Regulator (**AER**) in accordance with the AMI Cost Recovery Order.

AMI is a relatively immature but dynamic technology and Victoria's Advanced Metering Infrastructure Rollout (**AMI**) program is at the cutting edge of development internationally. There is no ready template for how AMI should be rolled out nor is there an accepted benchmark of prudent AMI delivery costs.

Powercor Australia has developed a wealth of experience and historical information since it began its AMI program in 2009, which has informed both its Initial Budget Application and this Amended Application. This historical expenditure information has the highest probative value, given that it represents real, practical experience of the costs incurred in undertaking the AMI program. This historical expenditure information has been subject to review by an independent auditor, which owes a duty of care to the AER.

Powercor Australia considers that the AER did not have appropriate regard for this historical expenditure information in preparing its Draft Determination. Instead, it favoured theoretical assessments of prudent costs that were prepared by the AER's consultant, Impaq Consulting (**Impaq**). This approach effectively ignored Powercor Australia's vast practical experience of rolling out an AMI program.

It is worth noting that the Victorian Auditor-General criticised and highlighted significant inadequacies in the advice and recommendations provided to the Victorian Government on the AMI programme¹. In light of the Auditor-General's concerns, Powercor Australia believes that it is incumbent on the AER to address the kind of criticisms made by the Auditor-General insofar as these relate to a tendency to ignore or under-estimate AMI project risks and costs, and to provide conclusions without substantiation.

Powercor Australia has a further concern that the AER's reductions to its proposed expenditure program may reflect a lack of understanding of the functions and activities that comprise Regulated Services. Accordingly, this Amended Application seeks to clarify Powercor Australia's proposed expenditure program by reference to supporting documents and detailed models. These models have been structured for ease of use and are fully documented and referenced, and link to the AER's Budget Templates.

¹ Victorian Auditor-General, *Towards a 'smart grid' –the roll-out of Advanced Metering Infrastructure*, November 2009, page viii. *'There have been significant inadequacies in the advice and recommendations provided to government on the roll-out of the AMI project. The advice and supporting analysis lacked depth and presented an incomplete picture of the AMI project in relation to economic merits, consumer impact and project risks'*.

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Powercor Australia urges the AER to engage fully on all of this information in assessing this Amended Application.

Many of the expenditure reductions that the AER made in its Draft Determination were based on its assessment that Powercor Australia's expenditure proposals did not accord with the '*commercial standard*'. In most cases, the AER instead adopted Impaq's cost assessments. The AER's assessment of the '*commercial standard*' is not consistent with the requirements of the AMI Cost Recovery Order. This is because Impaq's cost assessments that the AER relied on are best described as estimates of the expenditure it considers appropriate or reasonable. The Impaq report does not provide an expert opinion on:

- The question raised for the AER's consideration by the statutory test of prudent expenditure (namely whether incurring the proposed expenditure involved a substantial departure from the standard of prudence that would ordinarily and reasonably be exercised by a business engaged in commerce in the circumstances); or
- The ancillary question of the '*commercial standard*' referred to in clause 5C.3(b)(iv) of the AMI Cost Recovery Order that is to be applied in assessing proposed expenditure (namely the standard of prudence that would ordinarily and reasonably be exercised by a business engaged in commerce in the circumstances).

In applying Impaq's cost assessments as the '*commercial standard*', the AER therefore either misconstrues the statutory test or implicitly assumes that Impaq's assessments represent the standard of prudence that would ordinarily and reasonably be exercised by a business engaged in commerce in the circumstances. The AER does not consider whether, in fact, Impaq's assessments do so or provide any basis for a conclusion that those assessments are indicative of this standard of prudence. Having regard to the character of Impaq's cost assessments, the AER's implicit assumption is incorrect.

Powercor Australia also notes a lack of consistency in the AER's approach to this AMI regulatory decision versus that for the 2009-11 period. Powercor Australia considers that the AER's decision making process, its methodologies and approach adopted in the Draft Determination a significant departure from the approach to its Final Determination for the 2009-11 period for Powercor Australia's Regulated Services. If the AER's cuts are maintained, they would potentially compromise Powercor Australia's ability to complete the AMI program within the timeframes that have been specified by the Victorian Government.

As foreshadowed in its Initial Budget Application, Powercor Australia has updated its contract expenditure forecasts in this Amended Application with actual contract rates that have been re-negotiated with field force service providers associated with meter and communications installation. These re-negotiated contract expenditure forecasts draw on Powercor Australia's continually evolving understanding of its operating environment and have reduced the overall cost of the program compared to what would have been the case had the original contract arrangements been maintained.

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In response to the Draft Determination, Powercor Australia has sought independent validation of its expenditure proposal from industry experts, Deloitte Touche Tohmatsu (**Deloitte**), in relation to IT capital expenditure, meter data services, communications operations and the meter data services component of IT operating expenditure. Deloitte's report entitled *CitiPower Pty Powercor Australia Ltd – AMI Cost Review (Deloitte's report)* and model are provided to the AER as attachments to this Amended Application.

Powercor Australia considers that this Amended Application, and the accompanying documents and models, provides more than sufficient detail, at a highly disaggregated level, to justify the expenditure being sought in accordance with the AMI Cost Recovery Order.

Table 1 and Table 2 detail Powercor Australia's revised capital and operating expenditure forecasts for 2012-15 for its Regulated Services as well as the forecasts in its Initial Budget Application and the AER's Draft Determination.

	2012	2013	2014	2015	Total
Powercor Australia Initial Budget Application	116,276	81,652	16,210	13,472	227,609
AER Draft Determination	80,576	52,503	6,699	6,447	146,225
Powercor Australia Amended Application	117,541	79,828	16,628	13,199	227,195

Table 1 – Comparison of Powercor Australia's capital expenditure (\$'000s, 2011 Real)

	2012	2013	2014	2015	Total
Powercor Australia Initial Budget Application	27,877	28,241	27,454	26,435	110,006
AER Draft Determination	12,232	13,257	15,821	15,490	56,800
Powercor Australia Amended Application	24,882	23,393	21,854	21,673	91,802

Table 2 – Comparison of Powercor Australia's operating expenditure (\$'000s, 2011 Real)

Powercor Australia has reflected the forward foreign exchange rates that are currently available in the foreign exchange market into its expenditure forecasts. Given the current market volatility, and the significance of the foreign exchange rate assumptions to its overall expenditure forecasts, Powercor Australia seeks the AER's agreement for it to submit revised exchange rate assumptions in the two weeks before the Final Determination.

2. Introduction

2.1 Background

Following a cost-benefit study, the Victorian Government mandated that Advanced Metering Infrastructure (**AMI**) be rolled out to all Victorian customers consuming less than 160MWh of electricity per annum between 2009 and 2013. Each Victorian electricity Distribution Network Service Provider (**DNSP**) is responsible for the rollout to customers connected to its network. This means that Powercor Australia, as a holder of the electricity distribution licence for regional and rural centres in central and western Victoria, and Melbourne's outer western suburbs, will be required to install more than 800,000 new AMI meters over a four year period.

AMI meters will replace existing type 5 meters (MRIMs) and type 6 meters (manually read accumulation meters).

An AMI meter can electronically record and store electricity usage data (at intervals of 30 minutes), remotely report usage, remotely be turned on or off (de-energisation and re-energisation) and provide an interface to a customer's Home Area Network (**HAN**), if a customer has one.

Attachment 2 provides further details about the challenges that the AMI program faces.

2.2 General legislative and regulatory framework

The legislative basis for the AMI rollout was established in August 2006 through amendments to the *Electricity Industry Act 2000*. These amendments also provided powers for the Victorian Government to create a number of Orders in Council.

The regulatory arrangements relating to the rollout are set out in the Order in Council (**OIC**) made on 28 August 2007 under sections 15A and 46D of the *Electricity Industry Act 2000* (**AMI Cost Recovery Order**) and amended by the OIC made on 25 November 2008.

The AMI Cost Recovery Order sets out the regulator's role and is the primary regulatory instrument for the regulator determining the prudence of AMI related expenditure.

2.3 Powercor Australia's initial budget application

Powercor Australia submitted its *Advanced Metering Infrastructure – Budget and Charges Application 2012-15* (**Initial Budget Application**) to the **AER** on 28 February 2011.

The Initial Budget Application included a Budget Application and a Charges Application:

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- The Budget Application was prepared in accordance with clauses 4, 5A.1(c)(i), 5B and 5C of the AMI Cost Recovery Order and sought approval for an expenditure budget for each year of the period 2012-15 for Regulated Services; and
- The Charges Application was prepared in accordance with clauses 4, 5A.1(c)(ii), and 5E of the AMI Cost Recovery Order and sought approval for setting the initial charges for each of the years commencing 1 January 2012, 2013, 2014 and 2015.

Following its submission on 28 February 2011, Powercor Australia provided further information to the AER in response to questions that it raised during the course of its assessment of the Initial Budget Application.

2.4 AER's Draft Determination

The AER issued its *Draft Determination - Victorian Advanced Metering Infrastructure Review 2012-15 budget and charges applications (Draft Determination)* on 28 July 2011.

The AER relied on advice from Impaq Consulting (**Impaq**) in making its Draft Determination, including a report entitled *Review of DNSPs AMI Budget Submissions for 2012 to 2015 (Impaq Report)*, dated 28 July 2011. The AER's Draft Determination made significant reductions in Powercor Australia's expenditure budget from what the Business proposed in its Initial Budget Application.

It is widely accepted that the AMI rollout program is a major project involving new technology and change processes that will have significant implications for Victorian distributors, retailers and customers. In this environment, advisors such as Impaq face a difficult task, especially in relation to estimating the AMI program's future costs and benefits.

Advisors specialising in this area are exposed to a greater risk of criticism compared to advisors operating in more certain, less technology-driven environments. As an advisor, a standard approach to managing risk is to highlight and test assumptions and to include appropriate caveats in any advice.

Notwithstanding the inherent difficulties in the cost benefit analysis undertaken by the Government advisors (Charles River Associates (**CRA**) and Impaq), the Victorian Auditor-General has robustly criticised their approach and conclusions. In fact, the Auditor-General's summary conclusion to his report included the following comment:

There have been significant inadequacies in the advice and recommendations provided to government on the roll-out of the AMI project. The advice and supporting analysis lacked depth and presented an incomplete picture of the AMI project in relation to economic merits, consumer impact and project risks.²

² Victorian Auditor-General, *Towards a 'smart grid' –the roll-out of Advanced Metering Infrastructure*, November 2009, page viii

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In light of the Auditor-General's concerns, Powercor Australia believes that it is incumbent on the AER to address the kind of criticisms made by the Auditor-General insofar as these relate to a tendency to ignore or under-estimate AMI project risks and costs, and to provide conclusions without substantiation.

A further observation is that Impaq may not approach the question of the prudence of DNSPs' AMI budget costs with the necessary degree of disinterest. In particular, it is conceivable that Impaq's analysis and conclusions may be influenced by its previous assignments and recommendations.

2.5 Purpose of this Amended Application

Clause 5C.5(b) of the AMI Cost Recovery Order provides that, if the AER rejects its Submitted Budget, Powercor Australia must make an application for approval of an amended Submitted Budget.

The purpose of this Amended Budget Application is to:

- Seek the AER's approval of an amended Submitted Budget for each year for the period 2012-15 for Regulated Services; and
- Give effect to, and be consistent with, clauses 4, 5A.2(b), 5B and 5C of the AMI Cost Recovery Order.

The AMI Cost Recovery Order defines a '*Submitted Budget*' as:

-the Total Opex and Capex for each year of:
 - (a) the initial AMI budget period; or
 - (b) the subsequent AMI budget period,set out in a budget application under clause 5B.

This Amended Budget Application therefore relates to the total operating and maintenance expenditure and total capital expenditure for Regulated Services only.

This Amended Application also includes an Amended Charges Application, the purpose of which is to:

- Seek the AER's approval for the setting of initial charges for each of the years commencing 1 January 2012, 2013, 2014 and 2015. AMI charges are designed to recover actual expenditure that is incurred in response to the Victorian Government's decision to mandate the rollout of AMI to all customers consuming less than 160 MWh per annum; and
- Give effect to, and be consistent with, clauses 4, 5A.1(c)(ii), and 5E of the AMI Cost Recovery Order.

2.6 Elements of the Amended Application

This document and its appendices and attachments together comprise Powercor Australia's Amended Application. This Amended Application contains:

- Powercor Australia's Amended Budget Application and Amended Charges Application;
- Powercor Australia's submission in response to the AER's Draft Determination; and
- Powercor Australia's completed Budget Templates and Charges Model for 2012-15.

This Amended Application has been prepared in response to the matters raised in the AER's Draft Determination.

In this Amended Application, Powercor Australia has made revisions to its Initial Budget Application to incorporate the substance of any changes required to address matters raised by the Draft Determination.

2.7 Powercor Australia's models

A number of models have been attached to this Amended Application in order to aid the AER's understanding. These models have been structured for ease of use and are fully documented and referenced and link to the AER's Budget Template.

These models are an integral part of this Amended Application. The AER will only gain a full understanding of this Amended Application by reading it in conjunction with these models.

Powercor Australia's models in relation to its meter and communications capital expenditure are illustrated in Figure 1.

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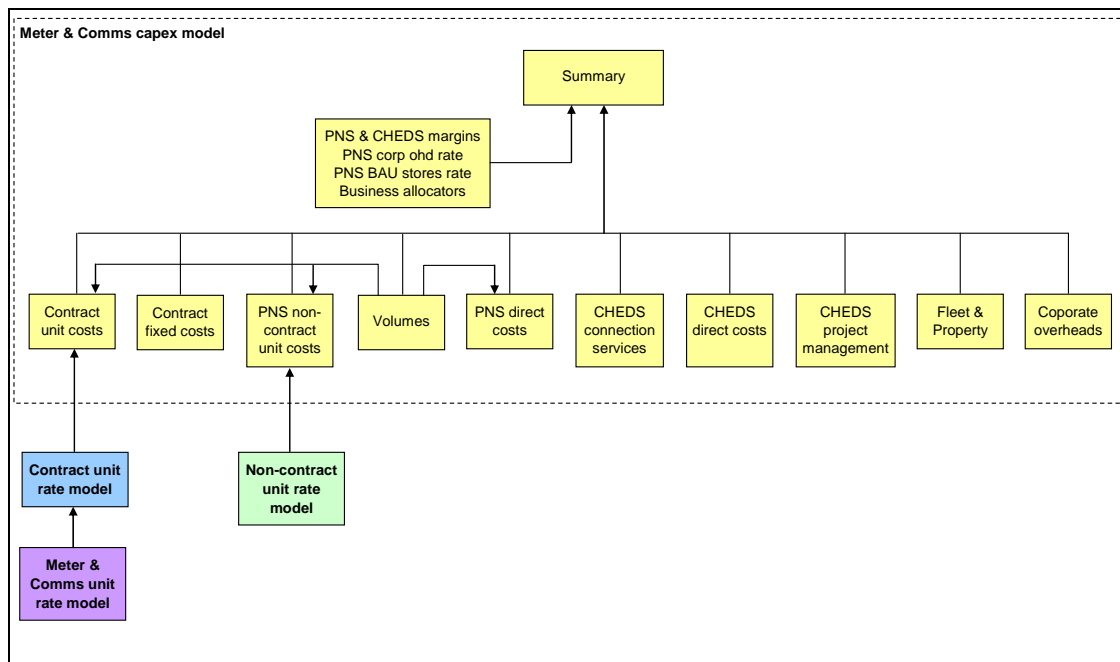


Figure 1 – Meter and communications capital expenditure model structure

In addition to the meter and communication models, Powercor Australia has also attached:

- A meter maintenance model;
- A communications operations model; and
- A customer service model.

2.8 Outline of this Amended Application

The remainder of this Amended Application is structured as follows:

- Section 3 examines various matters relevant to the statutory test of prudent expenditure;
- Section 4 addresses the categories of expenditure where the AER did not approve the proposals in Powercor Australia's Initial Budget Application on the basis of the scope test and where the AER substituted its own revised forecasts;
- Section 5 addresses the categories of expenditure that the AER assessed against the competitive tender test;
- Section 6 addresses the categories of expenditure where the AER did not approve the proposals in Powercor Australia's Initial Budget Application on the basis of the expenditure incurred test and where the AER substituted its own revised forecasts;

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- Section 7 addresses the categories of capital expenditure where the AER did not approve the proposals in Powercor Australia's Initial Budget Application on the basis that it did not meet the commercial standard and where the AER substituted its own revised forecasts;
- Section 8 addresses the categories of operating expenditure where the AER did not approve the proposals in Powercor Australia's Initial Budget Application on the basis that it did not meet the commercial standard and where the AER substituted its own revised forecasts;
- Section 9 sets out the calculation of Powercor Australia's annual revenue requirement based on the Amended Budget Application. Required revenue has been calculated in accordance with the building blocks approach as prescribed by clause 4.1(b) of the AMI Cost Recovery Order. The building block components include a return on capital, depreciation, operating and maintenance expenditure and taxation; and
- Section 10 provides an overview of Powercor Australia's Regulated Services' charges for the period 2012-15.

3. Statutory test of prudent expenditure

This section examines three matters relevant to the statutory test of prudent expenditure:

- The interpretation and application of the statutory test;
- Comparisons of historical expenditure and the Draft Determination for the statutory test of prudent expenditure; and
- Powercor Australia's related party margins.

3.1 Interpretation and application of the statutory test of prudent expenditure

Unless the AER finds that expenditure included in a Submitted Budget is for activities outside scope or is not prudent, the AER must approve the Submitted Budget. In this section, Powercor Australia sets out its views on the proper construction and application of the statutory test of prudent expenditure established by clauses 5C.2 and 5C.3(b)(iv) of the AMI Cost Recovery Order.

3.1.1 Regulatory model under AMI Cost Recovery Order - the starting point for construction

It is a cardinal rule of statutory interpretation that the words of a statutory instrument must be read in their context.³ The starting point for the construction of the statutory test for approval of expenditure in a Submitted Budget is, therefore, to read the AMI Cost Recovery Order in its entirety.

The Regulatory Principles in clause 4.1 of the AMI Cost Recovery Order expressly provide that *'[t]here shall be no incentive based control mechanism applied'*. The Regulatory Principles instead envisage the pass through of the actual expenditure incurred by a DNSP in providing Regulated Services. The Note accompanying those Principles expressly states that the regulatory model established by the AMI Cost Recovery Order is one of cost pass through. The term *'actual expenditure'* is not defined in the AMI Cost Recovery Order and, thus, takes its ordinary and natural meaning, being that which is in fact expended by the DNSP, where it appears in the Regulatory Principles and accompanying Note.

This can be contrasted with the regime for the economic regulation of distribution established by the Law and Rules. Whereas the regulatory regime under the Law and the Rules is premised on the creation of incentives for economic efficiency, consistent with the outcomes in a competitive market, the expressly stated intent of the regime established by the AMI Cost Recovery Order is *not* to create efficiency incentives or mirror outcomes in a competitive market but to provide for the pass through of a DNSP's actual expenditure.

³ Pearce and Geddes, Sixth Edition, 2006, sections 4.2 and 4.20 on pp114-116 and 132-133.

Any provisions of the AMI Cost Recovery Order purporting to limit the recovery by a DNSP of its actual expenditure, including in particular clauses 5C.2 and 5C.3, must be read and construed in this context.

It follows that it would be erroneous to construe and apply the term '*prudent*', and the phrase '*the commercial standard that a reasonable business would exercise in the circumstances*', in such a manner as to necessitate an efficiency assessment of the kind the AER must undertake in respect of operating expenditure and capital expenditure in making a distribution determination under Chapter 6 of the National Electricity Rules (**Rules**).

3.1.2 '*Prudent*' expenditure

The term '*prudent*' is not defined in the AMI Cost Recovery Order.

Words or phrases in a statutory instrument concerned with promoting competition policy objectives, such as the economic regulation of essential infrastructure, may be given their economic meaning, rather than their ordinary and natural meaning, where they are '*in common use in that field of economics which is concerned with competition policy, or more particularly with the regulation of essential infrastructure*'.⁴

However, Powercor Australia considers that the term '*prudent*' where it appears in the AMI Cost Recovery Order takes its ordinary and natural meaning and not any economic meaning. This is because the term '*prudent*' does not appear to be in common use in economics, at least not in the field of economics concerned with competition policy and, more specifically, the economic regulation of network industries.

It is noteworthy that NERA, in its report for Energy Australia *Economic Interpretation of clauses 6.5.6 and 6.5.7 of the National Electricity Rules* dated 7 May 2008 (**NERA Report**) (at 11-12), construes the term '*prudent*' for the purposes of clauses 6.5.6(c) and 6.5.7(c) of the Rules predominantly by reference to dictionary definitions of the term. It does not make reference to any specialised usage of the term '*prudent*' in economics.

The dictionary defines the term '*prudent*' to mean:

1. wise, judicious, or wisely cautious in practical affairs, as a person; sagacious or judicious; discreet or circumspect. **2.** careful of one's own interests; provident, or careful in providing for the future. **3.** characterised by or proceeding from prudence, as conduct, action, etc. (Macquarie Dictionary, Fourth Edition, 2005, p1144)

1 Characterized by or proceeding from care in following the most politic and profitable course; having or showing sound judgement in practical affairs; circumspect, sensible.

2 Wise, discerning, sapient. (Shorter Oxford English Dictionary, Fifth edition, 2002, p2385).

⁴ *Re Dr Ken Michael AM; Ex parte Epic Energy (WA) Nominees Pty Ltd* (2002) 25 WAR 511 at 543-544.

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The only decision of the Australian Competition Tribunal (**Tribunal**) considering the provisions of the AMI Cost Recovery Order is the Tribunal decision of *Application by United Energy Distribution Pty Ltd* [2009] ACompT 10, in relation to a review of the AER's 2009-11 budget and 2010 and 2011 initial charges determination. That decision was concerned with the AER's decision to reject United Energy Distribution Pty Ltd (**UED**) and Jemena Electricity Networks (Vic) Ltd's (JEN's) Submitted Budgets on the basis that their forecast related party margins were for activities outside scope and to therefore determine Approved Budgets that varied from the Submitted Budgets in that they excluded expenditure on related party margins. Accordingly, while the Tribunal commented (at [55]) that '*it may be that the profit margin payable is not prudent*', it did not discuss the meaning of the term '*prudent*' or the application of the prudence test.

Care is required in considering those Tribunal decisions that discuss the meaning of '*prudence*' in the context of clauses 6.5.6(c) and 6.5.7(c) of the Rules, as that discussion generally considers the collective or combined meaning and operation of the terms '*efficiency*' and '*prudence*'. It may, thus, be difficult to obtain any guidance from discussion of that kind on the meaning of the term '*prudent*' where used in isolation, as in the AMI Cost Recovery Order.

The most extensive consideration of the meaning of the term '*prudence*' occurs in *Application by Energy Australia and Others* [2009] ACompT 8. The Tribunal concluded (at [142]) that:

The approach to the cl 6.5.6(c) concepts of '*efficient*' and '*prudent*' adopted by Wilson Cook [the AER's expert] in Volume 1 of its first report is non-controversial.

The observations of Wilson Cook regarding the concepts of '*efficient*' and '*prudent*' to which the Tribunal referred were extracted in the Tribunal's decision (at [141]). This discussion of the concepts of '*efficiency*' and '*prudence*', with which the Tribunal apparently agreed, is of assistance in that it separately considers the meaning of the terms '*efficiency*' and '*prudence*'. In so doing, it adopts a construction of '*prudence*' that is consistent with the dictionary definitions of the term and distinguishes the concept of '*prudence*' from that of '*efficiency*'. In Wilson Cook's view, there is a tension between the concepts of '*prudence*' and '*efficiency*' and, thus, a balance between the two is required.

In *Application by Energy Australia and Others*, however, the Tribunal also further observed (at [142]) that '*Wilson Cook's approach to prudent and efficient is consistent with the approach taken by [Energy Australia's] own economic consultant when advising it on its preparation of its June 2008 regulatory proposal*', citing in support an extract from the NERA Report.

In the extract, NERA expresses the view that a prudent DNSP is one which '*reflects a degree of risk-aversion*' and '*that a key aspect of prudence is the process followed by the DNSP*'. These views are broadly consistent with those of Wilson Cook.

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However, in the extract, NERA also suggests that '*an important dimension of the prudence of a process*' is the degree to which it is motivated by or reflects efficiency considerations and that a '*prudent process*' can be expected to result in a DNSP moving towards maximum cost efficiency, with the consequence that prudent expenditure is likely to also result in efficient expenditure over time. These views are not readily reconcilable with those of Wilson Cook.

NERA's views would appear to be premised on its conclusion that clauses 6.5.6(c) and 6.5.7(c) of the Rules, in particular its view that the terms '*prudent*' and '*efficient*' must be construed, for the purposes of those provisions, such that expenditure forecasts can be simultaneously both '*prudent*' and '*efficient*'.⁵ NERA observes (at 15):

In principle, a distinction could be drawn between the '*efficient costs*' required by the first criteria and '*the costs that a prudent operator [...] would require*', as set out in the second criteria, ... However, the structure of clauses 6.5.6(c) and 6.5.7(c) effectively rules this out for the purposes of the AER's assessment of the expenditure forecasts. If such a distinction were to be drawn (i.e., if the AER considered that the forecasts reflected the costs a prudent operator would require, but not the *efficient* costs) then the forecasts could not simultaneously satisfy the first two expenditure criteria.

A consideration of the views expressed by NERA in the extract in the context of the NERA Report as a whole provides further support for this view. The extract set out in *Application by Energy Australia and Others* is taken from section 4.3.6 of that Report, which section is headed '*Overall structure of sub-clause 6.5.6(c) and 6.5.7(c)*'. NERA expresses its detailed views on the meaning of '*prudent*' and '*prudent operator*' in the earlier section 4.3.3 (titled '*A prudent operator*') and these views are consistent with those expressed by Wilson Cook in the extract from that report set out in the Tribunal's decision.

In concluding that the views of Wilson Cook and NERA on '*prudency*' and '*efficiency*' were '*consistent*', the Tribunal does not recognise or comment on the divergence in their views or on NERA's construction of clause 6.5.6(c).

Powercor Australia considers that NERA's views that construe the term '*prudency*' in the context of clauses 6.5.6(c) and 6.5.7(c) of the Rules to include efficiency considerations have no applicability to the construction of the term '*prudent*' where it appears in the AMI Cost Recovery Order, unaccompanied by any requirement for expenditure to be '*efficient*'. In the absence of an efficiency requirement of the kind that appears in clauses 6.5.6(c) and 6.5.7(c) and in the context of a pass through rather than incentive based regulatory model, there is no basis for construing the term '*prudent*' to include efficiency considerations.

Consistent with Powercor Australia's views, others of the relevant Tribunal decisions appear to construe the term '*prudency*' (where separately considered to the term '*efficiency*') in a manner consistent with the Wilson Cook construction discussed by the Tribunal in *Application by Energy Australia and Others* (see, for example, *Re East*

⁵ While not relevant for present purposes, we observe that we do not agree with this aspect of NERA's construction of clause 6.5.6(c). That is, we do not share NERA's view that clause 6.5.6(c) requires that the AER be satisfied that expenditure simultaneously satisfy each of the operating expenditure criteria including in particular by being both simultaneously '*prudent*' and '*efficient*'.

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Australian Pipeline Limited [2004] ACompT 8; *Application by Epic Energy South Australia Pty Ltd* [2003] ACompT 5).

The only other Tribunal decision warranting explicit mention is that of *Application by Ergon Energy Corporation Limited (Non-system property capital expenditure) (No 6)* [2010] ACompT 12. In that decision (at [17]), in considering clause 6.5.7(c) of the Rules, the Tribunal accepted that *'there is no one correct answer to the question of what are the 'efficient', 'prudent' and 'realistic' costs of achieving a DNSP's capex objectives, since there is no single objective question'*. It observed that these terms *'are abstract concepts'* that *'call for evaluation of the particular situation'* and concluded that:

..what costs are prudently incurred requires the decision-maker to undertake a process of assessment by reference to relevant considerations, factors or criteria.

3.1.3 'Commercial standard that a reasonable business would exercise'

The only basis on which the AER may fail to approve a Submitted Budget is if the Budget is for activities outside scope or is not prudent. There is no other basis on which the AER may refuse to approve a Submitted Budget.

The *'commercial standard'* test does not provide the AER with a separate, stand-alone basis for the rejection of a Submitted Budget. Rather, clause 5C.3 operates to prescribe, and so limit, the circumstances in which the AER may find that expenditure is not prudent for the purposes of clause 5C.2. The only circumstance in which the AER may find that expenditure is not prudent is where:

- The expenditure is not a contract cost or the AER establishes that the contract was not let in accordance with a competitive tender process; and
- The AER establishes that it is more likely than not that the expenditure will not be incurred or incurring the expenditure involves a substantial departure from the commercial standard that a reasonable business would exercise in the circumstances.

Thus, the meaning of the phrase *'the commercial standard that a reasonable business would exercise in the circumstances'* and the inquiry into whether the incurring of expenditure would involve a substantial departure from that standard cannot be considered in isolation from the ultimate statutory test, which is whether the expenditure is prudent.

Further, the term *'standard'* refers to a benchmark or basis of comparison. This is evident from the dictionary definition of the word *'standard'*, which is:

'anything taken by general consent as a basis of comparison; an approved model' (Macquarie Dictionary, Fourth edition, 2005, p1374)

'A thing serving as a recognized example or principle to which others conform or should conform or by which the accuracy or quality of others is judged' (Shorter Oxford English Dictionary, Fifth edition, 2002, p3000).

For these reasons, Powercor Australia considers that the '*commercial standard*' referred to in the AMI Cost Recovery Order is a standard of prudence. The phrase '*the commercial standard that a reasonable business would exercise*' operates to further particularise the basis of comparison against which the prudence of '*incurring the expenditure*' is to be assessed. That basis of comparison is the standard of prudence that would reasonably and ordinarily be exercised by a hypothetical business engaged in commerce in the circumstances.

3.1.4 'In the circumstances'

Under clause 5C.3(b)(iv), the commercial standard that the AER is required to consider is that which a reasonable business would exercise '*in the circumstances*'. Clauses 5C.4 and 5I.8 define the AER's obligation to consider '*the circumstances*' in applying this commercial standard. The AER is required to take into account and give fundamental weight to:

- The circumstances of the DNSP;
- If the DNSP will not directly incur the expenditure, the circumstances of the person that will incur it; and
- If the DNSP will not directly manage the expenditure, the circumstances of the person that will manage it.

The circumstances must be assessed at the time a commitment was made to incur or manage (as the case may be) the expenditure.

A list of the circumstances that may be of relevance to the incurring of expenditure is set out in clause 5I.8. Consistent with the statutory test established by clauses 5C.2 and 5C.3, the matters listed in clause 5I.8 are directed to an inquiry into the prudence of the decision to incur expenditure at the time the commitment was made to incur the expenditure. The list is non-exhaustive. Thus, the AER must take into account and give fundamental weight, as an element of its decision, any and all circumstances of relevance to the prudence of the incurring of the expenditure in issue including, at a minimum, each of the circumstances listed in clause 5I.8.

3.1.5 'Substantial departure'

Finally, the AER must establish a '*substantial departure*' from the commercial standard of prudence that a reasonable business would exercise in the circumstances in order to establish that the expenditure is not prudent.

The dictionary definition of '*substantial*' is:

2. of ample or considerable amount, quantity, size etc. ...
8. of or relating to the essence of a thing; essential, material, or important. (Macquarie Dictionary, Fourth Edition, 2005, p1405)
3. Of ample or considerable amount or size; sizeable, fairly large.

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4. Having solid worth or value, of real significance; solid; weighty; important; worthwhile. (Shorter Oxford English Dictionary, Fifth edition, 2002, p3091).

In the context (i.e. of a regulatory model of pass through of actual expenditure), the word '*substantial*' should be construed as requiring a greater rather than lesser degree of departure from the requisite commercial standard.

3.1.6 Conclusions on construction and application of prudence test

Clause 5C.2 requires an inquiry as to whether '*the expenditure*' included in the Submitted Budget is prudent. Consistent with this, clause 5C.3(b)(iv) requires a consideration of whether '*incurring the expenditure*' involves a substantial departure from the requisite commercial standard. It follows that the required inquiry is one into the prudence of the act of incurring or decision to incur expenditure, not into the quantum of the expenditure per se. This can be contrasted with the costs of a prudent operator criterion in clauses 6.5.6(c) and 6.5.7(c) of the Rules, which applies to '*the total of the operating/capital expenditure for the regulatory control period*' [underlining emphasis added].

The dictionary definitions of the term '*prudent*' suggest that prudent expenditure is that which is mindfully incurred as a consequence of wise, cautious, sound, careful in providing for the future and provident decision-making. An assessment of the circumstances in which, considerations on the basis of which and the process by which, the decision to incur expenditure was made (e.g. the contract entered into) will be relevant to an inquiry into whether expenditure is prudently incurred.

Powercor Australia considers that an inquiry into the prudence of expenditure necessitates consideration of both:

- The process followed by the DNSP in developing its expenditure forecasts; and
- The principles adopted in deriving the forecasts.

Powercor Australia notes the following observations of NERA, in the NERA Report (at 12 and 13):

The definitions of prudence all have in common references to 'carefully considering consequences', 'carefully managing resources' and being 'careful to avoid undesired consequences.' These are all concepts that can be applied in assessing the *process* that the DNSP has followed in developing the expenditure forecasts. The costs that would be incurred by a prudent operator are likely to be those costs that are the outcome of a process that reflected these considerations. ...

...

The references to 'carefully considering consequences', 'carefully managing resources' and being 'careful to avoid undesired consequences' also have implications for the principles applied in developing expenditure forecasts, which ultimately affect the *level* of expenditure forecasts made by a prudent operator.

As clauses 5C.2 and 5C.3 are concerned with the prudence of '*incurring the expenditure*', the subject of the statutory test they establish is the decision whether to

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incur the expenditure, that is the process followed and principles applied, rather than to the quantum of that expenditure. As NERA observes, however, the level of the expenditure is a consequence of the principles applied in deciding whether to incur expenditure. As the quantum of the expenditure will be a product of, in particular, the principles applied by the DNSP in the decision-making process, the quantum of the expenditure may be a relevant consideration in assessing the prudence of expenditure under the AMI Cost Recovery Order. However, as it is the decision to incur the expenditure and not the quantum of expenditure, an inquiry into the quantum of expenditure without any consideration of the process followed and principles applied in determining on incurring the expenditure would not be consistent with the statutory test established by the Revised Order.

It follows from the above that the prudence inquiry requires a consideration of the circumstances and considerations surrounding the decision to incur the expenditure, including for example the decision to acquire from a particular service provider and the circumstances in which any contract (which the AER has established was not let in accordance with a competitive tender process) was negotiated.

Considerations of economy may be relevant. Expenditure would likely not be prudent, for example, where it is incurred on assets that are not used or useful. These considerations of economy do not, in Powercor Australia's view, encompass the economic concept of efficiency. Expenditure may be prudent without being efficient or consistent with that which would be incurred in a competitive market. Further, considerations of economy would not, of themselves, be determinative of whether expenditure is '*prudent*'.

Clause 5C.3(b)(iv) operates to particularise the basis of comparison against which the prudence of incurring the expenditure is to be assessed. The basis of comparison is the standard of prudence that would reasonably and ordinarily be exercised by a hypothetical business engaged in commerce in the circumstances. The circumstances referred to are those of the DNSP or other person who is to incur or manage the expenditure at the time the commitment was made to incur or manage (as the case may be) the expenditure including those listed in clause 5I.8 of the AMI Cost Recovery Order and any other circumstances of relevance to the statutory test.

Finally, it is '*incurring the expenditure*' that must involve a substantial departure from the requisite commercial standard and not the quantum of that expenditure. Thus, the level or amount of expenditure, while relevant, will not necessarily be determinative of whether any departure from that commercial standard is '*substantial*'. More relevant will be the extent to which the process engaged in for making, and the principles on which, the decision to incur the expenditure departs from that commercial standard. A substantial difference between the level or amount of the expenditure to be incurred and the level of expenditure that would be incurred in accordance with that commercial standard is just an indicator that the incurring of the expenditure, in particular the principles applied in deciding to incur the expenditure, may involve a substantial departure from the requisite commercial standard.

3.1.7 Additional observations on application of statutory test by AER

The AER bears the onus of establishing that the expenditure included in a Submitted Budget is not prudent, if it is to reject the Submitted Budget on this basis (clause 5C.2). It is for the AER to establish that incurring the expenditure involves a substantial departure from the commercial standard that a reasonable business would exercise in the circumstances (clause 5C.3(b)).

The AER must itself investigate whether the incurring of the expenditure is prudent or instead involves a substantial departure from the commercial standard of a reasonable business in the DNSP's circumstances, including in particular by considering the circumstances in which the relevant contract was entered into or the commitment to incur the expenditure made. Reliance by the AER on an estimate of expenditure by its consultant is no substitute for such an investigation.⁶ The AER cannot reject a Submitted Budget merely because it has a consultant's opinion; it must make its own evaluation of the matter.⁷

3.2 Comparisons of historical expenditure and the AER's allowances having regard for 'commercial standard' test

The AER's Draft Determination relied almost entirely on the advice of Impaq for the purposes of determining a 'commercial standard' within the meaning of clause 5C.3(b)(iv) of the AMI Cost Recovery Order. In relying on Impaq's 'desk top analysis', the AER has failed to consider what is ultimately the most compelling information available to it – the costs that the Victorian DNSPs have incurred in conducting the rollout to date.

The historical information provided by the Victorian DNSPs has the highest probative value given it represents real, practical experience of the costs incurred in undertaking the AMI program. This information has been subject to review of an independent auditor (in the case of Powercor Australia by Deloitte), which owes a duty of care to the AER.

Powercor Australia has undertaken an analysis of its historic costs incurred over the period 2009-10 compared to the expenditure benchmarks approved in the Draft Determination. For completeness, the analysis has included Powercor Australia's expected incurred costs for 2011 – while these are predominantly forecasts, they provide a robust indication of future cost trends.

There is a wide deviation between Powercor Australia's historic capital expenditure and the benchmarks allowed in the AER's Draft Determination. The AER's allowance provided for 2012 is 22 per cent below Powercor Australia's actual costs incurred in 2010 and its 2013 allowance is 49 per cent below the 2010 actual costs. This is despite meter rollout volumes in 2012 being 49 per cent higher than 2010 and rollout volumes

⁶ *Application by Ergon Energy Corporation Limited (Labour Cost Escalators) (No 5)* [2010] ACompT 11 at [57] and [58].

⁷ *Application by Energy Australia and Others* [2009] ACompT 8 at [190]

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in 2013 being similar to 2010. When compared to 2011, the reductions are 25 and 51 per cent respectively for 2012 and 2013.

These differences are illustrated in Figure 2.

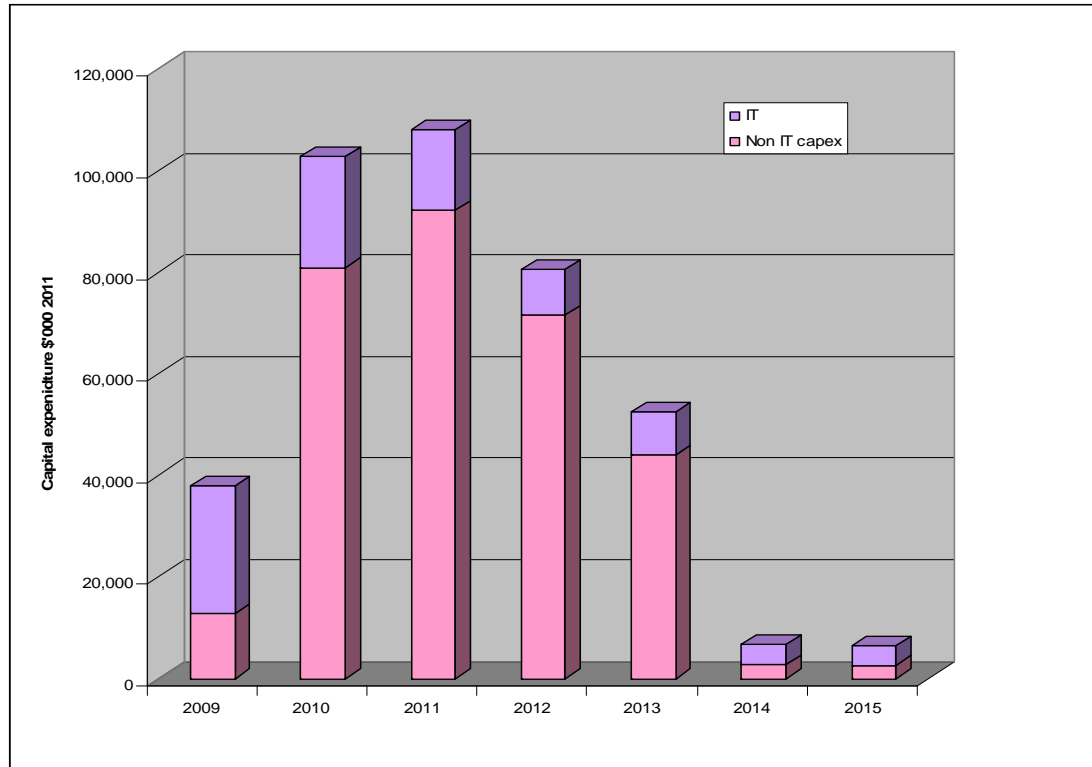


Figure 2 - Actual capital expenditure versus allowed capital expenditure (\$'000 2011)⁸

Most of Powercor Australia's IT systems were developed and implemented over the period 2009-10. To remove any potential anomaly, Powercor Australia has compared its actual non-IT related capital expenditure with that allowed by the AER in its Draft Determination. Excluding IT capital expenditure, the Draft Determination represents a 12 per cent reduction in actual incurred capital expenditure in 2012 and a 46 per cent reduction in 2013. Again, both reductions are against a background of more or equivalent meter volumes being installed in 2012-13 than in 2010.

The inconsistency of the Draft Determination with historically incurred capital expenditure is clear from a comparison of capital expenditure on a per meter basis. Figure 3 presents the remotely read interval meters and transformers expenditure per meter.

⁸ Note that 2009-10 are actuals, 2011 is forecast and 2012-15 are from the AER's Draft Determination.

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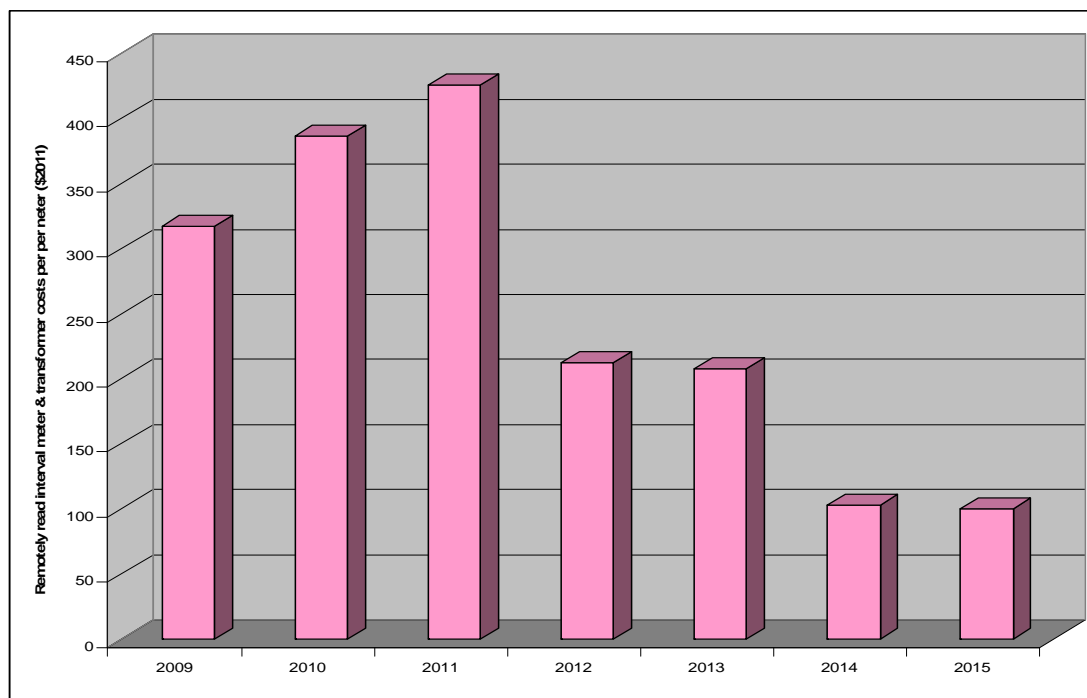


Figure 3 - Remotely read interval meters & transformer costs per meter (\$2011)⁹

Powercor Australia's average actual cost of a remotely read interval meter for 2010 was \$386 per meter (\$2011). However, the benchmark allowance in the Draft Determination equates to \$212 (\$2011) in 2012 and \$208 (\$2011) in 2013 – these represent a reduction of 45 per cent and 46 per cent respectively compared with 2010.

Customer service costs can also be considered in a similar manner, as is illustrated in Figure 4.

⁹ Note that 2009-10 are actuals, 2011 is forecast and 2012-15 are from the AER's Draft Determination.

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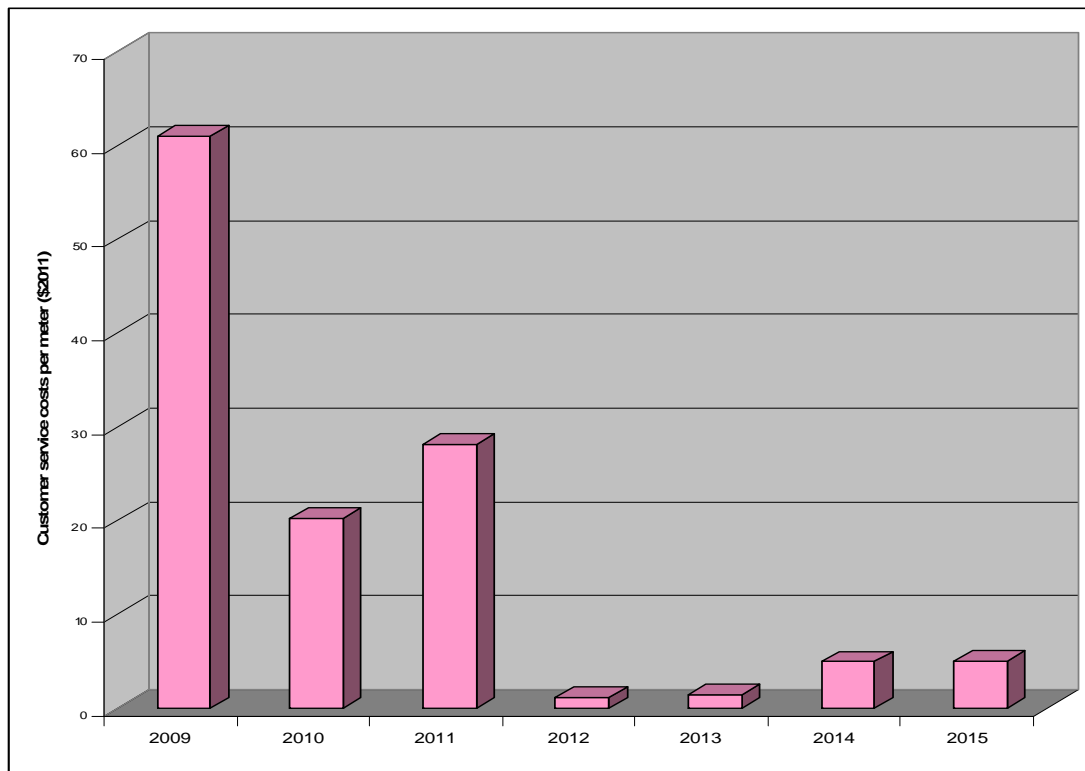


Figure 4 - Customer service costs per meter (\$2011)¹⁰

Putting aside 2009, which included a number of one off fixed costs, Powercor Australia's actual customer service costs for 2010 were \$20 (\$2011) per meter installed. By contrast, the allowance provided in the Draft Determination for Powercor Australia for 2012 and 2013 was \$1 (\$2011) per meter installed.

These comparisons demonstrate that the AER and Impaq's findings are dramatically different to Powercor Australia's historical costs. The differences are so large that they cannot be explained by any minor differences in opinion about specific cost items.

Rather, Powercor Australia believes the differences represent a fundamental misunderstanding by the AER of the functions and activities that comprise Regulated Services. In the remainder of this Amended Application, and in the attached models, Powercor Australia has sought to highlight where the Draft Determination has erred and to explain why this is the case.

Powercor Australia urges the AER to engage not only with this Amended Application but also to review and understand Powercor Australia's accompanying models.

¹⁰ Note that 2009-10 are actuals, 2011 is forecast and 2012-15 are from the AER's Draft Determination.

3.3 Related party margins

The AER's decision on the prudence of Powercor Australia's expenditure on related party margins is a product of the AER's construction and application of the statutory test, including in particular its identification of 'the commercial standard applicable to a related party margin in a [sic] AMI-related contract'.

As the AER makes a number of errors of law or fact in its construction and application of the statutory test and '*the commercial standard applicable to a related party margin in a [sic] AMI-related contract*', it follows that the AER makes errors of law and/or fact in making its decision on the prudence of Powercor Australia's expenditure on related party margins that are material to that decision.

3.3.1 AER's Draft Determination

The AER purports to apply a '*commercial standard test*'.¹¹ In discussing the AER's approach to the assessment of '*whether DNSPs' expenditure under contracts with related parties meets the commercial standard test*',¹² the AER has no regard to considerations of prudence in applying this '*commercial standard test*' and instead appears to construe and apply clause 5C.3(b)(iv) of the AMI Cost Recovery Order as establishing a discrete, stand-alone '*commercial standard test*'.

As a consequence, in part, of the AER's construction of clause 5C.3(b) of the AMI Cost Recovery Order as establishing a discrete, stand-alone '*commercial standard test*' for expenditure in a Submitted Budget, the AER seeks to identify or construct a single '*commercial standard*' for a related party margin, including the quantum of the margin that constitutes that standard, for use as the benchmark against which to assess the quantum of the margins reflected in the expenditure included in the DNSPs' Submitted Budgets.

The AER concludes that the '*commercial standard applicable to a related party margin in a [sic] AMI-related contract*' is one which factors in (i.e. compensates the related party contractor for):¹³

- The historical efficiency of the contractor;
- The corporate and indirect costs of the contractor; and
- Any return of and return on capital not already included in the DNSP's regulatory asset bases.

The AER further concludes that a related party margin consistent with '*the commercial standard*' would not compensate the related party for any risk as no risk is passed to

¹¹ See, for example, the Draft Decision at 83.

¹² In section D.1 of Appendix D to the Draft Decision.

¹³ Draft Decision at 97.

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the contractor because, under the AMI Cost Recovery Order, the DNSP passes through all of its costs to consumers.¹⁴

The AER observes that *'the commercial standard would recognise such historical efficiencies and consequently the margin on the AMI rollout would embed a benefit sharing mechanism to reward past efficiencies for the period 2009-11'*.¹⁵ It concludes that *'a margin of 3 per cent would be required to compensate a contractor operating in the EGW'¹⁶ for the efficiencies it has gained in three years of operation of the AMI rollout and accordingly should be factored into the commercial standard'*.¹⁷ The AER observes that the commercial standard would also compensate the related party contractor for its corporate and indirect costs as *'[t]hese are legitimate costs faced by the contractor in the delivery of regulated service [sic] that need to be compensated'*.¹⁸

The AER observes that it *'is unaware of any assets not already included in the DNSPs' Regulated Asset Bases (RABs) that require compensation and therefore the AER considers that the commercial standard to be applied to AMI rollout services undertaken by a related party would reflect this'*¹⁹ and, thus, concludes that *'for the purposes of this draft determination, the commercial standard reflects that there is no need for compensation through return of and return on capital'*.²⁰

In summary, therefore, the AER concludes that:

- The commercial standard for a related party margin is a margin that does no more than compensate the related party contractor for historical efficiencies plus any required compensation for the contractor's legitimate costs; and
- Such a *'commercial standard'* is a margin of 3 per cent plus any additional percentage required to compensate the related party contractor for its corporate and indirect costs.

3.3.2 Errors in AER's decision on Powercor Australia's expenditure on related party margins

AER misconstrues statutory test of prudent expenditure

The AER errs in construing clause 5C.3(b)(iv) of the AMI Cost Recovery Order as establishing a discrete, stand-alone *'commercial standard test'* for expenditure in a Submitted Budget because, as explained in section 3.1, clause 5C.3(b)(iv) does not establish a discrete, stand-alone *'commercial standard test'* for the assessment by the AER of expenditure in a Submitted Budget. Rather, the *'commercial standard'* referred to in clause 5C.3(b)(iv) is a standard of prudence, that is it particularises the basis of comparison against which the prudence of incurring expenditure is to be

¹⁴ Draft Decision at 97; see also 94-95.

¹⁵ Draft Decision at 96.

¹⁶ Electricity, gas and water

¹⁷ Draft Decision at 96.

¹⁸ Draft Decision at 97.

¹⁹ Draft Decision at 97.

²⁰ Draft Decision at 95.

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assessed, and the application of this standard thus necessitates a consideration of all matters of relevance to the prudence of the decision to incur the expenditure.

AER's inquiry is not that mandated by AMI Cost Recovery Order

As a consequence in part of its error of construction, the AER's inquiry is not that mandated by the AMI Cost Recovery Order. The AER has asked itself the wrong question. Whereas the AER seeks to identify or construct a single '*commercial standard*' for a related party margin, including the quantum of the margin that constitutes that standard, for the reasons discussed in section 3.1, the correct inquiry is whether, in all the circumstances, the incurring of the expenditure involves a substantial departure from the standard of prudence that would ordinarily and reasonably be exercised by a business engaged in commerce. This inquiry necessitates an assessment of the decision-making process and the principles applied in deciding to incur the expenditure against that standard of prudence having regard to all relevant considerations. In particular:

- Whereas the AER's inquiry is directed to the quantum of the margin that constitutes the '*commercial standard*' and whether the quantum of the margins reflected in Powercor Australia's proposed expenditure differs from the quantum of the margin that the AER considers to be the '*commercial standard*', the statutory test is one of the prudence of the incurring of expenditure, or put another way the decision to incur the expenditure, as reflected in the decision-making process adopted by the DNSP and the principles applied in making that decision. The test is not one as to the quantum of the expenditure. It is the incurring of the expenditure (i.e. the decision to incur the expenditure) and not the quantum of that expenditure that must involve a '*substantial departure*' from the requisite standard of prudence; and
- Whereas the AER's inquiry assesses the margins included in the Powercor Australia's proposed expenditure in isolation from other expenditure incurred under its related party contracts, the correct inquiry assesses the decision to incur the expenditure which, for present purposes, is the decision to incur expenditure under the relevant related party contract, that is to enter into that contract, as the DNSP does not make a discrete decision to incur a margin under that contract. The AER's obligation to conduct this inquiry would not be discharged by an assessment of the prudence of the related party margins incurred under the contract in isolation. What is required by the AMI Cost Recovery Order is an assessment of the prudence of the decision to incur the contract expenditure as a whole.

AER takes into account irrelevant considerations

As a result of the fact that the AER undertakes the wrong inquiry in its Draft Decision, the AER takes into account irrelevant considerations.

The AER's single '*commercial standard*' for a related party margin is a margin that does more than compensate the related party for historical efficiencies, its corporate and indirect costs and a return on and of any capital (e.g. the payment of a profit

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margin). The only rationale for the adoption of this '*commercial standard*' that is apparently provided is that the '*commercial standard*' must balance the competing considerations of '*benefits to outsourcing services, including cost savings and increased process efficiencies*' and '*if outsourced to a related party, there may also be efficiencies (such as transfer pricing and unjustified cost inflation) which are not in the long term interests of consumers*'.²¹ On this basis, the AER states that, in identifying its '*commercial standard*', it has had regard to the extent to which related party margins represent actual costs, the extent to which the arrangements confer other benefits such as economies of scale and scope, how the margins compare with benchmark efficient costs and the extent and manner in which risks are allocated under the contract.²²

These matters mirror the factors set out in the AER's Framework and Approach Paper that the AER states its approach takes into account.²³ Similarly, the AER includes a reward for the contractor's historical efficiencies in its '*commercial standard*' for a related party margin in an AMI-related contract, reasoning that the '*commercial standard*' '*would embed a benefit sharing mechanism to reward past efficiencies*'. In short, while the AER recognises that clause 5C.3(b) does not permit the AER to introduce an efficiency test or to assess efficiencies²⁴, the AER's '*commercial standard*' is the product of efficiency considerations. The AER '*commercial standard*' is, in truth, an efficient related party margin for an AMI-related contract.

That the AER's '*commercial standard*' is a product of efficiency, and not prudence, considerations is underlined by a consideration of its reasons for decision in the 2011-15 Electricity Distribution Price Review (EDPR) on forecast capital and operating expenditure on related party margins. While the AER also recognises that the statutory test under clause 5C.3(b) of the AMI Cost Recovery Order is different to the efficiency requirements under the Law and the Rules²⁵, the AER's '*commercial standard*' for a related party margin mirrors its conclusions in its 2011-15 EDPR on the efficient and prudent related party margin for the purposes of clauses 6.5.6(c) and 6.5.7(c) of the Rules.

In the 2011-15 EDPR, the AER concluded that (where it cannot be presumed that a related party margin reflects efficient and prudent costs, e.g. because no competitive tender process was conducted) an efficient and prudent related party margin is one which exceeds the contractor's direct costs only to the extent required to compensate for the contractor's corporate and other indirect costs, provide a return on and of assets owned and utilised by the contractor (but only if those assets are not already included in the DNSP's regulated asset base), compensate for asymmetric risks faced by the contractor and reward the contractor for historical efficiencies for a period of time.²⁶ The AER did not consider it necessary for the DNSP's efficient and prudent expenditure allowance in the EDPR to include a margin to reward for historical

²¹ Draft Decision at 85.

²² Draft Decision at 85-86.

²³ Draft Decision at 83-84.

²⁴ Draft Decision at 84.

²⁵ Draft Decision at 84.

²⁶ 2011-15 EDPR at 298-299.

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efficiencies, however, because these efficiencies were separately compensated for under the EDPR through the efficiency benefit sharing scheme.

The AER's rejected the use of a stand-alone, in-house cost standard for the assessment of related party margins in the 2011-15 EDPR on the basis of its view that:²⁷

a prudent operator would not agree to continue to pay a contractor standalone, in-house costs (the costs it incurred pre-outsourcing), and would only agree to pay something less than this amount as it would require that it receives a share of the contractor's economies of scale and scope (which it has helped the contractor achieve by virtue of outsourcing its activities to the contractor).

However, the AER's conclusion that an efficient and prudent related party margin would not exceed the contractor's legitimate costs plus a reward for historical efficiencies was premised on the efficiency criterion in the Rules and, in particular, outcomes in a workably competitive market. This is evident from the following extract from the 2011-15 EDPR:²⁸

...the AER considers that the prudence criterion provides guidance that the appropriate cost standard is some amount less than 'stand-alone, in-house' costs, and that the efficiency criterion provides more precise guidance for how much less than the standalone, in-house costs is appropriate.

It's accepted by CitiPower, Powercor and JEN that the expected pricing outcomes from a workably competitive market is an appropriate framework to consider the meaning of efficient costs. There is also general acceptance that in a workably competitive market a contractor cannot continue to earn a margin above its full economic costs (that is, earn abnormal profits) for efficiencies it has realised in the past. The issue in contention is over what time period this pass back of historical efficiencies to consumers would be expected to occur in a workably competitive market.

Thus, the 2011-15 EDPR confirms that the AER's '*commercial standard*' for a related party margin in an AMI-related contract is premised on its views as to the efficient (not the prudent) margin and the outcome in a workably competitive market.

For the reasons discussed in section 3.1, the efficiency of expenditure and the outcomes in a workably competitive market are of no relevance to the statutory test of prudence, including in particular the standard of prudence that would ordinarily and reasonably be exercised by a business engaged in commerce, under the AMI Cost Recovery Order. While Powercor Australia agrees with the AER's observation in its Framework and Approach Paper²⁹, that '*the economic consequences for the DNSP*' are relevant considerations in assessing the prudence of expenditure, the permissible considerations of economy fall short of efficiency.

It follows that the AER's '*commercial standard*' is premised on a consideration (and a consideration only) of irrelevant considerations.

²⁷ 2011-15 EDPR at 300.

²⁸ At 300-301.

²⁹ At 43, reproduced in the Draft Decision at 84.

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AER fails to take into account relevant considerations

Also as a consequence of the fact that the AER undertakes the wrong inquiry in its Draft Decision, the AER fails to take into account relevant considerations. In applying the statutory test under the AMI Cost Recovery Order, the AER is required to take into account all considerations relevant to the DNSP's decision to incur the expenditure, that is the decision-making process and principles applied in making that decision, and the standard of prudence that would ordinarily and reasonably be exercised by a business engaged in commerce. The AER must then determine, having regard to all relevant considerations, whether the DNSP's decision to incur the expenditure, that is the process and principles applied in making that decision, constitutes a substantial departure from that standard of prudence. Even if it were a relevant consideration (which for the reasons explained above, we consider it is not), a consideration of only the extent to which expenditure on the related party margins rewards the contractor for historical efficiencies and is required to compensate it for legitimate costs necessarily involves a failure to consider relevant considerations.

Additional errors by AER

Finally, the AER makes the following errors additional to its errors of construction and application of the statutory test:

- The AER failed to take into account and give fundamental weight to the matters referred to in clause 5I.8 of the AMI Cost Recovery Order, as required by clause 5C.4. The AER's assertion³⁰ that it has done so does not suffice to discharge its obligation to take those matters into account and give them fundamental weight.³¹ There must be genuine (i.e. 'adequate' and 'sufficient' and not 'token' or 'nominal') consideration of those matters.³² The matters in clause 5I.8 are directed to an inquiry into the prudence of the decision to incur expenditure at the time the commitment was made to incur the expenditure. As discussed above, the AER did not assess the prudence of the decision to incur the expenditure but instead constructed a 'commercial standard' for a related party margin under an AMI-related contract that was based on the efficient margin or margin consistent with the outcomes in a workably competitive market. The AER does not explain how it has taken into account the matters set out in clause 5I.8 of the AMI Cost Recovery Order. In the absence of such an explanation, it is not readily apparent how (if at all) these matters are relevant to the inquiry the AER has undertaken;
- The AER errs in that it determines, on the basis of irrelevant considerations, to accord little or no weight to the expert opinions on the benchmarked margins. The AER concludes that the benchmarked margins that are the subject of the expert opinions would include compensation for asymmetric risk faced by the contractor and a return of and on capital.³³ As a consequence of the AER's error

³⁰ Draft Decision at 83.

³¹ *Turner v Minister for Immigration and Ethnic Affairs* (1981) 4 ALD 237 at 241; *Queensland Medical Laboratory v Blewett* (1988) 16 ALD 440 at 447.

³² *R v Hunt; Ex parte Sean Investments Pty Ltd* (1979) 180 CLR 322 at 329; *R v Toohey; Ex parte Meneling Station Pty Ltd* (1982) 158 CLR 327 at 333; *Secretary Department of Defence v Fox* (1997) 24 AAR 171 at 176.

³³ Draft Decision at 99.

in construing the '*commercial standard*' referred to in clause 5C.3(b) by reference to the efficient margin or margin consistent with the outcomes in a workably competitive market, the AER concludes that, by contrast, these are matters for which no compensation by a margin under an AMI-related contract is required and, for this reason, the AER places little or no weight on these expert opinions.³⁴ However, as the AER's conclusion on the '*commercial standard*' for a related party margin under an AMI-related contract is based on matters that are irrelevant to the statutory test of prudence, it follows that the AER's decision to accord little or no weight to the expert opinions on benchmarked margins is also erroneous. The AER also errs insofar as it accords weight (in respect of UED and JEN³⁵) only to the expert opinion on benchmarked margins that it considers informed the DNSP's decision-making concerning margins and does not consider all of the benchmarked margins available at the time of decision to incur the expenditure to inform the standard of prudence that would ordinarily and reasonably be exercised by a business engaged in commerce; and

- There is an apparent error of logic or arbitrariness to the AER's reasoning in that the AER simultaneously concludes that the '*commercial standard*' for a related party margin under an AMI-related contract would not compensate the contractor for asymmetric risk because, under the AMI Cost Recovery Order, the DNSP passes through all of its costs to consumers, while at the same time construing and applying the statutory test (on the basis of efficiency considerations and the outcomes in a workably competitive market) such that the DNSP does not pass through all of its costs but retains a significant risk of under-recovery of its AMI-related costs.

3.3.3 Powercor Australia's related party margins

Powercor Australia's expenditure forecasts include margins attributable to CHED Services Pty Ltd (**CHED Services**) and Powercor Network Services Pty Ltd (**PNS**).

CHED Services' Margins

In 2005, CHED Services was separated from Powercor Australia and created as a separate legal entity.

CHED Services provides specialist metering services to Powercor Australia under a *Metering Services Agreement*, including in relation to the AMI rollout and meter maintenance.

The fees that are charged under the *Metering Services Agreement* are agreed annually based on contractually defined principles.

³⁴ Draft Decision at 97 and 99.

³⁵ Draft Decision at 99.

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In 2006, Powercor Australia engaged Ernst & Young to establish the appropriate arm's length transfer prices for services provided by CHED Services by applying the processes and methodologies that are accepted by the Australian Taxation Office (ATO) with respect to transfer pricing of both domestic and international related party services.

Ernst & Young selected a number of comparable companies that provided a similar level of service and/or expertise to CHED Services. Ernst & Young recommended that CHED Services apply a margin of ■■■ per cent to its metering services. Powercor Australia provided the AER with copies of Ernst & Young's reports with its Initial Budget Application.

CHED Services has adopted the margins recommended by Ernst & Young in charging Powercor Australia.

As a result, CHED Services charges an ■■■ per cent margin on its costs where it directly provides services to Powercor Australia.

Where CHED Services contracts with a third party to provide services to Powercor Australia it charges a ■ per cent margin on its suppliers' costs.

PNS's Margins

In 2008, PNS was separated from Powercor Australia and created as a separate legal entity.

PNS provides metering field services to CHED Services, including in relation to the AMI rollout and meter maintenance.

PNS's fees are based on a mix of fixed price quotes and unit rates.

In its 2006 reports for Powercor Australia discussed above, Ernst & Young also established the appropriate arm's length transfer prices for field services provided by PNS. Ernst & Young recommended that a mark-up of ■■■ per cent for PNS's services was commercially realistic.

PNS has adopted the margins recommended by Ernst & Young in charging CHED Services.

As a result, PNS charges a ■■■ per cent margin on its costs (excluding materials) where it directly provides services to CHED Services.

4. Scope test

This section addresses the categories of expenditure where the AER did not approve the proposals in Powercor Australia's Initial Budget Application on the basis of the scope test and where the AER substituted its own revised forecasts.

This section responds to each of the issues that the AER gave in its Draft Determination for rejecting the proposals in Powercor Australia's Initial Budget Application.

4.1 Meter supply volumes

4.1.1 AER's Draft Determination

Accounting for the removal of AMI meters

In its Draft Determination³⁶, having regard for advice from Impaq³⁷, the AER assessed that Powercor Australia's Initial Budget Application did not account for the reuse of AMI meters in its volume forecasts or meter unit rates. The AER considered that this resulted in Powercor Australia's meter purchases being greater than is required. On this basis, the AER assessed that some AMI meters are out of scope.

Upon further review, Powercor Australia accepts that its meter unit rates in its Initial Budget Application did not include an allowance for the reuse of removed AMI meters in its future installations. However, Powercor Australia does not agree with the manner in which the AER has reflected an allowance for the reuse of AMI meters into Powercor Australia's expenditure forecasts.

Section 4.1.2 details Powercor Australia's revised proposal for accounting for the reuse of AMI meters through its meter unit rates.

Meter purchases in 2014-15

In its Draft Determination³⁸, having regard for advice from Impaq³⁹, the AER assessed that Powercor Australia's meter purchases in its Initial Budget Application were in excess of the number that Powercor Australia requires to fulfil its BAU metering requirements.

For the reasons set out in section 4.1.2, Powercor Australia considers that there should be no adjustment made to the 2014-15 meter volumes that Powercor Australia included in its Initial Budget Application. Powercor Australia considers that the reuse of AMI

³⁶ Refer page 48-49 of Draft Determination

³⁷ Refer pages 14-16 and 81-83 of the Impaq report

³⁸ Refer page 48-49 of Draft Determination

³⁹ Refer pages 14-16 and 81-83 of the Impaq report

meters can be fully accounted for through Powercor Australia's revised AMI meter unit rates.

4.1.2 Powercor Australia's Amended Application

Accounting for the removal of AMI meters

There are three reasons why Powercor Australia may remove an AMI meter:

- Meter abolishments;
- Customer initiated removals; and
- Fault removals.

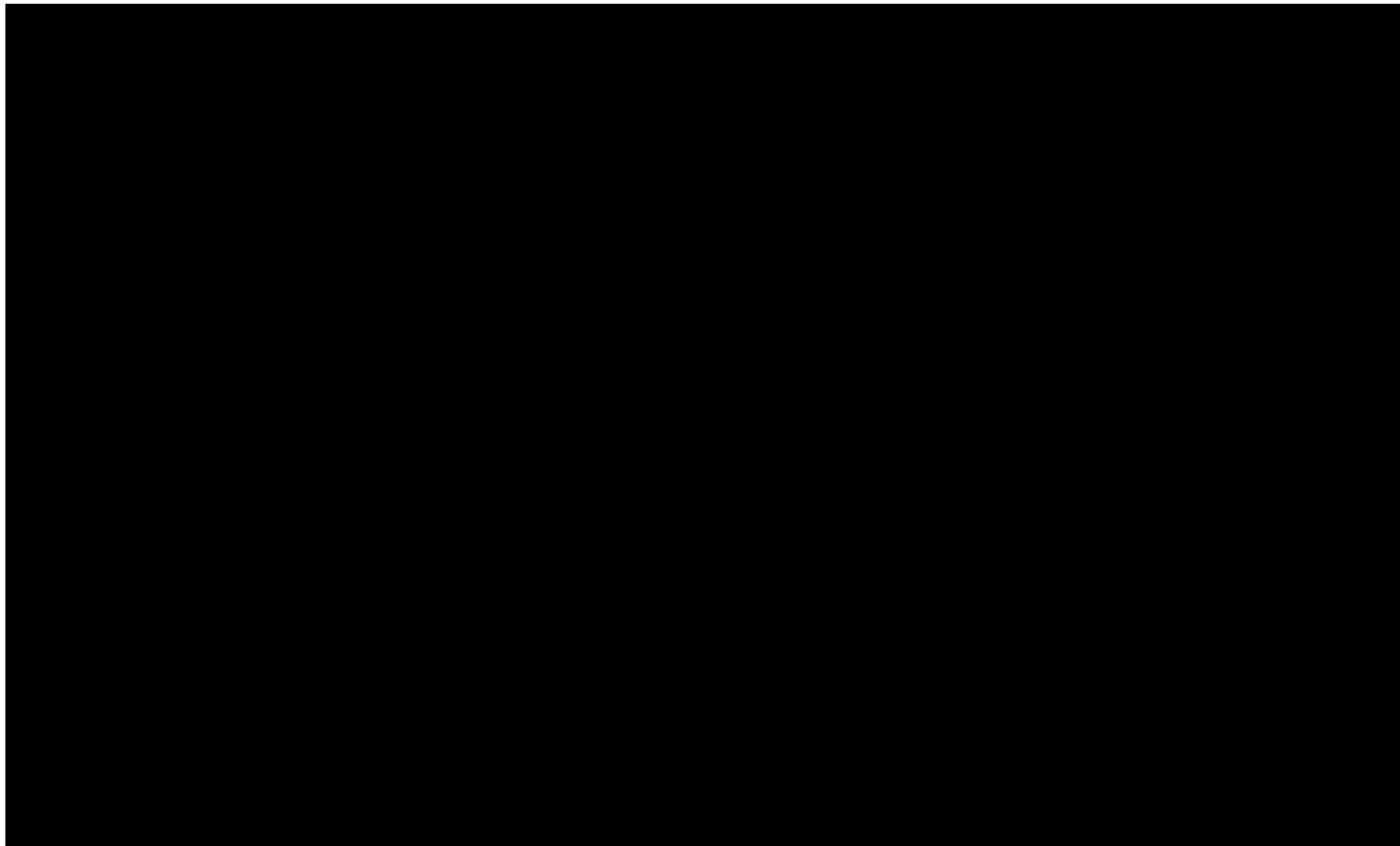
Some of the AMI meters that are removed cannot be reused in future installations. The remaining AMI meters need to be refurbished or repaired before they can be reused for:

- New connections;
- Customer initiated meter replacements;
- Fault meter replacements; or
- Mass rollout.

Powercor Australia recognises that an allowance for the reuse of removed AMI meters could be made through either its meter volumes or its meter unit rates. Powercor Australia has chosen to make this adjustment through its meter unit rates.

██████ provides a decision tree that shows Powercor Australia's costs associated with removed AMI meters, based on the three reasons for removing AMI meters.

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█ highlights that for:

- Abolishment/removals and customer initiated removals:
 - 98 per cent of AMI meters are re-usable and are re-verified at different costs for different types of meters. These are relatively new meters. The Business would expect that over time the number of reusable meters will decline as the meter stock ages. However, for the purposes of the Amended Application, it has been assumed that 98 per cent of AMI meter are re-usable over 2012-15; and
 - 2 per cent of AMI meters are not re-usable and new meters need to be purchased.
- Fault removals:
 - Repairable AMI meters under warranty do not involve a cost to Powercor Australia whereas those that are not under warranty attract a repair fee;
 - Unrepairable AMI meters under warranty do not involve a cost to Powercor Australia whereas those that are not under warranty attract an investigation fee and new meters are required; and
 - AMI meters that are not found to be faulty attract investigation and re-verification fees.

On the basis of the assumptions in the decision tree about the re-use of AMI meters, Powercor Australia has developed a revised set of unit rates for its AMI meters, which are detailed in Table 3.

	2012	2013	2014	2015
AMI Meter 1Ph 1e	130.52	128.74	94.69	94.21
AMI Meter 1Ph 1e + c	144.25	143.61	60.56	49.05
AMI Meter 1Ph 2e + c	156.30	155.24	12.60	14.27
AMI Meter 3Ph DC	247.58	246.48	163.71	163.20
AMI Meter 3Ph DC + c	260.43	260.25	128.52	118.37
AMI Meter 3Ph current transformer (CT)	316.06	315.17	257.39	262.48

Table 3 – Revised unit rates for AMI meters (\$2011)

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Meter installations in 2014-15

As noted, Powercor Australia is proposing to allow for the reuse of removed AMI meters through its meter unit rates, rather than through its meter volumes. The number of new connection meters should therefore be based on the gross number of new connections without any reduction for abolishments, rather than the number of new connections net of abolishments.

Table 4 restates the AMI reconciliation at Table 92 of Impaq's report for 2012-15 using actual customer numbers (not the EDPR forecasts), meter installations by meter type and gross customer numbers (without any adjustments for abolishments).

Powercor Australia Meter Reconciliation	2012	2013	2014	2015
Opening meters	882,807	848,504	832,762	846,520
Meter installations	288,326	188,197	23,167	22,573
<i>New connections meters</i>	16,561	16,708	16,497	15,810
<i>Fault Replacement meters</i>	2,136	3,117	3,747	3,809
<i>Customer initiated replacement meters</i>	5,709	3,951	2,923	2,953
<i>Mass rollout</i>	263,920	164,420	-	-
Meter Abolishments	(2,863)	(2,778)	(2,739)	(2,620)
Non AMI meter customer initiated & fault removals	(5,814)	(2,219)	0	0
Mass rollout removals	(310,798)	(193,477)	0	0
AMI meter for AMI meter replacements	(3,154)	(5,465)	(6,670)	(6,763)
Closing Meters	848,504	832,762	846,520	859,709
Projected closing number National Meter Identifiers (NMIs)	738,635	752,817	766,819	780,238
Net Increase in customer numbers (NMIs)	14,057	14,182	14,002	13,419
<i>Gross increase in customer numbers</i>	16,561	16,708	16,497	15,810
<i>less customer abolishments</i>	(2,504)	(2,526)	(2,494)	(2,391)

Table 4 – Reconciliation of meter installation volumes for 2012-15

Table 4 shows:

- That meter installation volumes are for both new connections and replacement meters;
- The gross and net increase in customer numbers;
- That when new connection meter installation volumes are isolated from replacement meter installation volumes they are the same as the gross number of new customers; and

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- That no adjustment is required to installed meter volumes for the reuse of meters that have been removed in any previous or current year.

Powercor Australia's meter installation volumes in its Initial Budget Application therefore remain valid and its meter unit rates can be recalculated to account for the reused and removed meters.

Implications for meter supply and installation capital expenditure forecasts

Sections 7.3 and 7.4 detail Powercor Australia's revised meter supply and installation non-contract capital expenditure forecasts. These forecasts are based on the same meter volumes as were included in Powercor Australia's Initial Budget Application. The meter supply forecasts are based on the revised meter unit rates that are discussed above.

Table 5 restates Powercor Australia's forecast meter supply volumes for 2012-15.

	2012	2013	2014	2015	Total
Accumulation meters	252	96	-	-	348
Manually read interval meters	225	86	-	-	311
AMI meters	287,850	188,015	23,167	22,573	521,604
Total	288,326	188,197	23,167	22,573	522,262

Table 5 – Meter supply volumes for 2012-15

4.2 Treatment of new connections

4.2.1 AER's Draft Determination

In its Draft Determination⁴⁰, having regard for advice from Impaq⁴¹, the AER considers that Powercor Australia's meter installation numbers for 2012-13 are too high because they include installations related to new connections, which should be recovered through Alternative Control Services charges. The AER therefore assessed that some AMI meter installation volumes are out of scope.

The AER has made an error in assuming that the costs submitted by Powercor Australia include costs related to the installation of new connections.

Powercor Australia's installation costs for new connections are included in Function Codes 123, 124 and 126. The AER will note that in the *Powercor Contract Cost.xls* spreadsheet submitted to the AER by email on 6 April 2011 that the 'Contract' work sheet does not include line items for Function Codes 123, 124 and 126 in column A. Also, the AER should note that *Powercor meter & comms capex.xls* has excluded any costs associated with these three Function Codes.

⁴⁰ Refer page 49 of Draft Determination

⁴¹ Refer pages 19 and 85-86 of the Impaq report

The labour costs relating to installations for new connections have therefore not been included in Powercor Australia's meter installation forecasts.

4.2.2 Powercor Australia's Amended Application

The AER should not have removed an amount equivalent to Powercor Australia's labour costs relating to installations for new connections from Powercor Australia's meter installation forecasts as Powercor Australia did not include any such amount in its Initial Budget Application.

The AER should reinstate the amount that it removed because it did not have anything to do with the installation of new connections.

Powercor Australia's Meter Installation – Non-Contract Capital Expenditure forecasts are detailed in section 7.4 of this Amended Application.

4.3 Two-element meters

4.3.1 AER's Draft Determination

The AER rejected Powercor Australia's proposed expenditure relating to two-element meters in its Draft Determination on the basis that it was out of scope. Powercor Australia considers that there are significant net benefits of installing two-element AMI meters with a contactor for existing customers with two-element meters and that it should be allowed to include the costs of these meters in its expenditure forecasts.

Benefits of two-element meters

In its Draft Determination⁴², the AER argued that the introduction of time of use (ToU) tariffs and the advanced stage of the AMI rollout significantly reduced any potential benefits of two-element meters. It used this argument to support its view that two-element meters are out of scope of the AMI Cost Recovery Order.

Powercor Australia does not agree with the AER's assessment.

Powercor Australia is currently installing two-element AMI meters with a contactor for customers who are currently on differential (controlled load) tariffs. These are generally rural customers who do not have access to reticulated gas.

Powercor Australia considers that two-element meters provide a number of on-going benefits and advantages compared with single-element meters with or without ToU tariffs.

Firstly, as noted above, two-element meters allow Powercor Australia to apply a differential tariff to customers on each element. Powercor Australia could not continue

⁴² Refer page 60-61 of Draft Determination

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to support its existing tariff offering if it does not retain flexibility to control customers' load directly. Moving onto a single set of ToU tariffs would result in significant price shocks to many customers who have made substantial investments in air-conditioning units and slab-heating. These price shocks may make it uneconomic for these customers to operate their electricity appliances and result in their assets becoming stranded.

Secondly, controlled-load customers who are unable to access gas will have no opportunity to change their energy sources in response to higher electricity prices. This will particularly disadvantage rural customers who live in areas that are not supplied by reticulated gas and who have limited solar options.

Thirdly, single element meters will reduce the network benefits that Powercor Australia can achieve by directly managing controlled load using two-element meters. This is because whereas with two-element meters Powercor Australia could agree with customers to shift the time of their hot water load without cost implications, customers with single element meters would bear the cost of shifting their load to a time that suits Powercor Australia. Powercor Australia cannot apply a differential tariff with single-element meters. Customers will therefore have no incentives to allow Powercor Australia to control their load. The inability to manage peak demand will bring forward the need for Powercor Australia to augment its network.

Fourthly, some hot water and slab heating systems require an afternoon boost to operate effectively. Currently, these boosts have been available at off-peak rates, however they would be charged at peak rates if a customer had a single-element meter and ToU tariffs. This will particularly affect customers in rural customers that do not have access to gas.

Fifthly, as noted in PwC's report and the attached letter dated 16 August 2011 (Attachment 5), and as is discussed further below, installing two-element meters with a contactor would be more economic than installing single-element meters with a contactor once relevant administrative and customer enquiry and complaint costs are taken into account.

Sixthly, PwC identifies the following unquantified benefits of installing two-element AMI meters compared with the alternatives:

- Greater certainty for Powercor Australia's AMI rollout strategy;
- Avoiding retailer and consumer costs of tariff re-assignments; and
- Avoiding retailer and consumer costs of initiating and reacting to complaints.⁴³

Finally, Powercor Australia considers that any decision to reject two-element meters would create significant transitioning issues in terms of system, process and training changes that would be difficult to implement in the two month period between the Final Determination (31 October 2011) and 1 January 2012.

⁴³ Refer page 9 of PwC report

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Timing of ToU moratorium

In its Draft Determination⁴⁴, the AER indicated that it understands that the Victorian Government's ToU moratorium will conclude on 31 December 2011. It considers that it is therefore not appropriate to assume, as PwC did in its report for Powercor Australia that the moratorium will continue until at least the end of 2013.

The AER has not cited any Victorian Government source to inform its view that the moratorium will conclude on 31 December 2011. Further, Powercor Australia is not aware, and has not been informed, of any such decision.

Powercor Australia is aware that the Victorian Government has engaged Deloitte to conduct a study regarding ToU tariffs. Powercor Australia considers that the most likely outcome of this study, and hence the Victorian Government's most likely position, will be the voluntary implementation of ToU tariffs. Under such arrangements, customers will have the option of remaining on their existing network tariff.

In the absence of a two-element meter, Powercor Australia could not continue to support its existing tariff offering, but it will likely be required to do so by virtue of the opt-in arrangements.

The AER is incorrect to say on page 61 of its Draft Determination *'that Powercor's view that a net benefit will arise from the installation of two-element meters, as set out in the PwC report, fundamentally relies on the assumption that the ToU moratorium will be extended'*. Rather, Powercor Australia's view, which is supported by PwC's report and attached letter, is that, regardless of the ToU moratorium, installing a single element meter with a contactor and requiring customers to transfer directly to ToU tariffs is a significantly more expensive option than installing a two-element meter with a contactor once the cost of customer enquiries and complaints has been considered.

In any event, Powercor Australia does not think that the Victorian Government will require customers to be compulsorily re-assigned to ToU tariffs – rather, it expects that customers will be able to opt-in voluntarily to ToU tariffs. This means that, in a practical sense, Powercor Australia will need to continue to offer its current tariffs, which will require it to have two-element meters.

⁴⁴ Refer page 61-63 of Draft Determination

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Cost of single-element and two-element meters

In its Draft Determination⁴⁵, the AER indicated that it understands that a two-element AMI meter with a contactor costs \$12 more than a single-element AMI meter with contactor. It concluded that this transforms the net benefit of a two-element meter into a cost.

Powercor Australia agrees that a two-element AMI meter with a contactor costs \$12 more than single-element AMI meter with contactor.

However, the AER has not considered the other costs that Powercor Australia will bear by moving to a single-element AMI meter with contactor.

PwC's report and accompanying letter considered this matter in detail. PwC concluded that installing two-element meters with a contactor would avoid the following costs compared with installing either a single-element meter with a contactor or two single-element meters (one with a contactor):

- The administrative costs associated with tariff reassignments; and
- The costs of receiving and resolving customer enquiries and complaints.

PwC's report and accompanying letter indicates that installing two-element meters with a contactor would deliver a net benefit of:

- \$21 compared with a single-element meter with a contactor;
- \$128 compared with two single-element meters (one with a contactor); and
- \$120 compared with a single-element meter with a contactor and direct transfer of customers to ToU tariffs – this is the AER's assumed scenario.

In its 16 August 2011 letter, PwC notes that under the AER's assumed scenario, it would be reasonable to assume that 50 per cent of customers will complain about being transferred directly to final ToU tariffs and, of these a further 20 per cent will be severely affected and will elevate their complaints to the Energy & Water Ombudsman (Victoria) (**EWOV**). Powercor Australia has approximately 200,000 customers with two-element meters. Based on PwC's assumptions and analysis, Powercor Australia would incur costs of about \$25 million in managing the enquiries and complaints if these customers were transferred directly to final ToU tariffs.

The \$12 differential between the cost of a two-element meter with a contactor and a single-element meter with a contactor is therefore more than off-set by the other costs

⁴⁵ Refer page 61 of Draft Determination

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of the AER's proposed option of pursuing a single-element meter with a contactor and having direct transfer of customers to ToU tariffs.

Powercor Australia therefore considers that the PwC report, and accompanying letter, present a compelling case that the installation of two-element AMI meters with a contactor is a more economic solution than installing single-element AMI meters with contactor. As noted above, PwC's conclusions, and Powercor Australia's position, are independent of the timing of the ToU moratorium.

4.3.2 Powercor Australia's Amended Application

Powercor Australia believes that its expenditure forecasts should continue to be based on installing two-element AMI meters with a contactor for existing customers with two-element meters. As discussed above, the key reasons for this view are that:

- Powercor Australia believes that the most likely outcome of the Victorian Government's current review is voluntary re-assignment to ToU tariffs, whereby customers would need to opt-in to ToU tariffs, in which case two-element meters are required to support existing tariff structures;
- The installation of two-element AMI meters with a contactor is a more economic solution than single-element AMI meters with a contactor and direct transfer to ToU tariffs;
- There are considerable customer and network advantages and benefits of retaining two-element meters. These advantages and benefits remain as relevant today as in 2009-11 and include the deferral of capital investment to manage peak demand;
- In the absence of voluntary tariff re-assignment, hot water customers and slab heating customers would face large price increases and appliance stranding. This will particularly disadvantage rural customers who do not have access to reticulated gas;
- Powercor Australia would likely face significant customer management costs if mandatory tariff re-assignment occurs; and
- There would be significant transitioning issues in terms of system, process and training changes that would be difficult to implement in the two month period between the Final Determination (31 October 2011) and 1 January 2012.

5. Prudency – competitive tender test

This section addresses the assessment of Powercor Australia's expenditure against the competitive tender test.

5.1 AER's Draft Determination

The AER made no cuts in its Draft Determination on the basis of the Competitive Tender Test to the following items that were subject to a competitive tender - meter supply, meter installation, supply of communications technology and backhaul communications.⁴⁶

5.2 Powercor Australia's Amended Application

As foreshadowed in its Initial Budget Application, Powercor Australia has updated its contract expenditure with actual contract rates that were re-negotiated with field force service providers associated with meter and communications installation. Powercor Australia has also identified some costs that were incorrectly classified as non-contract costs and has now re-classified these as contract costs.

Powercor Australia's field delivery model and contracting strategy

Powercor Australia's field delivery model and contracting strategy was agreed in July 2009 upon finalisation of the field installation request for proposal (**RFP**) process. The contracting strategy was implemented prior to the first meter installation in October 2009 with the execution of framework agreements with the selected field force service providers, the then Bilfinger Berger Services (Australia) Pty Ltd (**BBS**) (now known as Conneq Infrastructure Services (Australia) Pty Limited (**Conneq**)) and UXC Limited (**UXC**) Metering Solutions.

The delivery model and vendor recommendations as at June 2009 are shown in Figure 6.

⁴⁶ Refer page 76-77 of Draft Determination

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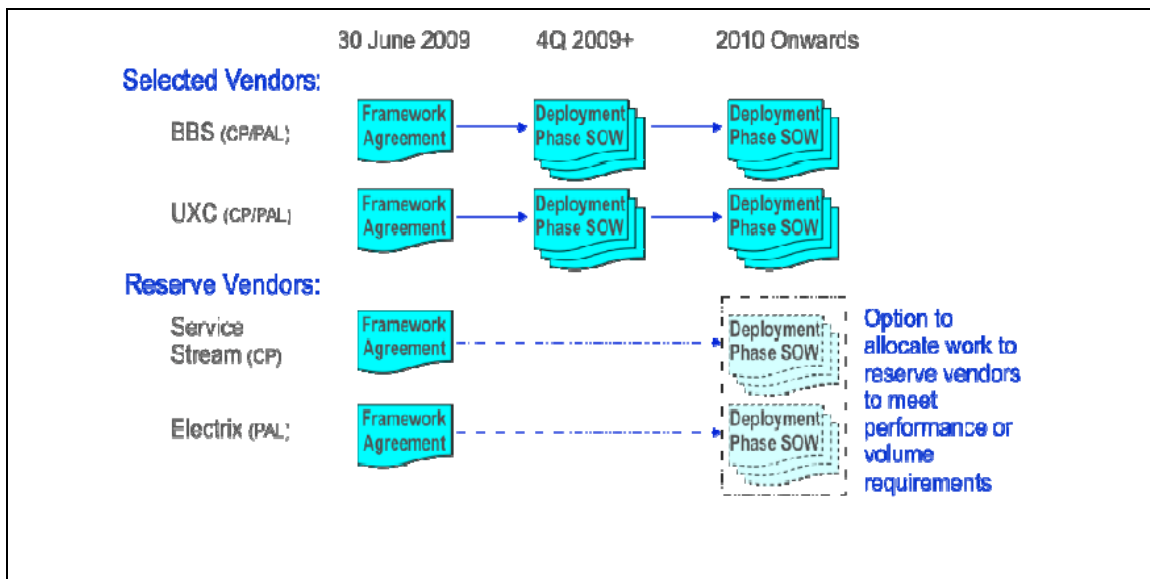


Figure 6 - Delivery model recommendations June 2009

In October 2010, Powercor Australia established a performance review of the field delivery model. This review had regard for:

- Performance expectations of the field delivery model and individual field force service providers;
- Lessons learned and experiences gained over the 12 months to 30 September 2010; and
- A reasonable sample of installation activity being undertaken to realistically evaluate field force service provider performance and the contractual arrangements under which the field force service providers are engaged.

Contract renegotiation

The framework agreements that were executed in June 2009 assumed a specific installation scope of work and an allocation of material and management responsibilities between the Businesses and the field force service providers. Following the completion of more than 200,000 AMI meter changeovers by the Businesses, and as new policies and procedures are introduced by the Businesses, a range of updates have been made to the framework agreements with each field force service provider.

These updates reflect:

- The actual scope of installation activities being performed by each field force service provider; and
- The field deployment operational planning and resource management approach that has been adopted and refined by Powercor Australia that will support the remainder of the AMI rollout program.

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Portland Group Pty Ltd (**Portland**) was engaged to independently audit the framework agreement contract renegotiation process. Portland found the framework agreement renegotiation process meet with good practice in terms of completeness, fairness, consistency, adequacy, governance, transparency and probity. Portland's audit report entitled *AMI Program Field Force Service Provider Contract Renegotiation Audit Report* is included as Attachment 15 of this Amended Application.

Unit rate variations

The individual field force service provider unit rates included in this Amended Application vary from those included in the Initial Budget Application. The unit rates included in this Amended Application are consistent with the unit rates set out in each field force service provider's amended framework agreement.

The key changes include:



- Additional AMI installation job types. AMI rollout job types have been further segmented to support deployment planning and technical risk management. In 2009, all AMI meter conversions were allocated to one of 10 different installation categories, or job types. This has now been broadened to 15 job types;
- Scope of '*hazards and fixes*' has been updated to reflect the removal of redundant items and the inclusion of new required activities; and
- Allocation of some of the installation of communications devices (access points and relays) to external field force service providers.

Other changes

In addition to the changes in the field force framework agreements, Powercor Australia has also identified a number of items in the Initial Budget Application were incorrectly allocated to the non-contract segment of costs. These items relate to:

- Provision of rollout project management services by Silver Spring Networks Inc (SSN) up until completion of the AMI rollout in December 2013; and
- Provision of technical support from Landis & Gyr (**L&G**) up until 31 December 2015.

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In the Amended Application these costs have been reassigned to the contract cost category. These are identified in the '*Powercor meter & comms capex.xls*' model as Contract Fixed Costs.

Table 6 below details Powercor Australia's revised contract expenditure forecast for meter supply, meter installation, supply of communications technology and communications installation.

	2012	2013	2014	2015	Total
Meter supply	45,511	30,990	2,197	2,118	80,816
Meter installation	20,114	12,943	-	-	33,057
Communications supply	2,312	25	36	36	2,410
Communications installation	6,630	2,590	424	167	9,810

Table 6 – Amended contract expenditure (\$'000s, 2011 Real)

6. Prudency – expenditure incurred test

This section addresses the categories of expenditure where the AER did not approve the proposals in Powercor Australia's Initial Budget Application on the basis of the expenditure incurred test and where the AER substituted its own revised forecasts.

This section responds to each of the issues that the AER gave in its Draft Determination for rejecting the proposals in Powercor Australia's Initial Budget Application.

6.1 Call centre costs

6.1.1 AER's Draft Determination

In its Draft Determination⁴⁷, having regard for advice from Impaq⁴⁸, the AER assessed that call centre-related fault and emergency response costs will not be incurred in Customer Services.

6.1.2 Powercor Australia's Amended Application

The AER is incorrect in assuming that call centre costs will be recovered under Meter Installation. Powercor Australia has included these costs under Customer Services consistent with its 2009-11 Budget Application and the AER's Final Determination for the same period.

The AER's concern arises by virtue of the categorisation of costs that it and Impaq have used rather than because there is double counting by Powercor Australia.

Powercor Australia has correctly included call centre costs under Customer Service – refer to section 8.4 of this Amended Application. This can also be verified through a review of the model named *Powercor meter & comms capex.xls*, which does not include call centre costs.

There is no duplication between Customer Service and meter installation in relation to call centre costs. On this basis, the AER should not reduce expenditure in this category.

⁴⁷ Refer page 81 and 189 of Draft Determination

⁴⁸ Refer pages 20-21, 38, 87-88 and 105 of the Impaq report

6.2 Customer interactions

6.2.1 AER's Draft Determination

In its Draft Determination⁴⁹, having regard for advice from Impaq⁵⁰, the AER considered that customer interaction costs will not be incurred in Customer Service as they will be recovered through Meter Installation, specifically for '*resolving exceptions*' and '*post and courier costs, stationery and printing for mail outs*'.

6.2.2 Powercor Australia's Amended Application

The AER is incorrect to include customer interaction costs under Meter Installations and should instead leave them under Customer Services consistent with its 2009-11 Budget Application and the AER's Final Determination for the same period.

The AER's concern arises by virtue of the categorisation of costs that it and Impaq have used rather than because there is double counting by Powercor Australia.

Powercor Australia has correctly included customer interaction costs under Customer Service – refer to section 8.4 of this Amended Application. This can also be verified through a review of the model named *Powercor meter & comms capex.xls*, which does not include customer interaction costs.

Powercor Australia has not made any duplication between Customer Service and Meter Installation. On this basis, the AER should not reduce expenditure in this category.

6.3 AMI data delivery

6.3.1 AER's Draft Determination

In its Draft Determination⁵¹, having regard for advice from Impaq⁵², the AER assessed that AMI data delivery costs as part of Communications Operations will not be incurred as these costs will be recovered through the Meter Data Services and IT Operating Expenditure.

⁴⁹ Refer page 81 and 189 of Draft Determination

⁵⁰ Refer pages 21-22, 38, 88 and 105 of the Impaq report

⁵¹ Refer page 81 and 189 of Draft Determination

⁵² Refer pages 41 and 108 of the Impaq report

6.3.2 Powercor Australia's Amended Application

The AER is incorrect to reduce Powercor Australia's Communications Operations on the basis that Communications Operations is included in either the Meter Data Services or the IT Operating Expenditure categories.

This is because the AMI Communications Control function relates to the operation and maintenance of the telecommunications network infrastructure – it is not responsible for any data that is conveyed using the infrastructure.

Powercor Australia has not duplicated the recovery of any costs between Communications Operations, Meter Data Services or IT Operating Expenditure. Powercor Australia has classified its costs in a manner consistent with its 2009-11 Budget Application and the AER's Final Determination for the same period. On this basis, no adjustment is required.

6.4 Technology acceptance

6.4.1 AER's Draft Determination

In its Draft Determination⁵³, having regard for advice from Impaq⁵⁴, the AER assessed that technology acceptance costs as part of Communications Operations will not be incurred as they will be recovered through IT Capital Expenditure.

6.4.2 Powercor Australia's Amended Application

Powercor Australia does not contest that technology acceptance costs should be capitalised. However, it does not accept that these costs have already been accounted for in IT Capital Expenditure in the Initial Budget Application as the AER alleged in its Draft Determination.

Deloitte conducted a thorough review of technology acceptance activities and functions and found that these included testing of all proposed changes to AMI communication systems prior to their implementation. Any new or updated component to be introduced the AMI communications system must be backwards compatible with the parts of the system that it interacts with. It is important to note the testing conducted under the technology acceptance activities and functions is complementary to the testing undertaken by IT. The focus of IT's testing is to ensure that the IT infrastructure components (i.e. servers, storage, router switches etc) are operational and integrated with other IT systems.

⁵³ Refer page 81 and 189 of Draft Determination

⁵⁴ Refer pages 41-42 and 109 of the Impaq report

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Accordingly, Powercor Australia, for the purposes of the Amended Application, has re-assigned its technology acceptance costs from Communications Operations to Communications Installation Capital Expenditure. This matter is discussed further in section 3.2 of Deloitte's report.

7. Prudency – commercial standard – capital expenditure

This section addresses the categories of capital expenditure where the AER did not approve the proposals in Powercor Australia's Initial Budget Application on the basis that it did not meet the commercial standard and where the AER substituted its own revised forecasts.

This section:

- Examines errors by the AER in the application of the AMI Cost Recovery Order to Powercor Australia's capital expenditure; and
- Responds to each of the reasons that the AER gave in its Draft Determination for rejecting the proposals in Powercor Australia's Initial Budget Application for each category of capital expenditure. Powercor Australia provides revised capital expenditure forecasts that it considers it will incur and that are consistent with the '*commercial standard that a reasonable business would exercise in its circumstances*' for the purposes of clause 5C.3(b)(iv) of the AMI Cost Recovery Order.

7.1 Errors in the application of the AMI Cost Recovery Order

The AER concludes that Powercor Australia's proposed capital expenditure for the following expenditure categories involves a substantial departure from the commercial standard that a reasonable business would exercise in the circumstances:

- Meter supply - non-contract costs;
- Meter installation - non-contract costs;
- Communications equipment installation - non-contract costs;
- IT capital expenditure;
- Communications equipment supply - non-contract costs; and
- Project and administrative costs.

(the **Capital Expenditure Categories**).

For this reason, in accordance with clause 5C.5 of the AMI Cost Recovery Order, the AER rejects the proposed expenditure for each of the Capital Expenditure Categories included in Powercor Australia's Initial Budget Application and sets out the expenditure that it would determine to approve for each of these Categories if included in a new Submitted Budget.

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The AER's decision on the prudence of Powercor Australia's proposed expenditure for each of the Capital Expenditure Categories is a product of the AER's construction and application of the statutory test including in particular its identification of the '*commercial standard*' in respect of each of these Capital Expenditure Categories.

The AER makes a number of errors of law and/or fact in its construction and application of the statutory test and its identification of the commercial standard for each of Powercor Australia's Capital Expenditure Categories. It follows that the AER makes errors of law and/or fact in making its decision on the prudence of Powercor Australia's proposed capital expenditure that are material to that decision.

7.1.1 AER's Draft Determination

Test applied by AER

As it does in considering Powercor Australia's expenditure on related party margins as discussed in section 3.3, the AER purports to apply a '*commercial standard test*' to Powercor Australia's proposed capital expenditure.⁵⁵ The AER defines this '*commercial standard test*', in the context of its consideration of expenditure on meter supply - unit costs as follows (at 167):

[whether] incurring the forecast expenditure would involve a substantial departure from the commercial standard that a reasonable business would exercise in the circumstances (commercial standard test).

As discussed further below, the AER's discussion of its assessment of whether Powercor Australia's proposed capital expenditure meets this '*commercial standard test*' does not disclose any consideration by it of prudence in applying that test. Consistent with its definition of the '*commercial standard test*' (set out above), the AER instead appears to construe and apply clause 5C.3(b)(iv) as establishing a discrete, stand-alone test. Indeed, the language employed by the AER in conveying its own and Impaq's conclusions regarding Powercor Australia's proposed capital expenditure suggests that the AER has applied a test of '*reasonable expenditure*' and not '*prudent expenditure*'.⁵⁶

⁵⁵ See, for example, the references to the application of a 'commercial standard test' to proposed capital expenditure in the Draft Decision at 166, 167, 169, 170, 171, 172, 173, 175, 177, 181 and 182.

⁵⁶ See, for example, the references to the number of FTEs that 'is reasonable' at 168, the statement that 'an allowance for contract administration of 10 per cent is reasonable' at 172, the reference to 'a reasonable market rate for the work required' and to the number of FTEs that is 'reasonable' at 174, the repeated references to the expenditure on infrastructure that 'appears reasonable', 'is reasonable' and 'considered reasonable' at 179 and the reference to the number of vehicles that 'are a reasonable quantity' and the 'general equipment and test lab' costs 'appear[ing] reasonable' at 182.

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Impaq's findings and conclusions in the Impaq Report

The AER states that, due to the fact that Powercor Australia did not provide it with all of the information it had requested, the AER sought advice from Impaq on the proposed capital expenditure and based its assessment of the Powercor Australia's proposed capital expenditure on the information available to it, including in particular the Impaq Report.⁵⁷

Impaq states at pages 5 and 6 of its report that its terms of reference included advice regarding the likely market value of the DNSPs' proposed expenditure and to review the DNSPs' Submitted Budgets and the additional information they have provided to assess whether their proposed expenditure meets the tests set out in the AMI Cost Recovery Order in relation to scope and prudence. It further states (at 8) that it has approached its review of the DNSPs' Submitted Budgets on the basis of the requirements of the AMI Cost Recovery Order, in particular clauses 5C.2 and 5C.3.

For each of Powercor Australia's Capital Expenditure Categories, however, Impaq reviewed Powercor Australia's proposed expenditure and the information provided by Powercor Australia in relation to that proposed expenditure, with a view to determining its own assessment of the cost of the activities to which the relevant Category relates.

For the Meter Supply - Non-Contract Category, Impaq's cost assessment was based on its opinion of the number and level of full time equivalents (**FTEs**) required, and its estimate of the salary rates, on-costs and annual cost of overheads, accommodation, office supplies, IT services etc per FTE at that level. Impaq's opinion on the number of FTEs required for the activities to which the Capital Expenditure Category relates is based on generalised factual findings as to matters including progress of the AMI rollout to date, the performance of meters installed to date and the absence of changes to the OIC S286 made on 12 November 2007 under Sections 15A and 46D of the Electricity Industry Act 2000 (Vic) (**AMI Specifications Order**). The basis for these factual findings is not always explained and the material on which its findings are based is not always identified.⁵⁸

For the Meter Installation - Non-Contract Category, Impaq determined its cost assessment by performing its own cost 'build up', based on:

- Its own assessment of the activities likely to be involved in the Capital Expenditure Category;
- Its own assumptions as to the practices of Powercor Australia;⁵⁹
- Its own views on the quantum of those activities and associated quantity of resourcing required based on those assumptions; and
- Its own estimate of the unit cost(s) of the resourcing required.

⁵⁷ Draft Decision at 167, 168, 170, 177 and 181.

⁵⁸ See, for example, Impaq Report at 83 and 84.

⁵⁹ See, for example, Impaq's assumptions made in deriving its assessment of meter installation - other costs: Impaq Report at 88.

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The assessments, assumptions, views and estimates on which Impaq's cost 'build up' was based are often unexplained and/or unsubstantiated.⁶⁰

For the Communications Equipment Installation - Non-Contract Capital Expenditure Category, Impaq's cost assessment was based on:

- Its own estimate of the installation cost per access point or relay device based on rates quoted by meter installation contractors by other (unspecified) DNSPs for installation of a device and the information provided by Powercor Australia on the number of those devices to be installed in each year of the subsequent budget period; and
- Its own assessment of the number and level of FTEs required for the activities to which the Capital Expenditure Category relates and its own estimate of the salary rates, on-costs and annual cost of overheads, accommodation, office supplies, IT services etc per FTE at that level.

Impaq's assessment of the required number and level of FTEs is based on its generalised factual findings concerning the design, performance monitoring and upgrade testing of mesh networks.⁶¹ The basis for these findings is not explained, nor did Impaq identify the material on which it purports to rely.

For the IT Capital Expenditure Category, Impaq's cost assessment:

- Excluded from Powercor Australia's proposed expenditure any expenditure for cost components in the Category that, in Impaq's opinion, was not required for compliance with Powercor Australia's legal obligations, as no changes in regulatory reporting obligations had occurred, or were not otherwise necessary having regard to the progress of the AMI rollout; and
- Reduced the proposed expenditure on infrastructure on the basis of Impaq's own views of needed expenditure.

The basis for Impaq's generalised factual findings as to the work activity required at different stages of the AMI rollout is explained in the most cursory manner.

For the Communications Equipment Supply - Non-Contract Costs Capital Expenditure Category, Impaq's cost assessment was based on its view that the maximum contract

⁶⁰ Impaq Report at 87, 88 and 89. See, for example, the lack of explanation of the basis for Impaq's assessment of the activities involved in the meter installation - other Capital Expenditure Category, Impaq's estimate of likely call volumes in estimating call centre costs, the lack of explanation for Impaq's volume estimates used in estimating customer communications costs, its assumptions in estimating meter deliveries to contractors costs and transport and storage of removed meters costs, its assumptions as to store handling costs in estimating transport and storage of removed meters costs, the lack of explanation for Impaq's estimates of the number of removed meters in estimating transport and storage of removed meters costs, the lack of explanation for Impaq's view that fuse sticks would have already been provided to installation contractors in estimating meter seals & fuse sticks costs and the lack of explanation for Impaq's view on the level and number of FTEs required for the overall management of meter installations relied on in estimating installation contract management and installation issues management costs.

⁶¹ Impaq Report at 91 and 92.

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administration charge (i.e. the percentage of contract costs) that is '*justified*' is 10 per cent. No explanation of the basis for Impaq's assessment of the contract administration charge that is '*justified*' is provided by the Impaq Report.⁶²

For the Project And Administrative Costs Capital Expenditure Category, Impaq's cost assessment was based on:

- For the motor vehicle component, Impaq's assumptions regarding the activities for which the vehicles are used by Powercor Australia, the cost of a vehicle suitable for this purpose, the period for which the vehicle would be retained by Powercor Australia and the residual value of the vehicle as a percentage of purchase price, and '*Impaq's view that five vehicles would be needed*'; and
- Powercor Australia's proposed expenditure for the general equipment and test lab component as this expenditure was accepted by Impaq as '*reasonable*'.

The basis for Impaq's assumptions was not explained.

AER's application of Impaq's expenditure estimates as the 'commercial standard' and resultant assessment of Powercor Australia's proposed capital expenditure

For each of the Capital Expenditure Categories, the AER adopts Impaq's expenditure estimate as the commercial standard that a reasonable business would exercise in the circumstances.

The AER assesses the quantum of Powercor Australia's proposed capital expenditure against Impaq's assessment and, on the basis that the quantum of the proposed capital expenditure for each of the Capital Expenditure Categories involved a substantial departure from that assessment, the AER concluded that the proposed expenditure for each of those Categories involved a substantial departure from the commercial standard. In those circumstances, the AER determined it would approve proposed capital expenditure for those Categories in a revised budget in an amount based on Impaq's assessment, otherwise referred to by the AER as '*the commercial standard as set out in Impaq's advice*'.

7.1.2 Errors in AER's decision on Powercor Australia's proposed capital expenditure

AER misconstrues statutory test of prudent expenditure

As it did in assessing Powercor Australia's proposed expenditure on related party margins in section 3.3, the AER construes clause 5C.3(b)(iv) of the AMI Cost Recovery Order as establishing a discrete, stand-alone '*commercial standard test*' for expenditure in a Submitted Budget. Indeed, as discussed above, the language employed by the AER in conveying its own and Impaq's conclusions regarding

⁶² See the Impaq Report at 91.

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Powercor Australia's proposed capital expenditure suggests that the AER has applied a test of '*reasonable expenditure*'.⁶³

For the reasons already explained, clause 5C.3(b)(iv) does not establish a discrete test for proposed expenditure nor does the AMI Cost Recovery Order establish a test of '*reasonable expenditure*'. The test established by the Order is one of the prudence of incurring expenditure and the '*commercial standard*' referred to in clause 5C.3(b)(iv) particularises the basis of comparison against which the prudence of incurring expenditure is to be assessed. That standard is the standard of prudence that would ordinarily and reasonably be exercised by a business engaged in commerce in the circumstances.

The substitution, for this test, of a test of '*reasonable expenditure*' would be an error of law and one that would be fundamental to the decision to reject Powercor Australia's proposed capital expenditure.

AER's inquiry is not that mandated by AMI Cost Recovery Order

Whether or not the AER has construed clauses 5C.2 and 5C.3 of the AMI Cost Recovery Order as establishing a test of '*reasonable expenditure*', the AER's conclusions on Powercor Australia's proposed capital expenditure are not informed by the inquiry mandated by the Order. If the AER has not asked itself the wrong question, it has made factual errors in construing and applying the statutory test of prudent expenditure mandated by the Order that nonetheless have the consequence that the AER's inquiry is not that mandated by the Order.

The AER has sought to identify and construct a single '*commercial standard*' for the quantum of expenditure for each Capital Expenditure Category. It has done this by adopting Impaq's cost assessment for the Capital Expenditure Category as the '*commercial standard*' for that Category.

However, Impaq's cost assessments are not said by it to be assessments of the expenditure that would be incurred exercising that degree of prudence that would ordinarily and reasonably be exercised by a hypothetical business engaged in commerce in the circumstance and the Impaq Report discloses that its cost assessments are not assessments of that kind.

Impaq's cost assessments are premised on its views on the activities and expenditure it considers to be '*required*' or '*needed*' or '*justified*' or '*reasonable*', not the prudence of incurring expenditure. These views are, in turn, generally premised on its own view of the resourcing required (e.g. level and number of FTEs) for the activities and in the quantum assessed by Impaq as required or needed, and the unit cost(s) of that resourcing (e.g. salary rates, on-costs etc). Powercor Australia has identified only one

⁶³ See, for example, the references to the number of FTEs that 'is reasonable' at 168, the statement that 'an allowance for contract administration of 10 per cent is reasonable' at 172, the reference to 'a reasonable market rate for the work required' and to the number of FTEs that is 'reasonable' at 174, the repeated references to the expenditure on infrastructure that 'appears reasonable', 'is reasonable' and 'considered reasonable' at 179 and the reference to the number of vehicles that 'are a reasonable quantity' and the 'general equipment and test lab' costs 'appear[ing] reasonable' at 182.

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instance in which Impaq considered a matter of relevance to prudence in performing its cost assessment.⁶⁴

Impaq's cost assessments are, thus, best described as estimates of the expenditure it considers appropriate or reasonable. The language used in the Impaq report is consistent with this characterisation of its cost assessments.⁶⁵ Similarly, even if the AER's use of the word '*reasonable*' in assessing Powercor Australia's proposed capital expenditure does not reflect the application by it of a test of '*reasonable expenditure*', its use of that language in conveying Impaq's conclusions regarding that expenditure suggests that the AER shares this view as to the characterisation of Impaq's cost assessments.

In short, the Impaq Report does not provide an expert opinion on:

- The question raised for the AER's consideration by the statutory test of prudent expenditure (namely whether incurring the proposed operating expenditure involved a substantial departure from the standard of prudence that would ordinarily and reasonably be exercised by a business engaged in commerce in the circumstances); or
- The ancillary question of the '*commercial standard*' referred to in clause 5C.3(b)(iv) of the AMI Cost Recovery Order that is to be applied in assessing proposed expenditure (namely the standard of prudence that would ordinarily and reasonably be exercised by a business engaged in commerce in the circumstances).

At no point in the Impaq Report does Impaq set out any opinion on either of these matters.

In applying Impaq's cost assessments as the '*commercial standard*', the AER either misconstrues the statutory test or implicitly assumes that Impaq's assessments represent the standard of prudence that would ordinarily and reasonably be exercised by a business engaged in commerce in the circumstances. The AER does not consider whether, in fact, Impaq's assessments do so or provide any basis for a conclusion that those assessments are indicative of this standard of prudence. Having regard to the character of Impaq's cost assessments, the AER's implicit assumption is incorrect.

It follows that the AER has made an error or errors of law and/or fact in construing and applying the statutory test under the AMI Cost Recovery Order.

⁶⁴ Impaq Report at 91. In assessing the installation cost per access point or relay in assessing costs for the communications equipment installation - other costs Capital Expenditure Category, Impaq recognised that a greater installation cost per device than that which a contractor may charge may be expected if Powercor Australia were to perform the installation in-house to mitigate risk.

⁶⁵ See, for example, the Impaq Report at 6, where Impaq sets out those elements of the DNSPs' proposed expenditure in respect of which the Impaq Report 'does not include assessment of the reasonableness or otherwise of the DNSP's [sic] proposals' [underlining emphasis added], and at 95, where Impaq concludes that Powercor Australia's proposed expenditure for General equipment and test lab 'appears reasonable'.

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As a consequence of these errors, the AER's conclusions on Powercor Australia's proposed capital expenditure are based on an inquiry that diverges from that required by the AMI Cost Recovery Order in the following respects:

- The AER's inquiry is as to the appropriate or reasonable expenditure, Impaq's assessments of which are adopted by the AER as the '*commercial standard*', whereas the AMI Cost Recovery Order mandates an inquiry as to the prudence of incurring Powercor Australia's proposed capital expenditure; and
- The AER's inquiry is as to the *quantum* of expenditure, specifically the quantum of the appropriate or reasonable expenditure, whereas the AMI Cost Recovery Order mandates an inquiry as to the *incurring* of the proposed expenditure, i.e. the decision or commitment to incur the proposed expenditure.

Also as a consequence of these errors, the AER has taken into account irrelevant considerations (i.e. the quantum of the appropriate or reasonable expenditure and considerations of relevance to that matter) and failed to take into account relevant considerations (i.e. the prudence of incurring Powercor Australia's proposed expenditure and considerations of relevance to that matter).

Relevance of AER's views on limitations or deficiencies in available information

Perhaps in an attempt to explain the discrepancy between the inquiry performed by the AER and that mandated by the AMI Cost Recovery Order, the AER states that it has '*based its assessment on the information available to it*'.⁶⁶

In this Amended Application, Powercor Australia has endeavoured to provide the AER with the information identified in its Draft Decision, together with that information which Powercor Australia considers will assist in the proper application of the statutory test of prudent expenditure prescribed by the AMI Cost Recovery Order.

Powercor Australia observes, however, that it is not permissible for the AER to apply a test other than the statutory test prescribed by the AMI Cost Recovery Order for the reason that the AER considers there are limitations or deficiencies in the information available to it. Nor is it open to the AER to reject Powercor Australia's proposed capital expenditure on the basis that, by reason of such a view, the AER cannot be satisfied that incurring the proposed expenditure is prudent. The AER must apply the statutory test of prudent expenditure prescribed by the AMI Cost Recovery Order, and not some other test of its own devising, and, in so doing, it must establish that the proposed expenditure does not satisfy that statutory test if it is to reject Powercor Australia's proposed capital expenditure.

If the AER considers that it does not have the information available to it to properly apply the statutory test prescribed by the Order, the only correct and appropriate course open to the AER is for it to seek additional information from the business. It is not open to the AER to instead reject Powercor Australia's proposed capital expenditure

⁶⁶ Draft Decision at 167.

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by establishing a benchmark for comparison on the basis of its consultant's opinion that differs from that prescribed by the AMI Cost Recovery Order.

Additional error by AER

In rejecting Powercor Australia's proposed capital expenditure, the AER relies on the Impaq Report to establish that the proposed expenditure is not prudent. In addition to the errors of law and/or fact made by the AER in adopting Impaq's cost assessments as the '*commercial standard*' discussed above, the AER makes further errors of law and/or fact in relying on the Impaq report to establish the proposed expenditure is not prudent.

As discussed above, Impaq's cost assessment for every one of the Capital Expenditure Categories is based on, at least some, factual findings and/or assumptions made by Impaq but not substantiated by it. Impaq does not provide any basis for those findings and assumptions or identify the material on which it has relied in making those findings and assumptions.

Powercor Australia considers that for this reason:

- The Impaq report does not establish that its proposed expenditure for the Capital Expenditure Categories is not prudent and, to the extent that the AER finds that it does, the AER makes a factual error;
- The AER's failure to take these matters into account in making its decision on the weight to accord Impaq's findings and conclusions is an error of law; and/or
- The AER has made other errors of fact and/or law in, or as a consequence of, according significant and determinative weight to Impaq's findings and conclusions.

Further, these matters hinder Powercor Australia's ability to respond to Impaq's findings and conclusions. For this reason also, Powercor Australia submits that the AER should accord lesser weight to Impaq's findings and conclusions in its final decision.

Notwithstanding the AER's errors in the application of the AMI Cost Recovery Order discussed above, Powercor Australia has sought to address in the remainder of this section 7 the matters that the AER raised about whether Powercor Australia's capital expenditure forecast are consistent with the commercial standard.

7.2 Exchange rate

As detailed in Powercor Australia's Initial Budget Application, the majority of the AMI communications technology and meter supply costs are purchased in United States dollars (**USD**). Powercor Australia addresses the risk of an increase in costs due to adverse movements in the AUD/USD exchange rate by entering into foreign exchange rate hedging contracts.

7.2.1 AER's Draft Determination

The Draft Determination rejected Powercor Australia's proposed exchange rate assumptions on the basis it was not of a '*commercial standard*' in that it:

- Did not reflect the recent appreciation in the Australian dollar (AUD); and
- Did not reflect any hedge rates that were currently available in the money market.

The Draft Determination proceeded to replace the exchange rates proposed by the Business with a '*1 month historical swap rate*' from Bloomberg at 1.04 AUD to United States dollars (USD). A footnote in the Draft Determination further describes the 1.04 AUD to USD assumption as being based on a '*1 month average swap rate at 28 June 2011 and maturing at 30 November*'.

7.2.2 Powercor Australia's Amended Application

The Draft Determination in adopting its exchange rate assumption, has proceeded on a number of incorrect basis that mean it does not represent a '*commercial standard*'.

Firstly, Bloomberg is a computer system that provides financial market data including current and historical pricing. It is not a trading system. You cannot transact with Bloomberg, and as such the pricing does not accurately reflect executable pricing in the foreign exchange market.

Secondly, the alternative rate the AER provides is based on historical rates, and as such, the rate is essentially '*backward looking*'. The recent sizeable volatility in the AUD/USD exchange rate is a clear indication that historical rates are not a reliable measure of future exchange rates and hence forward foreign exchange rates are the market convention.

A forward foreign exchange is a contract to set today, an exchange rate that will apply to a certain principal at a specified future period of time. The forward exchange rate is calculated by adjusting the current market rate (spot rate) for '*forward points*'. These points are calculated using a formula which takes into account the difference in interest rates between the two currencies and the time to maturity.

The Australian Financial Market Association (AFMA) released a paper on Foreign Exchange Conventions which details industry accepted conventions that reflect current market practices. This paper lists a Forward FX Transaction as the appropriate product for the purchase of foreign exchange at a future date.

As detailed in the Business' Initial Budget Application, the majority of the AMI communications technology and meter costs are purchased in USD. Powercor Australia addresses the risk of an increase in costs due to adverse movements in the AUD/USD exchange rate by executing competitively tendered forward foreign exchange rate hedging contracts.

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Under the AMI rollout deployment profile meters are purchased monthly, to effectively hedge the USD exposure this creates. Hedging contracts are executed in line with deployment. The most effective tool to hedge these monthly exposures is a series of foreign exchange forward rate contracts.

The table below details the AUD/USD forward foreign exchange rates on a monthly basis for years 2012 and 2013 that are currently available in the foreign exchange market at the date and time specified.

Date	AUD/USD forward rate	Date	AUD/USD forward rate
16-Jan-12	1.0234	15-Jan-13	0.9893
15-Feb-12	1.0205	15-Feb-13	0.9862
15-Mar-12	1.0179	15-Mar-13	0.9834
16-Apr-12	1.0152	15-Apr-13	0.9803
15-May-12	1.0126	15-May-13	0.9773
15-Jun-12	1.0098	17-Jun-13	0.9740
16-Jul-12	1.0071	15-Jul-13	0.9712
15-Aug-12	1.0045	15-Aug-13	0.9681
17-Sep-12	1.0013	16-Sep-13	0.9649
15-Oct-12	0.9985	15-Oct-13	0.9618
15-Nov-12	0.9955	15-Nov-13	0.9586
17-Dec-12	0.9922	16-Dec-13	0.9553
Weighted average	1.0082		0.9725

Table 7 - Monthly AUD/USD foreign exchange forward rates (as at 22 August 2011 supplied by National Australia Bank)

The forecast exchange rates for 2014 and 2015 assumed by the Business are 0.9420 for 2014 and 0.9090 for 2015. These exchanges rates have also been acquired through National Australia Bank on 24 August 2011.

The Business considers the '*commercial standard*' referred to in the Draft Determination should reflect the forward foreign exchange rates that are currently available in the foreign exchange market rather than a '*1 month historical swap rate from Bloomberg*'.

Finally the Business would note given current market volatility, it is probable further significant variations may occur between the exchange rates assumed in this Revised Budget Application and the Final Decision. As such, the Business seeks the AER's agreement for it to submit revised exchange rate assumptions in the 2 weeks prior to the Final Determination. The AER's inability to access the providers of forward foreign exchange rates or understand of the USD cash requirements of the Business make it essential a further opportunity is provided update the exchange rate assumptions.

7.3 Meter supply - non-contract capital expenditure

7.3.1 AER's Draft Determination

Nature of Expenditure

In its Draft Determination⁶⁷, having regard for advice from Impaq⁶⁸, the AER assessed that Meter Supply – Non-Contract Capital Expenditure relates to the management of contracts and logistics for meter supply and these costs would be comprised mainly of staffing expenses.

Powercor Australia does not agree with the AER's assessment of the nature of this expenditure and does not consider that it provides an appropriate basis for determining the 'commercial standard'. The AER has misunderstood how Powercor Australia has built up its Meter Supply – Non-Contract Capital Expenditure. This expenditure relates to both AMI rollout and BAU meter supply.

Figure 7 illustrates how Powercor Australia has built up its AMI rollout Meter Supply – Non-Contract Capital Expenditure.

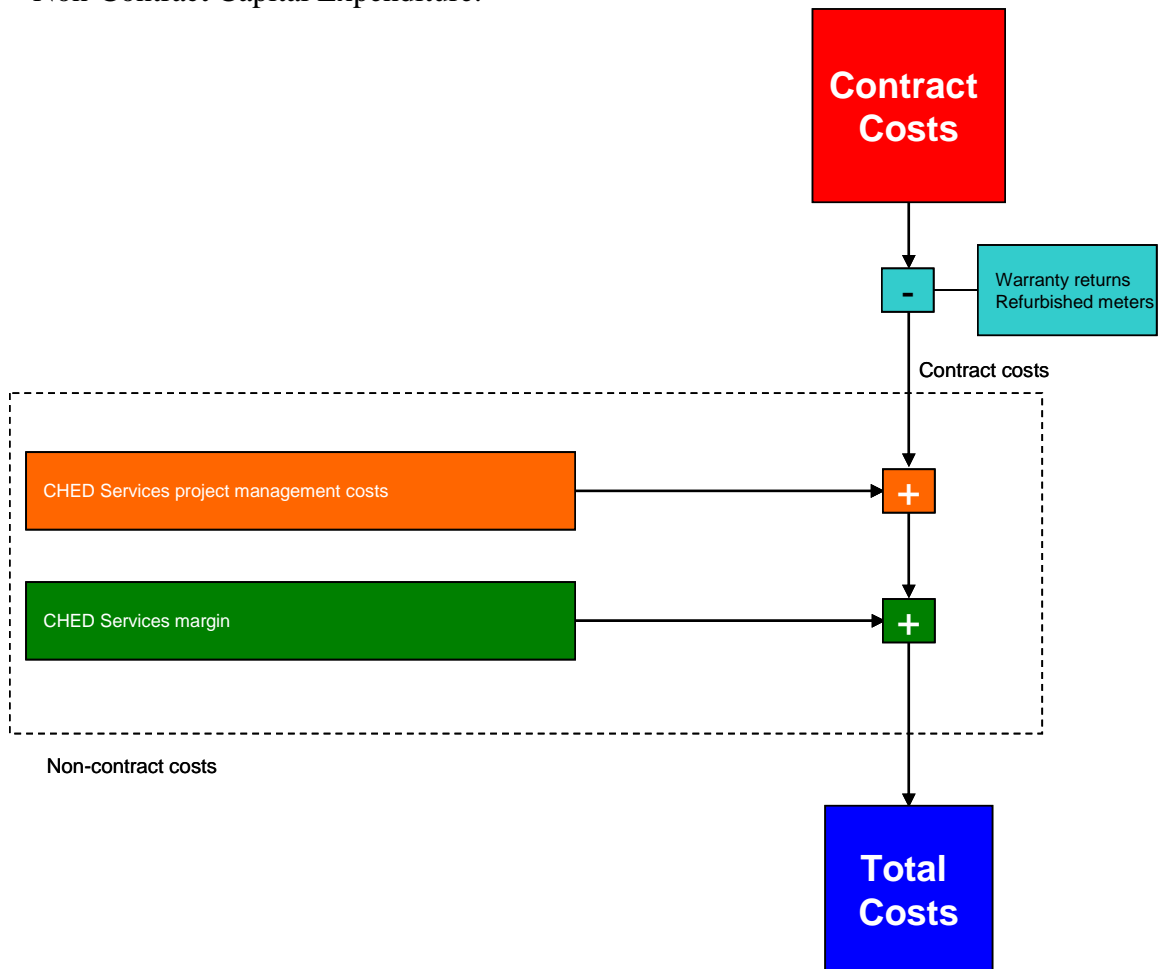


Figure 7 – AMI rollout meter supply – non-contract capital expenditure

⁶⁷ Refer page 168 of Draft Determination

⁶⁸ Refer pages 17-18 and 84-85 of the Impaq report

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Figure 8 illustrates how Powercor Australia has built up its BAU Meter Supply – Non-Contract Capital Expenditure.

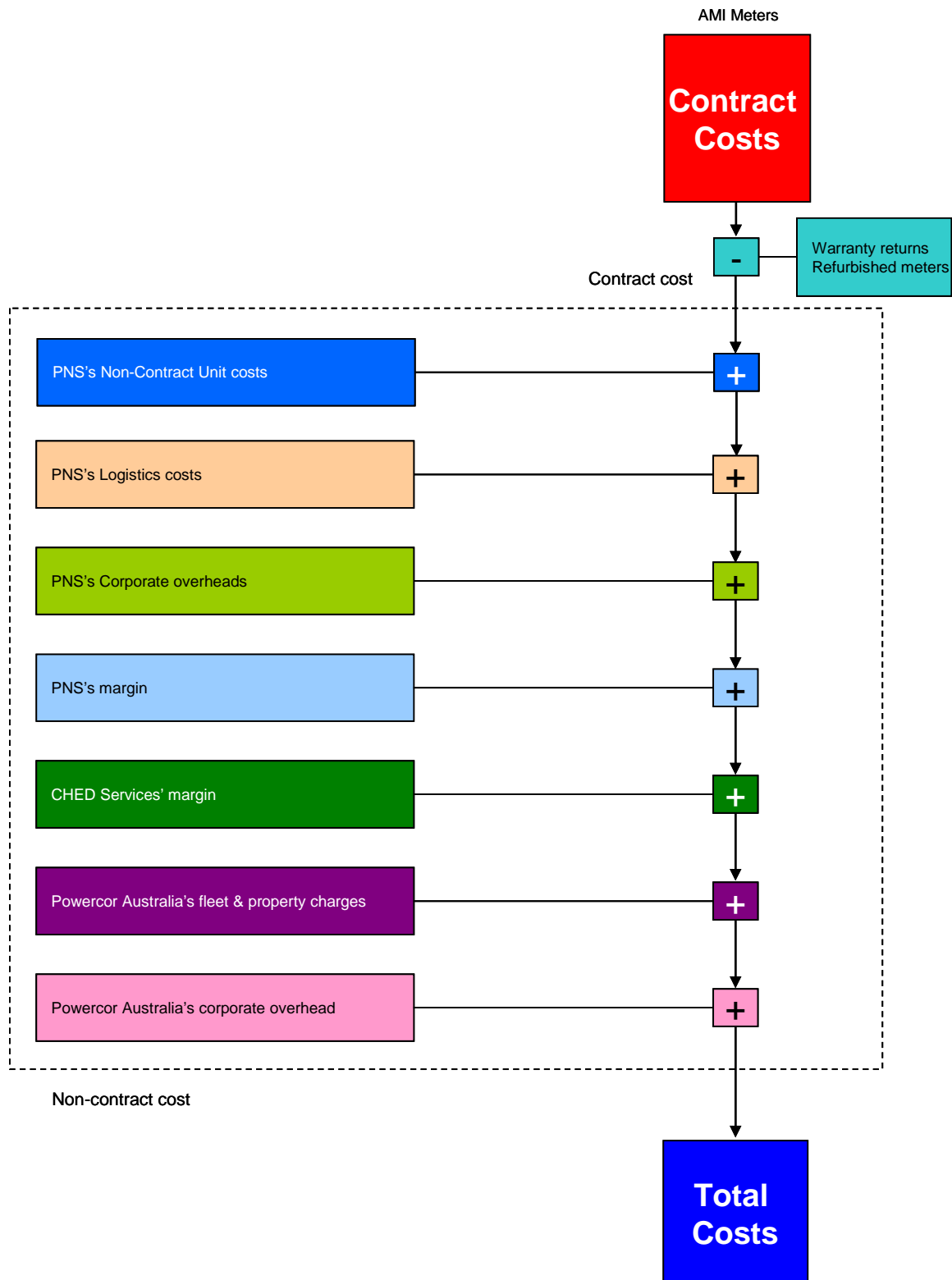


Figure 8 – BAU meter supply – non-contract capital expenditure

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Section 7.3.2 describes each of the components of expenditure illustrated in these figures.

Explanation of proposed expenditure

In its Draft Determination⁶⁹, having regard for advice from Impaq⁷⁰, the AER assessed that Powercor Australia has not sufficiently explained its proposed Meter Supply – Non-Contract Capital Expenditure.

Powercor Australia has sought to address the AER's concerns through this Amended Application, including through the models that accompany this Amended Application.

Departure from the 'commercial standard'

In its Draft Determination⁷¹, having regard for advice from Impaq⁷², the AER assessed that the number of FTEs that Powercor Australia's proposed expenditure could cover is excessive and is a substantial departure from the 'commercial standard that a reasonable business would exercise in its circumstances'.

Powercor Australia does not agree with the AER's assessment. The scope of Powercor Australia's Meter Supply – Non-Contract Capital Expenditure is fundamentally different to what Impaq and the AER have assumed. As a result, the approach that Impaq and the AER have used for calculating Meter Supply – Non-Contract Capital Expenditure is not representative of what is included in Powercor Australia's expenditure or how it should be built up in this item.

To address this, Powercor Australia has explained in section 7.3.2 below how it has developed its Meter Supply – Non-Contract Capital Expenditure and its accompanying model provides a transparent build up of each component of expenditure and an explanation of Powercor Australia's assumptions.

7.3.2 Powercor Australia's Amended Application

Table 8 details Powercor Australia's revised Meter Supply – Non-Contract Capital Expenditure forecast and also details the forecasts in its Initial Budget Application and the AER's Draft Determination.

	2012	2013	2014	2015	Total
Powercor Australia Initial Budget Application	4,697	3,986	1,140	1,085	10,907
AER Draft Determination	300	300	300	300	1,200
Powercor Australia Amended Application	6,247	5,382	2,564	2,573	16,766

Table 8 – Comparison of meter supply – non-contract capital expenditure (\$'000s, 2011 Real)

⁶⁹ Refer page 168 of Draft Determination

⁷⁰ Refer pages 17-18 and 84-85 of the Impaq report

⁷¹ Refer page 168 of Draft Determination

⁷² Refer pages 17-18 and 84-85 of the Impaq report

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Powercor Australia's revised Meter Supply – Non-Contract Capital Expenditure includes components for AMI rollout and BAU. Powercor Australia considers that these revised forecasts will be incurred and are consistent with the '*commercial standard that a reasonable business would exercise in its circumstances*' for the purposes of clause 5C.3(b)(iv) of the AMI Cost Recovery Order.

AMI rollout meter supply – non-contract capital expenditure

Powercor Australia's AMI rollout Meter Supply – Non-Contract Capital Expenditure includes:

- CHED Services' project management costs – these are a share of the costs of CHED Services' project management of the AMI rollout, which have been split between meter and communications supply and installation; and
- CHED Services' Margin – this margin is charged to Powercor Australia under the *Meter and Field Services Contract*:
 - The margin on CHED Services' management of the meter supply external service provider is charged at a rate of ■■■ per cent on the contract costs for Meter Supply – Contract Capital Expenditure; and
 - The margin on services that CHED Services provides itself is charged at a rate of ■■■ per cent on CHED Services' project management costs.

Section 3.3.3 justifies the levels of each of the margins that Powercor Australia has applied in determining its AMI rollout Meter Supply – Non-Contract Capital Expenditure.

The model entitled *Powercor meter & comms capex.xls* and Attachment 1 set out in detail how Powercor Australia has calculated each component of this non-contract capital expenditure forecast for 2012-15.

BAU meter supply – non-contract capital expenditure

Powercor Australia's BAU Meter Supply – Non-Contract Capital Expenditure includes:

- PNS's non-contract unit costs – these are the costs of PNS's Metering Installation Group undertaking BAU meter supply for Powercor Australia;
- PNS's logistics costs relating to meter supply – these logistics services are provided by PNS to CHED Services in relation to BAU meter supply for Powercor Australia;
- PNS's corporate overheads – these are a share of PNS's corporate overheads for the provision of services to CHED Services in relation to BAU meter supply for Powercor Australia;

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- PNS's margin – this margin is charged at a rate of ■ per cent on PNS's logistics costs and corporate overheads;
- CHED Services' margin – this margin is charged to Powercor Australia under the *Meter and Field Services Contract*. The margin on services that CHED Services receives from the meter supply services provider is charged at a rate of ■ per cent on the contract costs for Meter Supply – Contract Capital Expenditure;
- Powercor Australia's fleet and property charges – these costs are the 2010 Fleet and Property costs allocated to metering services in Powercor Australia's 2010 Regulatory Accounts with escalation applied consistent with the AER's 2011-15 Electricity Distribution Final Determination; and
- Powercor Australia's corporate overhead – these costs are the 2010 corporate overhead costs allocated to metering services in Powercor Australia's 2010 Regulatory Accounts with escalation applied consistent with the AER's 2011-15 Electricity Distribution Final Determination. For further details refer to section 12 of Attachment 1.

Section 3.3.3 justifies the levels of each of the margins that Powercor Australia has applied in determining its BAU Meter Supply – Non-Contract Capital Expenditure.

The model entitled *Powercor meter & comms capex.xls* and Attachment 1 set out in detail how Powercor Australia has calculated each component of this non-contract capital expenditure forecast for 2012-15.

7.4 Meter installation - non-contract capital expenditure

7.4.1 AER's Draft Determination

Nature of Expenditure

In its Draft Determination⁷³, the AER assessed that Meter Installation – Non-Contract Capital Expenditure relates to call centre support, customer communications, meter deliveries to contractors, transport and storage of removed meters, meter seals and fuse sticks and installation contract management and installation issues management.

Powercor Australia does not agree with the AER's assessment and does not consider that it provides an appropriate basis for determining the '*commercial standard*'. The AER has misunderstood how Powercor Australia has built up its Meter Installation – Non-Contract Capital Expenditure. This expenditure does not relate to call centre support or customer communications.

Meter Installation – Non-Contract Capital Expenditure relates to non-contract meter installation expenditure for both AMI rollout and BAU meter installation.

⁷³ Refer page 170 of Draft Determination

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Figure 9 illustrates how Powercor Australia has built up its AMI rollout Meter Installation – Non-Contract Capital Expenditure.

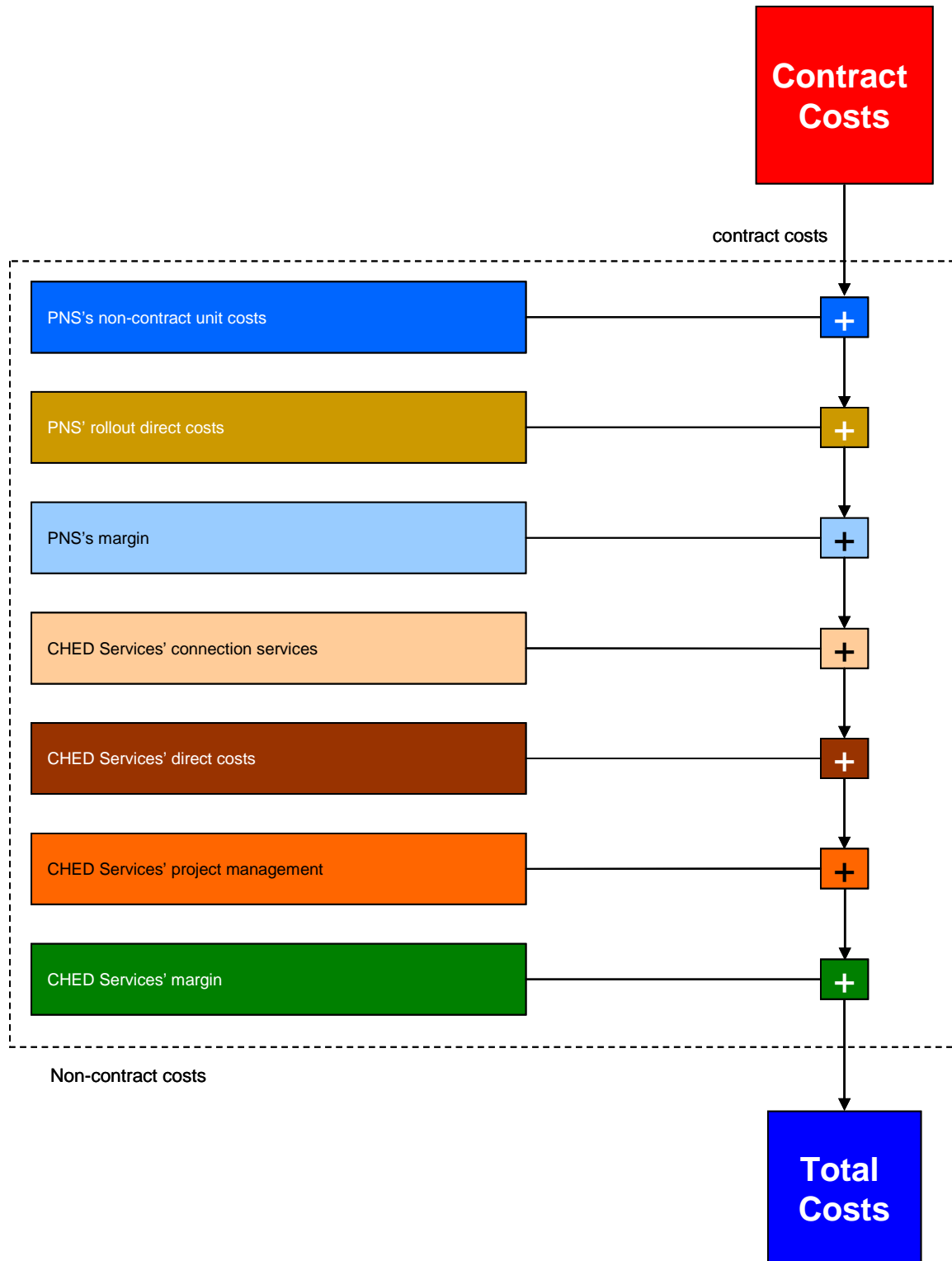


Figure 9 – AMI rollout meter installation – non-contract capital expenditure

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Figure 10 illustrates how Powercor Australia has built up its BAU Meter Installation – Non-Contract Capital Expenditure.

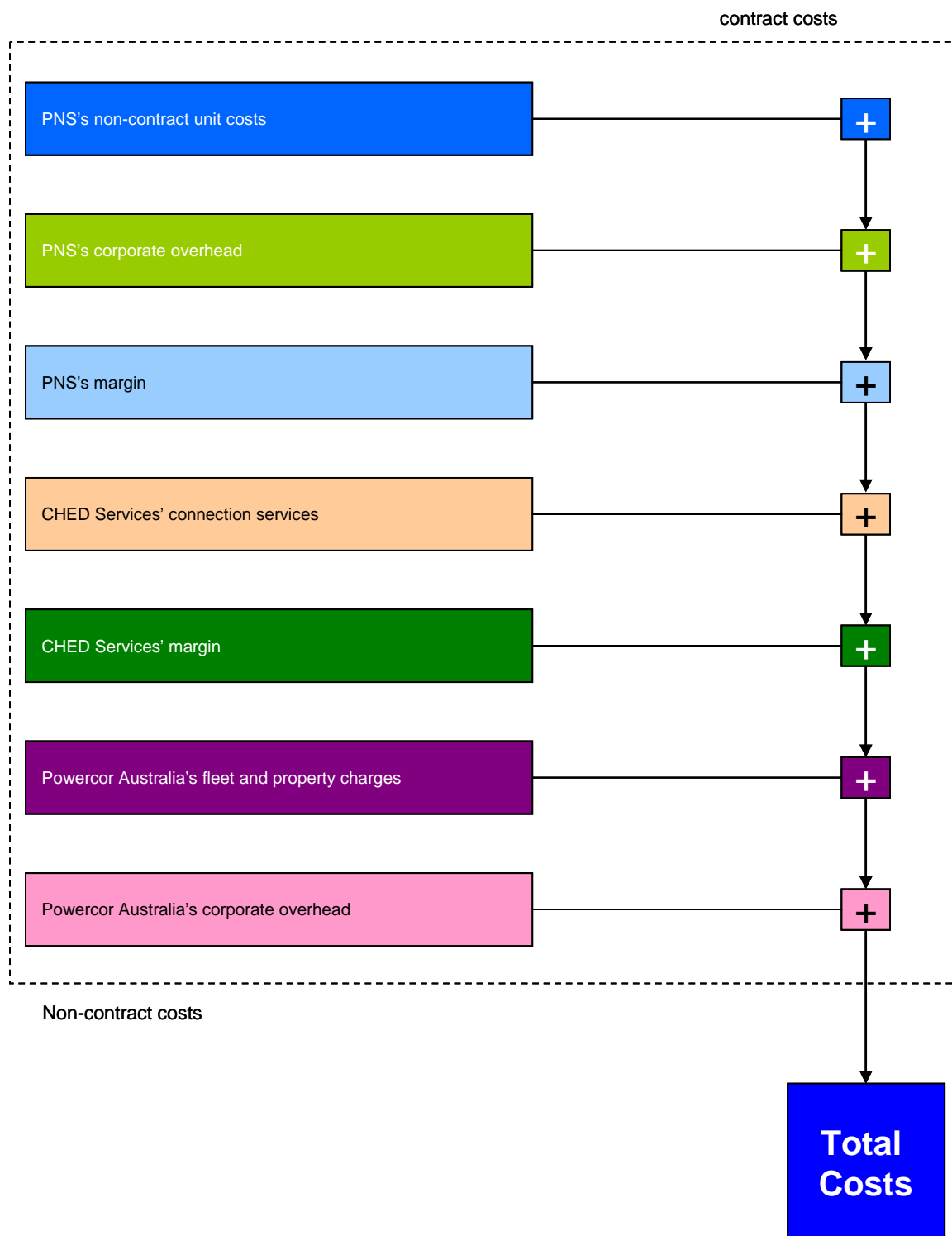


Figure 10 – BAU meter installation – non-contract capital expenditure

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Section 7.4.2 describes each of these components of expenditure illustrated in these figures.

Explanation of proposed expenditure

In its Draft Determination⁷⁴, the AER assessed that Powercor Australia has not sufficiently explained its proposed Meter Installation – Non-Contract Capital Expenditure.

Powercor Australia has sought to address the AER's concerns through this Amended Application, including through the models that accompany this Amended Application.

Recovery through Alternative Control Services

In its Draft Determination⁷⁵, having regard for advice from Impaq⁷⁶, the AER considers that the installation cost of BAU metering is already recovered through Alternative Control Services for new connections and meter changes.

Powercor Australia did not include installation costs for new meters in its Meter Installation – Non-Contract Capital Expenditure. As discussed in section 4.1 on meter installation volumes, Powercor Australia always intended that new meter installation costs would be recovered through Alternative Control Services' charges and it reflected this into its Initial Budget Application.

Powercor Australia has removed costs relating to customer initiated additions and alterations from its revised Business As Usual (BAU) Meter Installation – Non-Contract Capital Expenditure, which were included in this item in its Initial Budget Application.

Powercor Australia's BAU Meter Installation - Non-Contract Capital Expenditure relates to meter installations for matters such as faults which are not an Alternative Control Service. These costs are not recovered through Alternative Control charges and therefore need to be included in this expenditure category.

Expenditure in 2014-15

In its Draft Determination⁷⁷, having regard for advice from Impaq⁷⁸, the AER considers that there should be no BAU Meter Installation - Non-Contract Capital Expenditure for 2014-15 as the rollout should be completed by the end of 2013.

⁷⁴ Refer page 170 of Draft Determination

⁷⁵ Refer page 170 of Draft Determination

⁷⁶ Refer pages 21-23 and 86-89 of the Impaq report

⁷⁷ Refer page 170 of Draft Determination

⁷⁸ Refer pages 21-23 and 86-89 of the Impaq report

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Powercor Australia does not agree with the AER's assessment. Powercor Australia considers that BAU Meter Installation – Non-Contract Capital Expenditure will be required in 2014-15 in relation to faults and a limited number of non-AMI meters and that this should be included in this expenditure category.

7.4.2 Powercor Australia's Amended Application

Table 9 details Powercor Australia's revised Meter Installation – Non-Contract Capital Expenditure forecast and also details the forecasts in its Initial Budget Application and the AER's Draft Determination.

	2012	2013	2014	2015	Total
Powercor Australia Initial Budget Application	20,886	17,462	2,494	2,487	43,328
AER Draft Determination	1,877	1,513	-	-	3,390
Powercor Australia Amended Application	14,083	12,369	1,791	1,859	30,102

Table 9 – Comparison of meter installation – non-contract capital expenditure (\$'000s, 2011 Real)

Powercor Australia's revised Meter Installation – Non-Contract Capital Expenditure includes components for AMI rollout and BAU. Powercor Australia considers that these revised forecasts will be incurred and are consistent with the '*commercial standard that a reasonable business would exercise in its circumstances*' for the purposes of clause 5C.3(b)(iv) of the AMI Cost Recovery Order.

AMI rollout meter installation – non-contract capital expenditure

Powercor Australia's AMI rollout Meter Installation – Non-Contract Capital Expenditure includes:

- PNS's non-contract unit costs – these are the costs of PNS's Metering Installation Group undertaking specialist AMI meter installations;
- PNS's rollout direct costs – these are other costs related to PNS undertaking meter installations and include field management, quality assurance, training and the supply of miscellaneous materials, such as meter panels, contactors, seals and consumables;
- PNS's margin – this margin is charged at a rate of ■ per cent on PNS's non-contract unit costs and rollout direct costs;
- CHED Services' connection services – these are the meter exchange processing costs of CHED Services' Connection Services Group;
- CHED Services' direct costs – these are the costs of deployment planning management provided by CHED Services under the *Meter and Field Services Contract*;

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- CHED Services' project management costs – these are a share of the costs of CHED Service's project management of the AMI rollout, which have been split between meter and communications supply and installation; and
- CHED Services' Margin – this margin is charged to Powercor Australia under the *Meter and Field Services Contract*:
 - The margin on services that CHED Services receives from PNS is charged at a rate of ■ per cent on PNS's costs; and
 - The margin on services that CHED Services provides itself is charged at a rate of ■ per cent on CHED Services' costs.

Section 3.3.3 justifies the levels of each of the margins that Powercor Australia has applied in determining its AMI rollout Meter Installation – Non-Contract Capital Expenditure.

The model entitled *Powercor meter & comms capex.xls* and Attachment 1 set out in detail how Powercor Australia has calculated each component of this non-contract capital expenditure forecast for 2012-15.

BAU meter installation – non-contract capital expenditure

Powercor Australia's BAU Meter Installation – Non-Contract Capital Expenditure relates to:

- PNS's non-contract unit costs – these are the costs of PNS undertaking meter installations, such as for faults and non-AMI meters;
- PNS's corporate overheads – these are a share of PNS's corporate overheads for the provision of services to CHED Services in relation to BAU meter installation for Powercor Australia;
- PNS's margin – this margin is charged at a rate of ■ per cent on PNS's non-contract unit costs and corporate overheads;
- CHED Services' connection services – these are the meter exchange processing costs of CHED Services' Connection Services Group;
- CHED Services' Margin – this margin is charged to Powercor Australia under the *Meter and Field Services Contract*:
 - The margin on services that CHED Services receives from PNS is charged at a rate of ■ per cent on PNS's costs; and
 - The margin on services that CHED Services provides itself is charged at a rate of ■ per cent on CHED Services' costs.

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- Powercor Australia's fleet and property overhead - these costs represent the 2010 Fleet and Property costs allocated to metering services in Powercor Australia's 2010 Regulatory Accounts with escalation applied consistent with the AER's 2011-15 Electricity Distribution Final Determination; and
- Powercor Australia's corporate overhead – these costs represent the 2010 corporate overhead costs allocated to metering services in Powercor Australia's 2010 Regulatory Accounts with escalation applied consistent with the AER's 2011-15 Electricity Distribution Final Determination. For further details refer to section 12 of Attachment 1.

Section 3.3.3 justifies the levels of each of the margins that Powercor Australia has applied in determining its BAU Meter Installation – Non-Contract Capital Expenditure.

The model entitled *Powercor meter & comms capex.xls* and Attachment 1 set out in detail how Powercor Australia has calculated each component of this non-contract capital expenditure forecast for 2012-15.

7.5 Communications supply – non-contract capital expenditure

7.5.1 AER's Draft Determination

In its Draft Determination⁷⁹, having regard for advice from Impaq⁸⁰, the AER assessed that CHED Services is charging Powercor Australia in excess of an 8 per cent margin on top of the Communications Supply contract costs and this is not consistent with the '*commercial standard*'.

Powercor Australia does not agree with the AER's assessment and does not consider that it provides an appropriate basis for determining the '*commercial standard that a reasonable business would exercise in its circumstances*'. The AER has misunderstood how Powercor Australia has developed its Communications Supply – Non-Contract Capital Expenditure.

Communications Supply – Non-Contract Capital Expenditure relates to non-contract communications supply expenditure for both AMI rollout and BAU Communications.

Figure 11 illustrates how Powercor Australia has built up its AMI rollout Communications Supply – Non-Contract Capital Expenditure.

⁷⁹ Refer page 172-173 of Draft Determination

⁸⁰ Refer pages 90-91 of the Impaq report

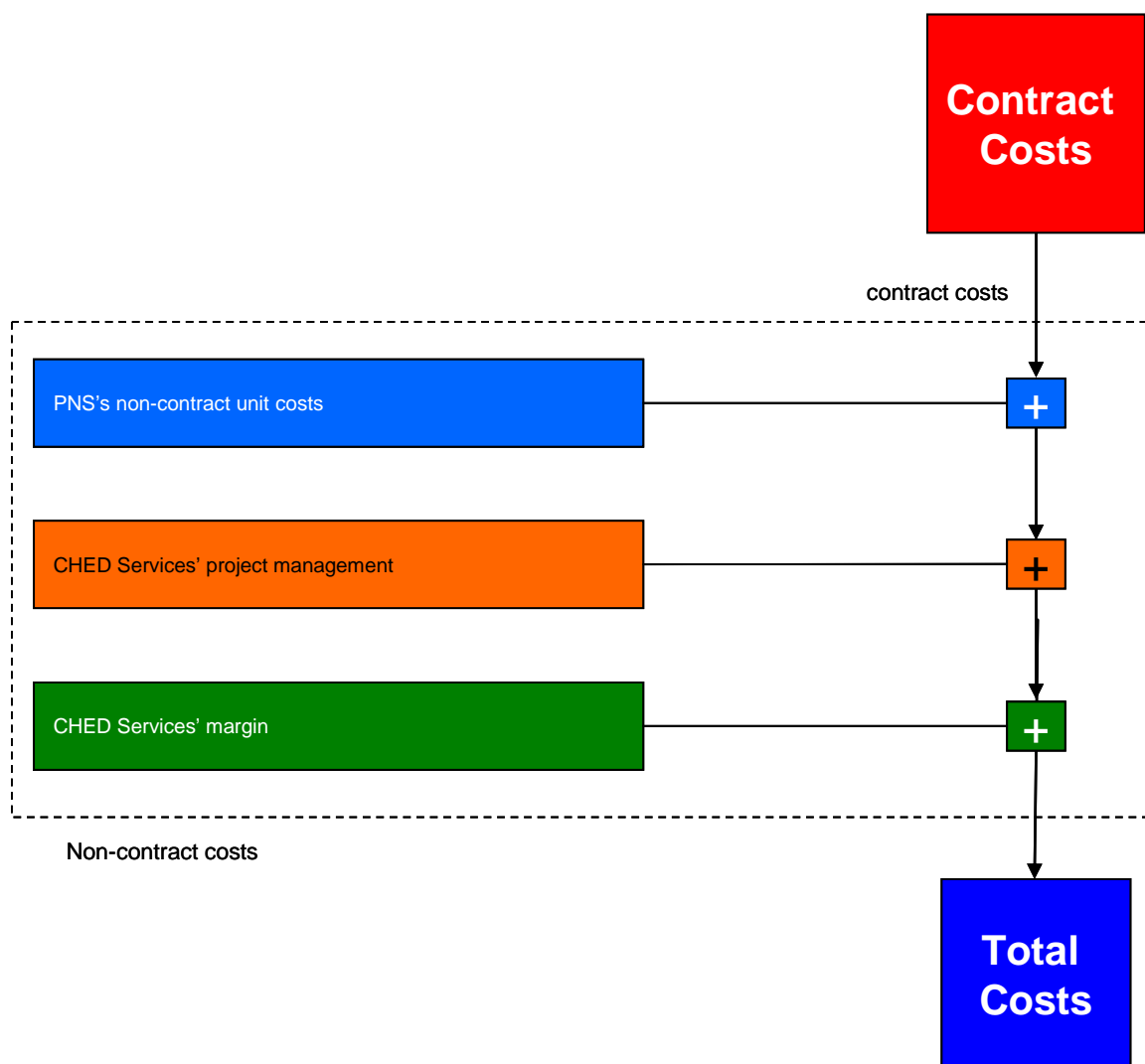


Figure 11 – AMI rollout communications supply – non-contract capital expenditure

Figure 12 illustrates how Powercor Australia has built up its BAU Communications Supply – Non-Contract Capital Expenditure.

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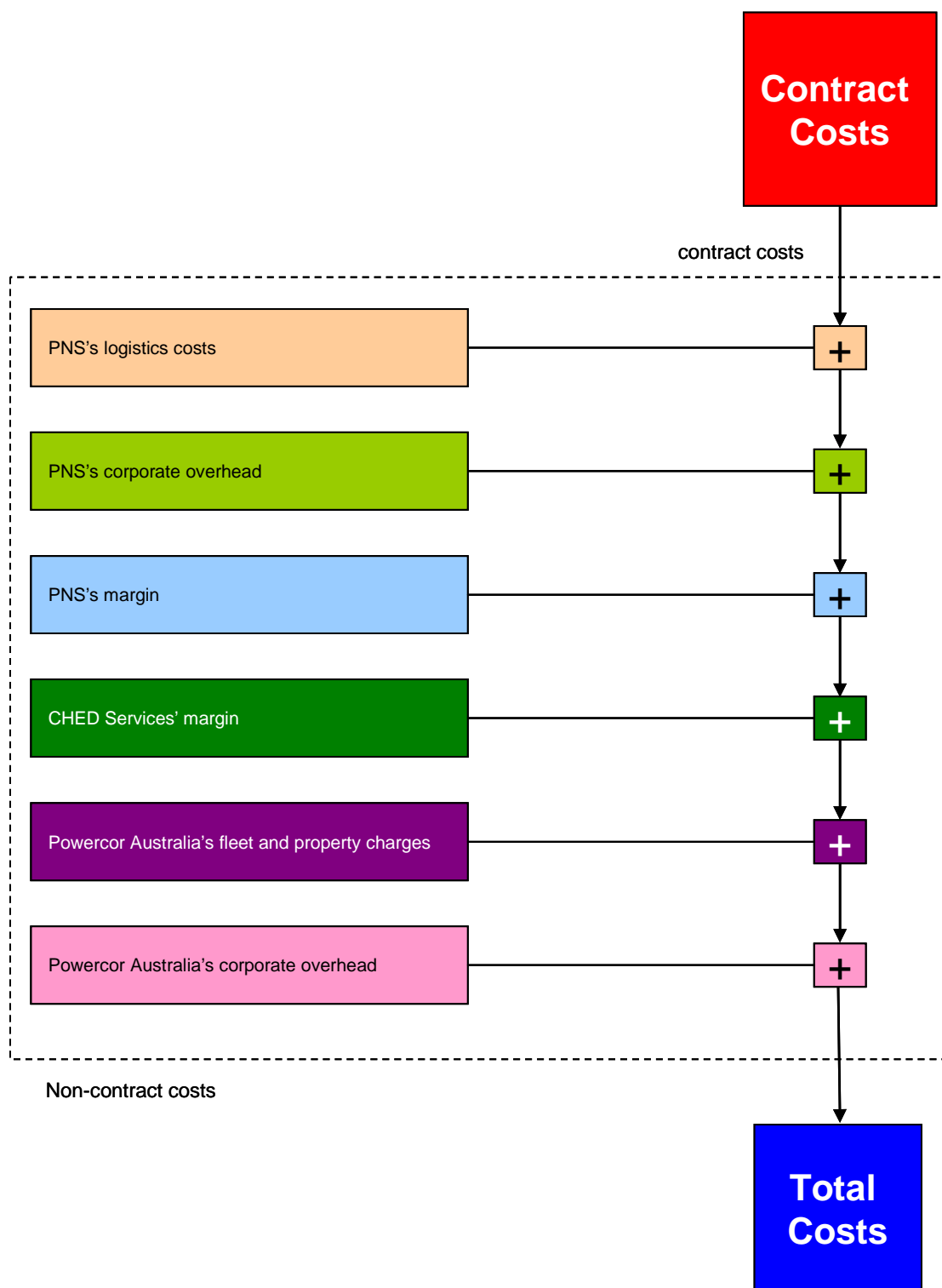


Figure 12 – BAU communications supply – non-contract capital expenditure

Section 7.5.2 describes each of these components of expenditure illustrated in these figures.

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7.5.2 Powercor Australia's Amended Application

Table 10 details Powercor Australia's revised Communications Supply – Non-Contract Capital Expenditure forecast and also details the forecasts in its Initial Budget Application and the AER's Draft Determination.

	2012	2013	2014	2015	Total
Powercor Australia Initial Budget Application	2,726	1,891	108	105	4,830
AER Draft Determination	222	2	3	3	230
Powercor Australia Amended Application	2,579	1,763	246	247	4,835

Table 10 – Comparison of communications supply – non-contract capital expenditure (\$'000s, 2011 Real)

Powercor Australia's revised Communications Supply – Non-Contract Capital Expenditure includes components for AMI rollout and BAU. Powercor Australia considers that these revised forecasts will be incurred and are consistent with the 'commercial standard that a reasonable business would exercise in its circumstances' for the purposes of clause 5C.3(b)(iv) of the AMI Cost Recovery Order.

AMI rollout communications supply – non-contract capital expenditure

Powercor Australia's AMI rollout Communications Supply – Non-Contract Capital Expenditure includes:

- PNS non-contract unit costs – these relate to the costs of ancillary AMI-related equipment that is purchased directly by PNS. This ancillary equipment includes meter antennas, 3G modems for meters and Public Switched Telephone Network (PSTN)/Satellite modems for meters. This equipment is required because of the lack of density of Powercor Australia's network and the requirement that every customer must receive an AMI meter. This equipment augments or replaces the meshed radio system in remote parts of Western Victoria where there are low levels of customer density;
- CHED Services' project management costs – these are a share of the costs of CHED Service's project management of the AMI rollout, which have been split between meter and communications supply and installation; and
- CHED Services' Margin – this margin is charged to Powercor Australia under the *Meter and Field Services Contract*:
 - The margin on services that CHED Services receives from PNS is charged at a rate of ■ per cent on PNS's costs; and
 - The margin on services that CHED Services provides itself is charged at a rate of ■ per cent on CHED Services' costs.

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Section 3.3.3 justifies the levels of each of the margins that Powercor Australia has applied to its AMI rollout Communications Supply – Non-Contract Capital Expenditure.

The model entitled *Powercor meter & comms capex.xls* and Attachment 1 set out in detail how Powercor Australia has calculated each component of this non-contract capital expenditure forecast for 2012-15.

BAU communications supply – non-contract capital expenditure

Powercor Australia's BAU Communications Supply – Non-Contract Capital Expenditure relates to:

- PNS's logistics – these logistics services are provided by PNS to CHED Services in relation to communications supply for Powercor Australia;
- PNS's corporate overheads – these are a share of PNS's corporate overheads for the provision of services to CHED Services in relation to communications supply for Powercor Australia;
- PNS's margin – this margin is charged at a rate of ■ per cent on PNS's logistics costs and corporate overheads;
- CHED Services' Margin – this margin is charged to Powercor Australia under the *Meter and Field Services Contract* at a rate of ■ per cent on PNS's costs;
- Powercor Australia's fleet and property overhead - these costs represent the 2010 Fleet and Property costs allocated to metering services in Powercor Australia's 2010 Regulatory Accounts with escalation applied consistent with the AER's 2011-15 Electricity Distribution Final Determination; and
- Powercor Australia's corporate overhead – these costs represent the 2010 corporate overhead costs allocated to metering services in Powercor Australia's 2010 Regulatory Accounts with escalation applied consistent with the AER's 2011-15 Electricity Distribution Final Determination. For further details refer to section 12 of Attachment 1.

Section 3.3.3 justifies the levels of each of the margins that Powercor Australia has applied to its BAU Communications Supply – Non-Contract Capital Expenditure.

The model entitled *Powercor meter & comms capex.xls* and Attachment 1 set out in detail how Powercor Australia has calculated each component of this non-contract capital expenditure forecast for 2012-15.

7.6 Communications installation - non-contract capital expenditure

7.6.1 AER's Draft Determination

In its Draft Determination⁸¹, having regard for advice from Impaq⁸², the AER assessed that Communications Installation – Non-Contract Capital Expenditure relates to access points and relays only.

The AER has misunderstood how Powercor Australia has built up its Communications Installation – Non-Contract Capital Expenditure.

Communications Installation – Non-Contract Capital Expenditure relates to non-contract communications expenditure for the installation of both AMI rollout and BAU Communications.

Figure 13 illustrates how Powercor Australia has built up its AMI rollout Communications Installation – Non-Contract Capital Expenditure.

⁸¹ Refer page 172-173 of Draft Determination

⁸² Refer pages 25-26 and 91-92 of the Impaq report

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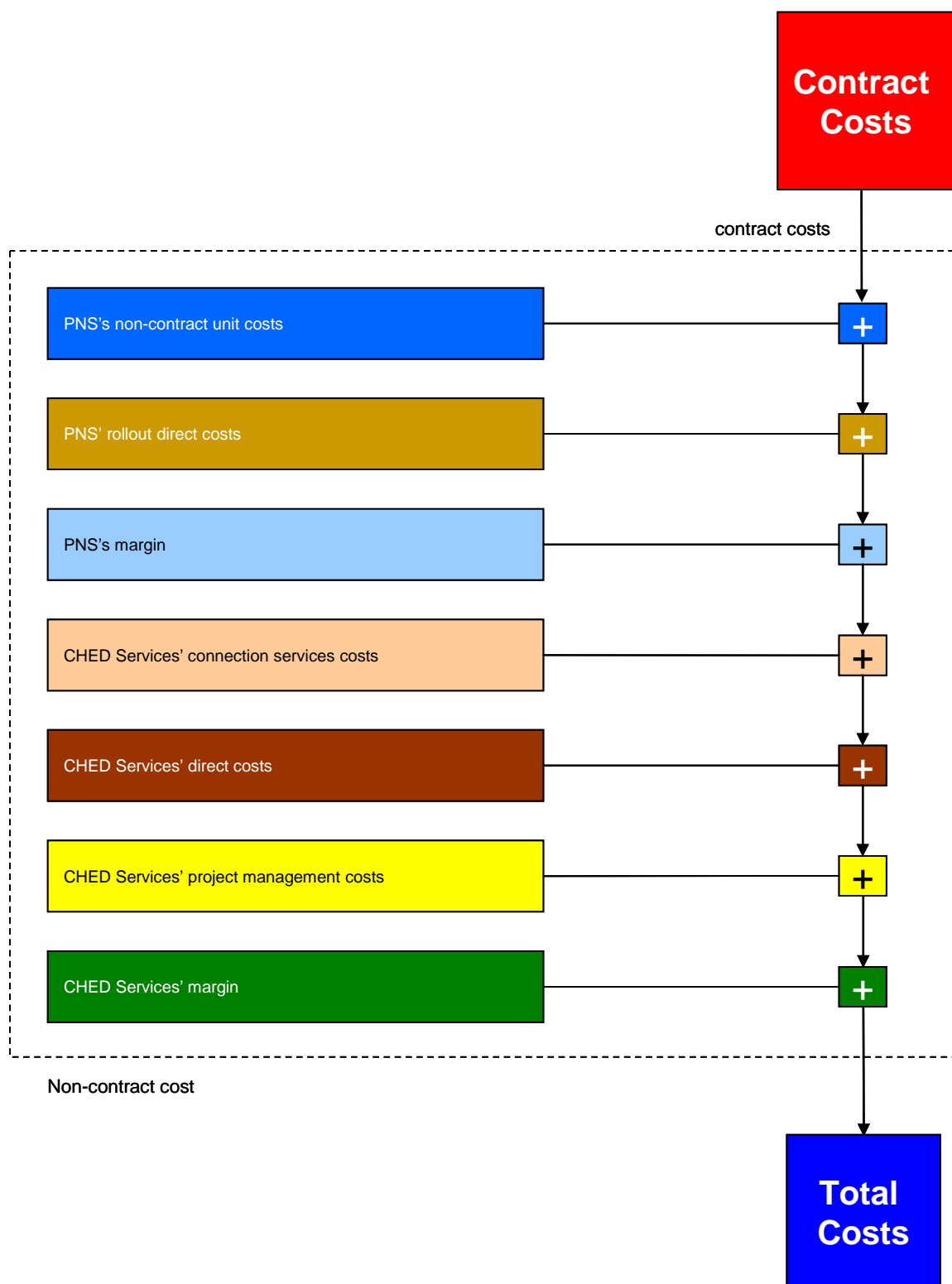


Figure 13 – AMI rollout communications installation – non-contract capital expenditure

Figure 14 illustrates how Powercor Australia has built up its BAU Communications Installation – Non-Contract Capital Expenditure.

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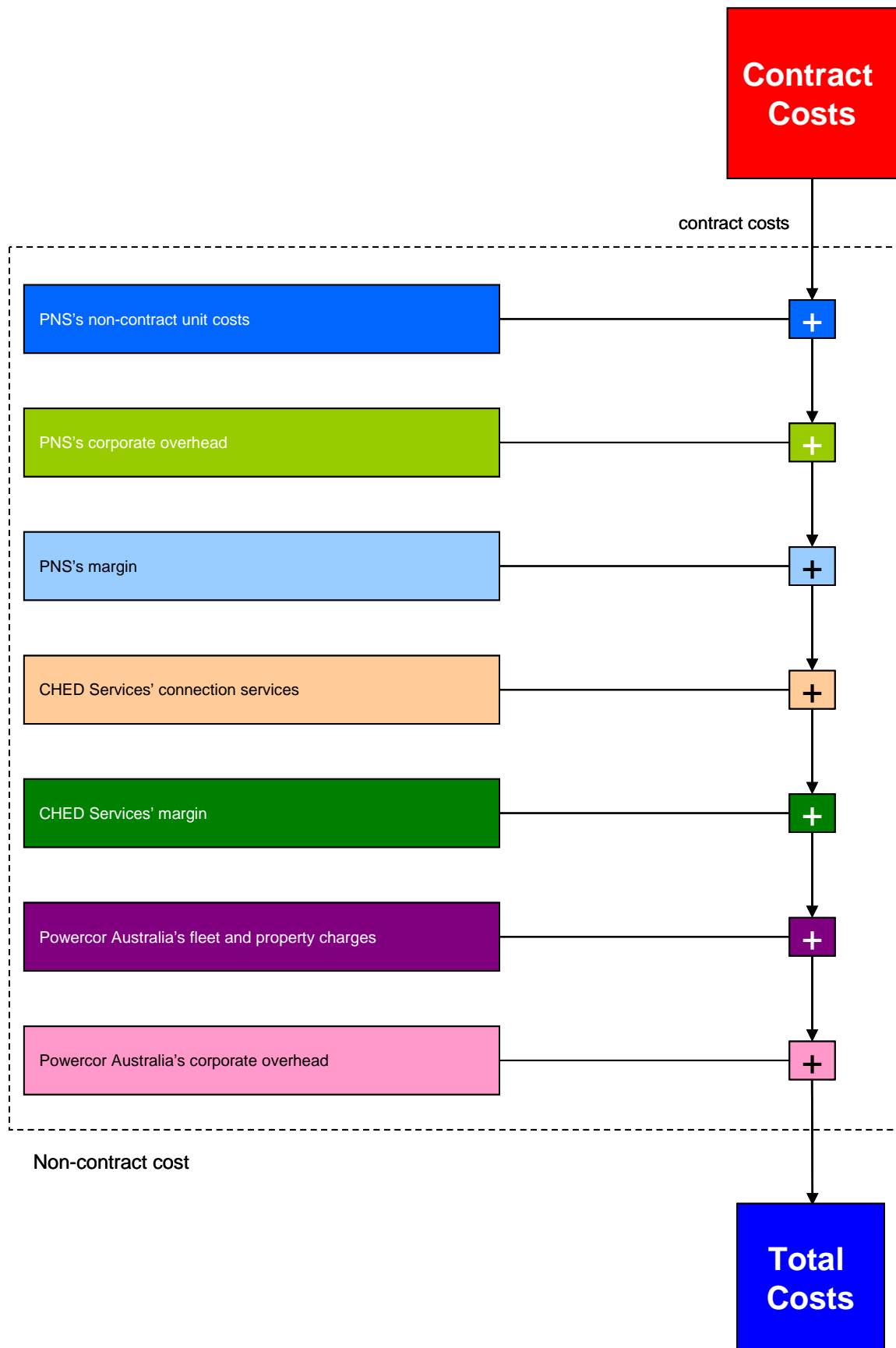


Figure 14 – BAU communications installation – non-contract capital expenditure

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Section 7.6.2 describes each of these components of expenditure illustrated in these figures.

7.6.2 Powercor Australia's Amended Application

Table 11 details Powercor Australia's revised Communications Installation – Non-Contract Capital Expenditure forecast and also details the forecasts in its Initial Budget Application and the AER's Draft Determination.

	2012	2013	2014	2015	Total
Powercor Australia Initial Budget Application	8,145	3,345	892	47	12,429
AER Draft Determination	2,726	1,010	178	178	4,092
Powercor Australia Amended Application	5,154	4,196	1,949	1,053	12,352

Table 11 – Comparison of communications installation – non-contract capital expenditure (\$'000s, 2011 Real)

Powercor Australia considers that its revised Communications Installation Capital Expenditure will be incurred and is consistent with the '*commercial standard that a reasonable business would exercise in its circumstances*' for the purposes of clause 5C.3(b)(iv) of the AMI Cost Recovery Order.

AMI rollout communications installation – non-contract capital expenditure

Powercor Australia's AMI rollout Communications Installation – Non-Contract Capital Expenditure includes:

- PNS's non-contract unit costs – these are the costs of PNS installing the AMI-related communication equipment that it purchased under AMI rollout Communications Supply Capital Expenditure;
- PNS rollout direct costs – these are the costs of PNS undertaking AMI-related activities such as network suppressions, traffic and road management, legal and commercial costs for the implementation of the telecommunications service provider and the access point (AP) / relay installation design;
- PNS's margin – this margin is charged at a rate of ■ per cent on PNS's non-contract unit costs and rollout direct costs;
- CHED Services connection services costs – these costs relate to back office processing costs of the CHED Services' Connection Services Group associated with the installation of communications equipment in the field;
- CHED Services direct costs – these are the costs of deployment planning management provided by CHED Services under the *Meter and Field Services Contract*;

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- CHED Services' project management costs – these are a share of the costs of CHED Service's project management of the AMI rollout, which have been split between meter and communications supply and installation; and
- CHED Services margin – this margin is charged to Powercor Australia under the *Meter and Field Services Contract*:
 - The margin on services that CHED Services receives from PNS is charged at a rate of ■ per cent on PNS's costs; and
 - The margin on services that CHED Services provides itself is charged at a rate of ■ per cent on CHED Services' costs.

Section 3.3.3 justifies the level of the CHED Services' margin that Powercor Australia has applied in calculating this expenditure.

The model entitled *Powercor meter & comms capex.xls* and Attachment 1 set out in detail how Powercor Australia has calculated each component of this non-contract capital expenditure forecast for 2012-15.

BAU communications installation – non-contract capital expenditure

Powercor Australia's BAU Communications Installation – Non-Contract Capital Expenditure includes:

- PNS's non-contract unit costs – these are the costs of PNS installing communication equipment that it purchased under BAU Communications Supply Capital Expenditure;
- PNS's corporate overheads – these are a share of PNS's corporate overheads for the provision of services to CHED Services in relation to BAU communications installation for Powercor Australia;
- PNS's margin – this margin is charged at a rate of ■ per cent on PNS's non-contract unit costs and rollout direct costs;
- CHED Services connection services – these costs relate to back office processing costs of the CHED Services' Connection Services Group associated with the installation of communications equipment in the field;
- CHED Services margin – this margin is charged to Powercor Australia under the *Meter and Field Services Contract*:
 - The margin on services that CHED Services receives from PNS is charged at a rate of ■ per cent on PNS's costs; and
 - The margin on services that CHED Services provides itself is charged at a rate of ■ per cent on CHED Services' costs.

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- Powercor Australia's fleet and property charges – these costs represent the 2010 Fleet and Property costs allocated to metering services in Powercor Australia's 2010 Regulatory Accounts with escalation applied consistent with the AER's 2011-15 Electricity Distribution Final Determination; and
- Powercor Australia's corporate overhead – these costs represent the 2010 corporate overhead costs allocated to metering services in Powercor Australia's 2010 Regulatory Accounts with escalation applied consistent with the AER's 2011-15 Electricity Distribution Final Determination. For further details refer to section 12 of Attachment 1.

Section 3.3.3 justifies the levels of each of the margins that Powercor Australia has applied to its BAU Communications Supply – Non-Contract Capital Expenditure.

The model entitled *Powercor meter & comms capex.xls* and Attachment 1 set out in detail how Powercor Australia has calculated each component of this non-contract capital expenditure forecast for 2012-15.

7.7 IT capital expenditure

7.7.1 AER's Draft Determination

In its Draft Determination⁸³, having regard for advice from Impaq⁸⁴, the AER made the following assessments in relation to Powercor Australia's IT Capital Expenditure:

- Workforce scheduling and mobility – the AER assessed that Powercor Australia should not need to invest in enhancing and replacing the customer appointment booking portal and telecommunications as the systems are only required for another two years;
- Performance and regulatory reporting – the AER assessed that there have not been any changes in regulatory reporting requirements that justify Powercor Australia's expenditure proposal;
- IT program management – the AER assessed that Powercor Australia should have no IT program management after 2013 given the AMI rollout schedule; and
- Infrastructure – the AER assessed that Powercor Australia's proposed expenditure does not reflect the data volumes to be stored or the prevailing market price for server replacements.

⁸³ Refer page 177-179 of Draft Determination

⁸⁴ Refer pages 27-28 and 93-95 of the Impaq report

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7.7.2 Powercor Australia's Amended Application

Table 12 details Powercor Australia's revised IT Capital Expenditure forecast and also details the forecasts in its Initial Budget Application and the AER's Draft Determination.

	2012	2013	2014	2015	Total
Powercor Australia Initial Budget Application	11,682	10,366	7,402	5,795	35,246
AER Draft Determination	9,143	8,544	3,982	3,844	25,513
Powercor Australia Amended Application	14,787	9,452	7,303	5,021	36,563

Table 12 – Comparison of IT capital expenditure forecast (\$'000s, 2011 Real)

Workforce scheduling and mobility

The Draft Determination removed all workforce scheduling and mobility projects on the basis the technology should be mature and the rollout should be bedded down by the end of 2011.

For the Amended Application, the Business deleted all workforce scheduling and mobility expenditure. It has however identified two projects that were previously included under the workforce scheduling and mobility category of the Initial Budget Application that were better classified as connection point management projects, namely '*remote configuration of meters*' and '*remote connect disconnect*'.

The '*remote configuration of meters*' project is not related to the AMI rollout but rather to address current BAU system and process gaps in the areas of:

- Additions and alterations to AMI enabled sites;
- Abolishments of AMI enabled sites;
- Remote meter configurations; and
- Meter faults.

The changes are required to the existing BAU processes and systems to ensure data is accurately updated in each IT system in a timely manner. These enhancements will be essential in the AMI environment given the service level requirements under AMI and the need to provide interval data to the market on a daily basis.

The second project '*remote connect disconnect*' is already underway. This project has two phases, semi automated and automated. The semi automated phase will be completed in December 2011. No allowance has been sought for this phase of the project. Work on the automated phase of the projects is due to commence three months after the semi automated phase has been in production. This is to allow the lessons learned from the first phase of the project to be incorporated into the design/build of the automated phase.

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	2012	2013	2014	2015	Total
Powercor Australia Initial Budget Application	2,035	1,317	60	110	3,522
AER Draft Determination	-	-	-	-	-
Powercor Australia Amended Application	-	-	-	-	-

Table 13 – Comparison of workforce scheduling and mobility capital expenditure (\$'000s, 2011 Real)

Connection point management

The Draft Determination accepted the Business' proposed expenditure allowance for connection point management. As noted in the workforce scheduling and mobility discussion, for the Amended Application the Business has transferred the 'remote configuration of meters' and 'remote connect disconnect' projects into connection point management. The estimates for each project have been revised from those originally proposed in the Initial Budget Application to reflect current best information.

	2012	2013	2014	2015	Total
Powercor Australia Initial Budget Application	2,302	-	140	-	2,442
AER Draft Determination	2,302	-	140	-	2,442
Powercor Australia Amended Application	5,724	-	140	-	5,864

Table 14 – Comparison of connection point management capital expenditure (\$'000s, 2011 Real)

Performance and regulatory reporting

The Draft Decision rejected all expenditure on performance and regulatory projects on the basis there were no proposed changes to the Business' external regulatory reporting requirements.

The AER has not understood the nature of the expenditure included under performance and regulatory reporting. The expenditure relates to the creation of a data warehouse using the Teradata product.

The data warehouse is required to store the interval data for a period of 7 years. The costs of the project are spread over multiple years to allow for the scaling of the data warehouse as the data population grows.

The two key reporting areas to be delivered from the data warehouse are:

- Reporting against the interval data delivery performance targets for 6am, 24hrs and 10 days after each read day. The Business presently has in place a temporary reporting solution but it is not scalable to the full meter population; and
- The AMI IT program replaced the legacy Meter Data System (MDS) with an application from Itron Enterprise Edition (IEE) that was scalable to 1.2 million

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interval meters. The MDS system had a suite of reports to meet the internal requirements of the Business. These reports are still in use today, despite the new Meter Data Management (MDM) application being implemented. Provision of these reports from the legacy system is a temporary measure until the data warehouse project is implemented.

The MDM application has not been designed to hold a full seven years of interval data. The operational performance of the MDM application would be unacceptable if it were to hold that volume of data. As a consequence it is essential the data warehouse project be implemented to hold the historical interval data.

	2012	2013	2014	2015	Total
Powercor Australia Initial Budget Application	505	505	505	505	2,020
AER Draft Determination	-	-	-	-	-
Powercor Australia Amended Application	2,222	908	566	-	3,696

Table 15 – Comparison of performance and regulatory reporting capital expenditure (\$'000s, 2011 Real)

IT program management

The Draft Determination rejected the forecast expenditure for IT project management for the period 2014-15 on the basis that by 2014, the IT project build should be largely completed.

The Business has reviewed its need for IT project management support and has consequently reduced the allowance sought in 2014-15. There however remains significant IT capital works around \$7 million and \$5 million respectively in 2014 and 2015 for which some IT project management should be provided.

Historically, the IT program management cost has been at about 10 per cent of the total IT capital expenditure for each year. The figures presented in this Amended Application represent approximately 5 per cent of the total IT capital costs, which reflects the reduced complexity of the program during 2014-15. It is noted that the Gartner Group has published research that indicates organisations could cut project overruns by 50 per cent by establishing enterprise standards for project management, including a program office with suitable governance. Thus, the Business believes a 5 per cent allowance is highly prudent.

	2012	2013	2014	2015	Total
Powercor Australia Initial Budget Application	300	300	300	300	1,200
AER Draft Determination	300	300	-	-	600
Powercor Australia Amended Application	300	300	200	140	941

Table 16 – Comparison of IT project management capital expenditure (\$'000s, 2011 Real)

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Infrastructure

The Draft Determination considered the forecast infrastructure expenditure to be excessive on the basis forecast data growth and total data volume following the AMI rollout was not as high as the Business has estimated. The Draft Determination also said the forecast server and storage hardware costs were too high.

In response to the Draft Determination, the Business requested Deloitte to independently review the issues raised by the AER, data volume assumptions, data storage assumptions and server replacement assumptions.

In terms of data volumes, Deloitte found the 2008 report cited by Impaq (and adopted by the AER) to determine data volume needs for the AMI program was incomplete and a 'work in progress' document. Therefore, the 2008 report is not a source of information that should be relied upon. In addition, the data volume forecasts in the report were developed in 2008 to assist distributors with costing, project planning, design and implementation of future processes. The report did not model or forecast total data volumes or data storage requirements specifically for the Victorian AMI program.

In addition, the data model assumes that only one copy of the meter data would exist at any one time (transmitted from a distributor to a retailer). Based on this assumption, the model implies that annual data requirements for a meter are 0.3MB. However the IEE sizing model⁸⁵ indicates that annual data volumes per meter are ~2.3MB⁸⁶. This figure is more representative of true data volumes and takes into consideration data management principles required to manage data with integrity in complex enterprise systems.

With the current number of AMI meters deployed today, 118TB of data has been collected and stored (across CitiPower and Powercor Australia). This incorporates the total data volume from IEE applications across all environments. It also includes the meter data stored in the MDM, SAP BW and Network Management System (NMS) applications (and required for these applications to function correctly). CitiPower and Powercor Australia have a combined updated forecast of 300TB as the total data volumes for the year ending 2015. This is a significant increase over the 300GB (0.3TB) volume that Impaq has forecast by 2013 for Powercor Australia.

In terms of data storage, the Draft Determination states the Business should use a lower cost storage solution such as HP's X1800 6TB SATA Storage Server. Impaq obtained pricing for this storage device from an online reseller of HP hardware (www.estore.com.au)⁸⁷ and concluded that an appropriate price for a storage solution is approximately \$2,000 per TB. Since Impaq have underestimated the total data volumes that the smart meters will generate, Impaq appears to have concluded that the storage solution that the Business uses currently is for storing large volumes of data and is unnecessary for the data volumes it has estimated.

⁸⁵ Refer <http://www.itron.com.au/>

⁸⁶ This estimate is for a production environment only, and does not include the data volumes for development, test and QA environments.

⁸⁷ Source: Impaq pg 27

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Deloitte found sourcing hardware from an online retailer is not an appropriate method to procure hardware for an organisation such as Powercor Australia. Such a solution is highly unlikely to be enterprise class and offer the functionality, warranties, and vendor support required. Further, the specific storage device proposed by Impaq does not have any virtualisation capabilities and has multiple single points of failure. The Business has built agility into its IT environment, and this is consistent with the AER's position stated in the *Draft Decision Victorian electricity distribution network service providers Distribution determination 2011-2015*. In the AMI IT infrastructure environment storage is virtualised using the Hitachi Data Systems Lightning 9900V Universal Storage Platform. This solution is an enterprise class storage device that has been designed and tested to meet the performance and availability requirements of AMI applications.

In addition the storage solution proposed by Impaq would require a large number of devices to meet Powercor Australia's projected storage requirements. This would result in increased operating costs and complexity. The Business' virtualised storage environment masks the underlying complexity of the storage infrastructure.

Lastly with respect to server replacement, whilst the Draft Determination infers that by 2014 many of the servers installed at the beginning of the rollout in 2009 will need replacing⁸⁸, it did not provide the full amount of funding requested by Powercor Australia for 2014-15. While no justification was provided for the decision, it is possible that Impaq believes that servers can be procured for a lower price – this would be consistent with Impaq's reasoning for the price of storage devices.

Powercor Australia requested \$7.6 million to cover the infrastructure costs for 2014-15. The allowance provided for 2014-15 is a 47 per cent decrease in the amount requested. While server replacement hardware costs (~\$4 million) will be funded by the Draft Determination, additional costs such as backup infrastructure, network infrastructure and project labour costs are not funded. These costs are necessary to refresh other components of the IT infrastructure environment including the labour required to undertake the work, and should be funded.

Deloitte independently analysed actual data volumes and growth forecasts, developed an understanding of the Business' storage architecture and requirements, and analysed the IT infrastructure refresh requirements for 2014 and 2015. Based on their analysis and understanding, they conducted a detailed cost analysis of IT infrastructure capital expenditure and identified a 2 per cent increase over the Initial Budget Application was required. Thus Deloitte concluded the original amounts sought by the Business are of a 'commercial standard'. Full details are presented in the Deloitte Report.

⁸⁸ Source: Impaq pg 25

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	2012	2013	2014	2015	Total
Powercor Australia Initial Budget Application	2,083	2,185	4,555	3,036	11,858
AER Draft Determination	2,083	2,185	2,000	2,000	8,268
Powercor Australia Amended Application	2,083	2,185	4,555	3,036	11,858

Table 17 – Comparison of infrastructure capital expenditure (\$'000s, 2011 Real)

8. Prudency – commercial standard – operating expenditure

This section addresses the categories of operating expenditure where the AER did not approve the proposals in Powercor Australia's Initial Budget Application on the basis that they did not meet the commercial standard and where the AER substituted its own revised forecasts.

This section:

- Examines errors by the AER in the application of the AMI Cost Recovery Order to Powercor Australia's operating expenditure; and
- Responds to each of the reasons that the AER gave in its Draft Determination for rejecting the proposals in Powercor Australia's Initial Budget Application for each category of operating expenditure. Powercor Australia provides revised operating expenditure forecasts that it considers it will incur and that are consistent with the '*commercial standard that a reasonable business would exercise in its circumstances*' for the purposes of clause 5C.3(b)(iv) of the AMI Cost Recovery Order.

8.1 Errors in the application of the AMI Cost Recovery Order

The AER concludes that Powercor Australia's proposed operating expenditure for the following expenditure categories involves a substantial departure from the commercial standard that a reasonable business would exercise in the circumstances:

- Meter data services;
- Meter maintenance;
- Customer service;
- Communications operations;
- Executive and corporate support services; and
- IT operating expenditure.

(the **Operating Expenditure Categories**).

For this reason, in accordance with clause 5C.5 of the AMI Cost Recovery Order, the AER rejects the proposed expenditure for each of the Operating Expenditure Categories included in Powercor Australia's Submitted Budget and sets out the expenditure that it would determine to approve for each of these categories if included in a new Submitted Budget.

The AER's decision on the prudence of Powercor Australia's proposed expenditure for each of the Operating Expenditure Categories is a product of the AER's construction and application of the statutory test including in particular its identification of the '*commercial standard*' in respect of each of these Operating Expenditure Categories.

The AER makes a number of errors of law and/or fact in its construction and application of the statutory test and its identification of the commercial standard for each of Powercor Australia's Operating Expenditure Categories. It follows that the AER makes errors of law and/or fact in making its decision on the prudence of Powercor Australia's proposed operating expenditure that are material to that decision.

8.1.1 AER's Draft Determination

Test applied by AER

As it does in considering Powercor Australia's expenditure on related party margins and proposed capital expenditure as discussed in sections 3.3 and 7, the AER purports to apply a '*commercial standard test*' to Powercor Australia's proposed operating expenditure.⁸⁹ As discussed further below, the AER's discussion of its assessment of whether Powercor Australia's proposed operating expenditure meets this '*commercial standard test*' does not disclose any consideration by it of prudence in applying that test. The AER instead appears to construe and apply clause 5C.3(b)(iv) as establishing a discrete, stand-alone test.

AER's reasons for seeking Impaq's advice

The AER observes (at 182-199), in respect of the proposed expenditure for each of the Operating Expenditure Categories, that on the basis of the information provided by Powercor Australia it is unclear how its expenditure forecast was derived.

In respect of the proposed expenditure for the meter data services and customer service Categories, which were said by Powercor Australia to reflect staffing costs, the AER specifically observes that no information was provided by Powercor Australia on:⁹⁰

- How the FTEs translated into Powercor Australia's expenditure forecast;
- How these FTEs are to be allocated to different functions;
- Data to substantiate that tasks to be performed by these staff are '*appropriate*'; and
- The roles and unit costs of these FTEs, for example whether the FTEs are for managerial positions or for call centre staff.

⁸⁹ See, for example, the references to the application of a '*commercial standard test*' to proposed operating expenditure in the Draft Decision at 166, 189 and 195.

⁹⁰ Draft Decision at 183 and 189.

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The AER also observes regarding the proposed expenditure for the IT operating expenditure category that information of the kind noted in the first three bullet points above, but in respect of activities and associated resourcing rather than FTEs, was not provided by Powercor Australia.⁹¹

The AER states that, for these reasons, it has conducted its assessment of whether Powercor Australia's proposed operating expenditure meets the '*commercial standard test*' based on the information available to it and, to assist in its assessment, has sought advice from Impaq on the proposed operating expenditure.

Impaq's findings and conclusions in the Impaq Report

Impaq states that its terms of reference included advice regarding the likely market value of the DNSPs' proposed expenditure and to review the DNSPs' Submitted Budgets and the additional information they have provided to assess whether their proposed expenditure meets the tests set out in the AMI Cost Recovery Order in relation to scope and prudence.⁹² It further states that it has approached its review of the DNSPs' Submitted Budgets on the basis of the requirements of the AMI Cost Recovery Order, in particular clauses 5C.2 and 5C.3.⁹³

For each of Powercor Australia's Operating Expenditure Categories, however, Impaq formed its own view on the costs of the activities to which the relevant Category relates by means of performing '*a bottom-up build*' of those costs.

Impaq's '*bottom-up build*' is based on its own views on the quantum of activities and costs that are required for compliance with legal obligations or otherwise '*would be in order*'. With the exception only of its expenditure estimate for the '*meter data management system*' component of the IT operating expenditure category, Impaq calculates its estimate of costs based on:

- Its views on the activities and their quantum required for the discharge of Powercor Australia's legal obligations in particular those under the AMI Specifications Order⁹⁴ or, if activities are not required for the discharge of legal obligations but Impaq has otherwise accepted that there is a '*need*' for the activities or that they are '*important*'⁹⁵, Impaq's assessment of the quantum of the activities that '*would be in order*'⁹⁶;

⁹¹ Draft Decision at 196-197.

⁹² Impaq Report at 5-6.

⁹³ Impaq Report at 8.

⁹⁴ See, for example, Impaq's assessment of the meter data services and meter maintenance Operating Expenditure Categories: Impaq Report at 98-99 and 100-103.

⁹⁵ See, for example, Impaq's assessment of 'Customer interaction' in the Customer service Operating Expenditure Category: Impaq Report at 105; its assessment of 'Home area network support' in the Communications operations Operating Expenditure Category: Impaq Report at 109; its assessment of the Project management Operating Expenditure Category at 110.

⁹⁶ See, for example, Impaq's assessment of the quantum of activities for 'Customer interaction' in the Customer service Operating Expenditure Category: Impaq Report at 105.

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- Its resultant estimate of the quantity of resourcing required for those activities in that quantum, so for example where the expenditure relates to human resources costs, the level and number of FTEs required for those activities in that quantum;
- Its own estimates of the unit cost(s) of that resourcing, so for example where the expenditure relates to human resources costs, its own estimates of salary rates, on-costs and the annual cost of overheads, accommodation, offices supplies, IT services etc.⁹⁷; and
- Its views on the appropriate allocation of any required costs (i.e. to AMI or to the Powercor Australia business as a whole).

For the '*meter data management system*' component of the IT operating expenditure category, Impaq bases its expenditure estimate on '*information from other DNSPs which have implemented MDMS*'.⁹⁸

Impaq's findings on the required activities and their quantum are based on generalised factual findings as to matters including the nature of the AMI rollout, the operation of industry regulation under instruments other than the AMI Cost Recovery Order and AMI Specifications Order and applicable engineering standards. The basis for Impaq's factual findings is not always explained and the material on which its findings are based is not always identified.⁹⁹ On occasion, Impaq does not explain how the activities accepted by it as being required translate into its estimate of the required level and number of FTEs for those activities.¹⁰⁰

Impaq has regard to and expresses views on Powercor Australia's proposed expenditure and the information provided in support of that expenditure but only in the context of its central inquiry, which is the '*bottom-up build*' of the costs of the activities to which the relevant Operating Expenditure Category relates. In performing its '*bottom-up build*', Impaq generally does not consider prudence, in particular the prudence of incurring the expenditure proposed by Powercor Australia, focusing instead on the expenditure it considers is required to comply with legal obligations or that which '*would be in order*'.

⁹⁷ Impaq Report at 9-10 and 97.

⁹⁸ Impaq Report at 114.

⁹⁹ See, for example, Impaq Report at 98, 99, 103, 106 and 110.

¹⁰⁰ See, for example, Impaq's assessment of 'Other metering resources' in the meter maintenance Operating Expenditure Category: Impaq Report at 103; its assessment of 'AMI network operations and fault rectification' in the communication operations Operating Expenditure Category: Impaq Report at 107-108; its assessment of the Project management Operating Expenditure Category: Impaq Report at 110; its assessment of the Executive and corporate support services Operating Expenditure Category at 111-112.

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AER's application of Impaq's expenditure estimates as the 'commercial standard' and resultant assessment of Powercor Australia's proposed operating expenditure

For each of the Operating Expenditure Categories, the AER adopts Impaq's expenditure estimate based on its '*bottom-up build*' as the commercial standard that a reasonable business would exercise in the circumstances.

For all Categories other than customer service and executive and corporate support services, the AER states that it adopts Impaq's cost estimate as the commercial standard based on views expressed by Impaq, in performing its '*bottom-up build*', regarding the likely quantum of the activities to which the Category relates that Impaq considered would be required and the likely quantum of the associated costs.¹⁰¹ The AER's reason for adopting Impaq's cost estimate as the commercial standard:

- For customer service, was the AER's own views on Powercor Australia's proposed expenditure, most of which views replicate those expressed by Impaq in its '*bottom-up build*' of the likely costs for the customer service Category¹⁰²; and
- For executive and corporate support services, was the limited nature of the information provided by Powercor Australia.¹⁰³

The AER assesses the quantum of Powercor Australia's proposed operating expenditure against Impaq's expenditure estimate and, on the basis that for each of the Operating Expenditure Categories the quantum of that proposed operating expenditure was significantly different from Impaq's expenditure estimate, the AER concluded that the proposed expenditure for each of those Categories involved a substantial departure from the commercial standard. In those circumstances, the AER determined it would approve proposed operating expenditure for those Categories in a revised budget in an amount based on Impaq's expenditure estimate.

8.1.2 Errors in AER's Draft Determination

AER misconstrues statutory test of prudent expenditure

As it did in assessing both Powercor Australia's proposed expenditure on related party margins and its proposed capital expenditure as discussed in sections 3.3 and 7, the AER construes clause 5C.3(b)(iv) of the AMI Cost Recovery Order as establishing a discrete, stand-alone '*commercial standard test*' for expenditure in a Submitted Budget. This is an error for the reasons already explained.

¹⁰¹ Draft Decision at 184, 188, 193, 197.

¹⁰² Compare the AER's views on 'Call centre costs' and 'Revenue management' at 189-190 to those expressed by Impaq on 'Call centre' and 'Revenue management' in the Impaq Report at 105-106.

¹⁰³ Draft Decision at 195.

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AER's inquiry is not that mandated by AMI Cost Recovery Order

As a consequence in part of its error of construction, the AER's conclusions on Powercor Australia's proposed operating expenditure are not informed by the inquiry mandated by the AMI Cost Recovery Order. This is because the AER has asked itself the wrong question and/or made factual errors in construing and applying the statutory test of prudent expenditure mandated by the Order.

For the reasons discussed in section 3, the correct inquiry is whether, in all the circumstances, the incurring of the proposed expenditure involves a substantial departure from the standard of prudence that would ordinarily and reasonably be exercised by a business engaged in commerce. This inquiry necessitates an assessment of the decision-making process and the principles applied in deciding to incur the expenditure against that standard of prudence having regard to all relevant considerations.

The AER, however, seeks to identify or construct a single '*commercial standard*' for the quantum of expenditure for each Operating Expenditure Category. To this end, the AER adopts the estimate of expenditure prepared by Impaq for the Operating Expenditure Category on the basis of a '*bottom-up build*' of costs as its '*commercial standard*' for that Category.

This Impaq estimate is not said by Impaq to be an estimate of the expenditure that would be incurred exercising that degree of prudence that would ordinarily and reasonably be exercised by a hypothetical business engaged in commerce in the circumstances and the Impaq Report discloses that its expenditure estimates are not estimates of that kind.

Impaq's expenditure estimates are premised on its views of the activities and expenditure required to achieve compliance with Powercor Australia's legal obligations or which Impaq otherwise considers to be necessary or important, not the prudence of incurring expenditure. Those expenditure estimates are calculated by Impaq based on its own views as to the resourcing required (e.g. level and number of FTEs) for the activities and in the quantum assessed by Impaq as required or needed, and the unit cost(s) of that resourcing (e.g. salary rates, on-costs etc).

So, for example, in determining meter testing and validation numbers and its resultant estimate of expenditure for the Meter Maintenance Operating Expenditure Category, Impaq considered only the quantum of testing and validation required for compliance with Powercor Australia's legal obligations and its expenditure estimate for the Category was based on Impaq's estimate of the quantum of testing and validation required by those legal obligations.¹⁰⁴ Impaq did not consider the quantum of testing and validation that would be prudent (i.e. undertaken by a hypothetical business engaged in commerce in the circumstances), which quantum would not necessarily be confined to that required for compliance with Powercor Australia's legal obligations. Similarly, in determining its estimate of expenditure for the Customer Service Operating Expenditure Category, Impaq estimated the expenditure required for

¹⁰⁴ Impaq Report at 101-102.

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customer interactions, which Impaq accepts are '*important*' and for which there is a '*need*', on the basis of the activities and their quantum that '*would be in order*'.¹⁰⁵

Impaq's expenditure estimates are, thus, best described as estimates of the expenditure it considers appropriate or reasonable.¹⁰⁶ The language used in the Impaq Report is consistent with this characterisation of its expenditure estimates.¹⁰⁷

In short, the Impaq Report does not provide an expert opinion on:

- The question raised for the AER's consideration by the statutory test of prudent expenditure (namely whether incurring the proposed operating expenditure involved a substantial departure from the standard of prudence that would ordinarily and reasonably be exercised by a business engaged in commerce in the circumstances); or
- The ancillary question of the '*commercial standard*' referred to in clause 5C.3(b)(iv) of the AMI Cost Recovery Order that is to be applied in assessing proposed expenditure (namely the standard of prudence that would ordinarily and reasonably be exercised by a business engaged in commerce in the circumstances).

At no point in the Impaq Report does Impaq set out any opinion on either of these matters. The AER's statements, in the Draft Decision¹⁰⁸, to the effect that Impaq recommended revisions or adjustments to Powercor Australia's proposed operating expenditure on the basis of its expenditure estimates are also not supported by a review of the Impaq Report. The Report merely sets out its expenditure estimates and, in preparing those estimates, some comments on Powercor Australia's proposed operating expenditure. Significantly, however, the Report makes no recommendations regarding the expenditure that the AER should reject in accordance with the prudence test established by clauses 5C.2 and 5C.3 of the AMI Cost Recovery Order.

In applying Impaq's expenditure estimates as the '*commercial standard*', the AER implicitly assumes that Impaq's estimates represent the standard of prudence that would ordinarily and reasonably be exercised by a business engaged in commerce in the circumstances. It does not consider whether, in fact, Impaq's expenditure estimates do so or provide any basis for its conclusion that those estimates are indicative of this standard of prudence. Having regard to the character of Impaq's expenditure estimates, the AER's implicit assumption is incorrect.

¹⁰⁵ Impaq Report at 105.

¹⁰⁶ In the Draft Decision (at 183, 186, 192, 195 and 197), the AER describes Impaq's expenditure estimates as estimates 'of the likely costs of CitiPower's and Powercor's operations'. It may be that the AER meant by this that Impaq's expenditure estimates are estimates of the appropriate or reasonable expenditure. If the AER intended to suggest, however, that Impaq's estimates were of the expenditure likely to be incurred by CitiPower and Powercor Australia, Powercor Australia observes that the Impaq Report discloses that such an assertion would be incorrect. Estimation of the expenditure that the businesses would be likely to incur is an exercise of a wholly different character to that which was undertaken by Impaq in that Report.

¹⁰⁷ See, for example, the Impaq Report at 6, where Impaq sets out those elements of the DNSPs' proposed expenditure in respect of which the Impaq Report 'does not include assessment of the reasonableness or otherwise of the DNSP's [sic] proposals' [underlining emphasis added], and at 102, where Impaq states that it 'considers the option of in-situ testing [of meter accuracy] to be reasonable' [underlining emphasis added].

¹⁰⁸ See, for example, 186, 188, 192, 194, 196 and 199.

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The AER's decisions to both seek the Impaq Report and to adopt Impaq's expenditure estimates as the '*commercial standard*' for each of the Operating Expenditure Categories are likewise not informed by a consideration of the matters relevant to the statutory test of prudent expenditure. In particular:

- The deficiencies in the information provided by Powercor Australia (e.g. as to how the FTEs/activities translate into the expenditure forecasts, how the resourcing sought is allocated to different functions and data to substantiate that the tasks to be performed are '*appropriate*') that are asserted by the AER as the basis for its decision to seek Impaq's advice are concerned with the appropriateness or reasonableness of the quantum of expenditure proposed by Powercor Australia. The information identified by the AER would not support an inquiry into the prudence of incurring that expenditure; and
- The AER's decision to adopt Impaq's expenditure estimates as the '*commercial standard*' is attributed in whole or in part to views expressed by Impaq on Powercor Australia's proposed expenditure in undertaking its '*bottom up build-up*' (except in respect of the executive and corporate support services Category in respect of which no reasons are provided by the AER). As already discussed, Impaq's inquiry is one into the quantum of the appropriate or reasonable expenditure, not the prudence of incurring the expenditure proposed.

It follows that the AER has made an error or errors of law and/or fact in construing and applying the statutory test under the AMI Cost Recovery Order.

As a consequence of these errors, the AER's conclusions on Powercor Australia's proposed operating expenditure are based on an inquiry that diverges from that required by the AMI Cost Recovery Order in the following respects:

- The AER's inquiry is as to the appropriate or reasonable expenditure, Impaq's estimate of which are adopted by the AER as the '*commercial standard*', whereas the AMI Cost Recovery Order mandates an inquiry as to the prudence of incurring Powercor Australia's proposed operating expenditure; and
- The AER's inquiry is as to the *quantum* of expenditure, specifically the quantum of the appropriate or reasonable expenditure, whereas the AMI Cost Recovery Order mandates an inquiry as to the *incurring* of the proposed expenditure, i.e. the decision or commitment to incur the proposed expenditure.

The AER has taken into account irrelevant considerations (i.e. the quantum of the appropriate or reasonable expenditure and considerations of relevance to that matter) and failed to take into account relevant considerations (i.e. the prudence of incurring Powercor Australia's proposed expenditure and considerations of relevance to that matter).

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Relevance of AER's views on limitations or deficiencies in available information

Perhaps in an attempt to explain the discrepancy between the inquiry performed by the AER and that mandated by the AMI Cost Recovery Order, the AER states a number of times that it has '*conducted an assessment of whether the expenditure meets the commercial standard test based on the information available to it*'.¹⁰⁹

In this revised budget application, Powercor Australia has endeavoured to provide the AER with the information identified in its Draft Decision, together with that information which Powercor Australia considers will assist in the proper application of the statutory test of prudent expenditure prescribed by the AMI Cost Recovery Order.

Powercor Australia observes, however, that it is not permissible for the AER to apply a test other than the statutory test prescribed by the Order for the reason that the AER considers there are limitations or deficiencies in the information available to it. Nor is it open to the AER to reject Powercor Australia's proposed operating expenditure on the basis that, by reason of such a view, the AER cannot be satisfied that incurring the proposed expenditure is prudent. The AER must apply the statutory test of prudent expenditure prescribed by the AMI Cost Recovery Order, and not some other test of its own devising, and, in so doing, it must establish that the proposed expenditure does not satisfy that statutory test if it is to reject Powercor Australia's proposed operating expenditure.

If the AER considers that it does not have the information available to it to properly apply the statutory test prescribed by the Order, the only correct and appropriate course open to the AER is for it to seek additional information from the business. It is not open to the AER to instead reject Powercor Australia's proposed operating expenditure by establishing a benchmark for comparison on the basis of its consultant's opinion that differs from that prescribed by the AMI Cost Recovery Order.

Additional errors by AER

The AER makes a number of additional errors of law and/or fact in adopting Impaq's expenditure estimates as the '*commercial standard*'.

As discussed in section 3, the AER cannot reject proposed expenditure merely because it has a consultant's opinion. It must itself investigate whether the incurring of the expenditure is prudent or instead involves a substantial departure from the commercial standard of a reasonable business in the DNSP's circumstances.

In addition to the errors arising from the AER's application of Impaq's expenditure estimates as the '*commercial standard*' without itself investigating the extent to which those expenditure estimates were representative of the requisite standard of prudence, the AER makes the following additional errors in applying Impaq's findings and conclusions:

¹⁰⁹ Draft Decision at 167, 183 and 189.

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- The AER makes a factual error or errors in applying Impaq's expenditure estimate for the Executive and Corporate Support Services Operating Expenditure Category as the '*commercial standard*' for that Category in circumstances where the AER finds, on the basis of information provided by Powercor Australia, that its proposed expenditure for that Category relates to '*professional and legal services fees*',¹¹⁰ but Impaq's expenditure estimate is an estimate of the internal human resources costs that would be incurred in respect of the activities to which the Category relates, being the preparation of budget and charges applications, financial accounting costs and preparation for the 2016-20 EDPR process¹¹¹. As a consequence, the AER applies a benchmark for assessing the prudence of Powercor Australia's proposed expenditure that relates to a fundamentally different type of expenditure to that proposed;

- The AER makes an error or errors of law and/or fact in applying Impaq's expenditure estimate for the IT Operating Expenditure Category as the '*commercial standard*' for that Category, without considering the issues of comparability arising in respect of '*the circumstances*' pertaining to Powercor Australia's proposed expenditure and those pertaining to the proposed expenditure of the other DNSPs. Impaq's expenditure estimate for this Operating Expenditure Category, specifically the meter data management system component of this Category, is based on the '*information from other DNSPs which have implemented MDMS*'.¹¹² In basing its expenditure estimate on expenditure information provided by the other DNSPs, Impaq does not consider the comparability of '*the circumstances*' referred to in clauses 5C.3(b)(iv) and 5I.8 pertaining to Powercor Australia's proposed expenditure as compared to those of the other DNSPs' proposed expenditure. In applying Impaq's expenditure estimate as the '*commercial standard*', the AER likewise has no regard to these issues of comparability. As a consequence, the AER fails to discharge its legal obligation to take into account and give fundamental weight to '*the circumstances*' referred to in clauses 5C.3(b)(iv) and 5I.8 and/or makes a legal or factual error in that it assumes, without any evidentiary basis, that the expenditure information of the other DNSPs establishes that Powercor Australia's proposed IT operating expenditure involves a substantial departure from the standard of prudence that would be ordinarily and reasonably exercised by a business in commerce '*in the circumstances*'; and

- The AER makes an error or errors of law and/or fact in applying Impaq's findings and conclusions without any independent assessment of the quality and reliability of those findings and conclusions. The AER has had no regard, in determining to accord significant and determinative weight to Impaq's findings and conclusions, to:
 - The generalised nature of the factual findings on which Impaq's findings on the required activities and their quantum are based;

¹¹⁰ Draft Decision at 195.

¹¹¹ Impaq Report at 111-112.

¹¹² Impaq Report at 114.

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- The fact that Impaq does not, in a number of instances, provide an explanation of the basis for these findings or identify the material on which it has relied in making these findings; and
- Impaq's failure, on occasion, to explain how the activities accepted by it as being required translate into its estimate of the required level and number of FTEs for those activities (despite the AER's criticism of the information provided by Powercor Australia on this very basis).

These considerations are relevant to, and should have been taken into account in, the making of the AER's decision on the weight to accord Impaq's findings and conclusions. Further, these matters hinder Powercor Australia's ability to respond to those findings and conclusions. For these reasons also, Powercor Australia submits that the AER should accord lesser weight to Impaq's findings and conclusions in its final decision.

Notwithstanding the AER's errors in the application of the AMI Cost Recovery Order discussed above, Powercor Australia has sought to address in the remainder of this section 8 the matters that the AER raised about whether Powercor Australia's operating expenditure forecast are consistent with the commercial standard.

8.2 Meter data services operating expenditure

8.2.1 AER's Draft Determination

The AER rejected the Meter Data Services Operating Expenditure forecasts in Powercor Australia's Initial Budget Application on the basis of workload requirements for expected error volumes, the collection and processing of data, the management of National Meter Identifiers (NMIs) and the handling of data requests. This section addresses each of these issues in turn.

Workload requirements for expected error volumes

In its Draft Determination¹¹³, having regard for advice from Impaq¹¹⁴, AER considered that Powercor Australia overstated the level of human intervention required in the delivery of data for the AMI program and considered Powercor Australia did not provide an adequate explanation or breakdown of its costs. The AER therefore reduced Powercor Australia's Meter Data Services Operating Expenditure. The AER based its estimates of Powercor Australia's workload and labour requirements on contracted level of service percentages.

Powercor Australia does not agree with the AER's assessment and does not consider that it provides an appropriate basis for determining the '*commercial standard*' for Meter Data Services Operating Expenditure.

¹¹³ Refer page 183 of the Draft Determination

¹¹⁴ Refer pages 30-32 and 98-99 of the Impaq report

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As discussed in section 3.1 of the Deloitte Report, the contracted level of service percentages do not reflect Powercor Australia's actual operations. Furthermore, Impaq's analysis that the AER has relied on does not include:

- The errors that are impacting the current workload;
- How these errors will change over time; and
- The level of effort required to address the errors.

A thorough analysis of the workload required in meter data services to support the AMI rollout schedule is necessary to more accurately determine the required operating expenditure budget. Impaq has not undertaken this level of analysis and it, and the AER, have underestimated the level of effort required to maintain the AMI rollout.

Deloitte has conducted a bottom up analysis of the work required to provide meter data services to support the AMI rollout. This analysis is sufficiently detailed to provide accurate FTE requirements for each process required to provide meter data services. These FTE requirements are a key input into its overall Meter Data Services Operating Expenditure assessment.

Effort required for the collection and processing of data

In its Draft Determination¹¹⁵, having regard for advice from Impaq¹¹⁶, the AER considered that Powercor Australia will only need to manually intervene in 168 data points per day, which it has equated to 3.5 meters per day. It has based this on the AMI performance levels for the collection of daily meter readings, which are 99 per cent within 4 hours after midnight, and 99.9 per cent within 24 hours.

Powercor Australia does not agree with the AER's assessment and does not consider that it provides an appropriate basis for determining the '*commercial standard*' for Meter Data Services Operating Expenditure.

As discussed in section 3.1 of Deloitte's report, Powercor Australia's meter data management systems are currently producing higher error rates than anticipated and Powercor Australia needs to invest an appropriate level of effort in order to achieve the AMI performance levels.

Deloitte has conducted a bottom up analysis utilising Powercor Australia's actual error rates from the first month of data collected (i.e. July 2011). This data was not available at the time of Impaq's analysis (or Powercor Australia's Initial Budget Application), which limited its ability to accurately assess the effort required for the collection and processing of data.

¹¹⁵ Refer page 184 of the Draft Determination

¹¹⁶ Refer pages 31 and 98 of the Impaq report

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Powercor Australia further notes that Impaq's assumption that 168 data points equates to 3.5 meters is incorrect. While 3.5 meters is the minimum number of meters that 168 erroneous data points could possibly be attributed to, in reality it is quite feasible that each of these 168 data points could be attributed to up to 168 separate meters. This requires a higher FTE commitment to manage than what Impaq, and the AER, have allowed.

Management of NMIs

In its Draft Determination¹¹⁷, having regard for advice from Impaq¹¹⁸, the AER considered that the management of NMIs is (or should be) mostly automated and that Powercor Australia should be able to manage NMI errors through five FTEs in 2012 reducing to two FTEs by 2015.

Powercor Australia does not contest the AER and Impaq's assessment.

Handling of data requests

In its Draft Determination¹¹⁹, having regard for advice from Impaq¹²⁰, the AER considered that Alternative Control Services and MSATS will handle most data requests and Powercor Australia will only require three FTEs in 2012 reducing to one FTE in 2015 for this activity.

Powercor Australia does not agree with the AER's assessment and does not consider that it provides an appropriate basis for determining the '*commercial standard*' for Meter Data Services Operating Expenditure. Furthermore, Powercor Australia does not agree that the costs of this activity will be recovered through Alternative Control Services charges.

As discussed in section 3.1 of Deloitte's report, while the majority of Powercor Australia's data requests will be handled automatically, the current levels of requests requiring manual intervention are higher than Impaq's assessment. Neither Powercor Australia nor Deloitte have sighted any substantial rationale to support Impaq's assessment.

Deloitte has undertaken a bottom up assessment of the handling of data requests and has concluded that Powercor Australia requires 2.5 FTEs.

¹¹⁷ Refer page 184 of the Draft Determination

¹¹⁸ Refer pages 32 and 98 of the Impaq report

¹¹⁹ Refer page 184 of the Draft Determination

¹²⁰ Refer pages 32 and 99 of the Impaq report

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8.2.2 Powercor Australia's Amended Application

Table 18 details Powercor Australia's revised Meter Data Services Operating Expenditure forecast and also details the forecasts in its Initial Budget Application and the AER's Draft Determination.

	2012	2013	2014	2015	Total
Powercor Australia Initial Budget Application	5,343	4,663	3,577	2,824	16,407
AER Draft Determination	1,079	904	641	553	3,177
Powercor Australia Amended Application	6,285	4,516	2,896	2,896	16,593

Table 18 – Comparison of meter data services operating expenditure (\$'000s, 2011 Real)

As discussed in section 3.1 of Deloitte's report, the AER and Impaq structured their analysis of Meter Data Services Operating Expenditure based on the following categories of work:

- Collection and processing of data;
- Management of NMIs;
- Meter reading costs;
- Market requests for data; and
- Provision of data to Australian Energy Market Operator (**AEMO**).

Powercor Australia does not agree that these activity categories reflect its current operations to a level that allows a representative level of effort to be forecast of the '*commercial standard*' for Meter Data Services Operating Expenditure.

Deloitte has undertaken a bottom-up analysis of Powercor Australia's Meter Data Services Operating Expenditure. As discussed in section 3.1 of its report, Deloitte considers that the following activity categories are more appropriate for the analysis of effort required to provide Meter Data Services through to 2015:

- Conversion – this activity takes a currently installed interval meter and makes it a fully functional AMI meter by logically converting (activating) it. Since the Initial Budget Application, the Business has needed to increase the number of conversions from manually read interval meters to remotely read interval meters on account of reductions in conversions in 2011;
- Deployments – this activity replaces a currently installed basic meter with an AMI meter and immediately activates it as opposed to simply installing it and logically converting it later;

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- Steady State Preparation – these are BAU activities that are not part of the conversion or deployment processes but are day-to-day activities needed to maintain the AMI data;
- Meter Data Collection – this activity covers basic meter reading exceptions which will continue until accumulation meters are replaced with AMI meters. This activity also includes meter reading for accumulation and manually read interval meters. Since the Business's Initial Budget Application, it has continually lost efficiencies on meter reading routes due to many routes being unable to be closed out as a function of it needing to by-pass meters. Whilst this only impacts on 2012, it has led to an increase in payments to the Business's meter reading vendor to compensate for the loss of efficiencies;
- Performance Monitoring and Process Development – this function represents Powercor Australia at industry forums and acts as a liaison between the broader community and the Business. This function also considers changes arising from the National Energy Customer Framework, data management change requests and administrative work flow to ensure industry policies are transferred into the Business when needed;
- Meter Data Processes (basic and interval) – these activities cover data reporting, data requests and overall reporting functions for both basic and interval meters;
- Operational – this activity manages local network service provider retailer inquiries and activity queues; and
- Projects – this covers enhancements required as part of the of the AMI rollout and to support on-going operations.

Deloitte has broken down each activity category into individual process steps having regard for the number of errors, the time for each error, the forecast error based on rollout, the equivalent FTE requirement and the cost of the FTE requirement. Deloitte did not review the meter reading contract in its report.

Table 19 compares Powercor Australia and Deloitte's forecast of meter data services.

	2012	2013	2014	2015	Total
Powercor Australia's forecast of Meter Data Services Operating Expenditure	6,285	4,516	2,896	2,896	16,593
Deloitte's forecast of Meter Data Services Operating Expenditure (with meter reading contract costs added to Deloitte's forecast)	8,414	5,567	3,523	3,182	20,686

Table 19 – Comparison of Powercor Australia and Deloitte's forecast of meter data services (\$'000s, 2011 Real)

Table 19 shows that Powercor Australia's forecast of Meter Data Services Operating Expenditure is highly conservative compared with the detailed bottom up build up undertaken by Deloitte. On this basis, Powercor Australia believes that its forecast is prudent and is consistent with the '*commercial standard that a reasonable business would exercise in its circumstances*'.

8.3 Meter maintenance operating expenditure

The AER should note that CitiPower and Powercor Australia undertake their meter maintenance activities jointly. As a consequence, the following discussion relates to both Businesses.

8.3.1 AER's Draft Determination

In its Draft Determination¹²¹, having regard for advice from Impaq¹²², the AER considered that, for a variety of reasons, Powercor Australia's Meter Maintenance Operating Expenditure forecast was not consistent with the requirements of the Australian Standard AS-1284 and the AMI Cost Recovery Order and was therefore also not consistent with the '*commercial standard*'.

In section 8.3.2, Powercor Australia addresses each of the issues raised by the AER and proposes a revised Meter Maintenance Operating Expenditure forecast.

8.3.2 Powercor Australia's Amended Application

8.3.2.1 Revised forecast for 2012-15

Table 20 details Powercor Australia's revised Meter Maintenance Operating Expenditure forecast and also details the forecasts in its Initial Budget Application and the AER's Draft Determination. These costs are based on field activities inclusive of office-based meter engineering support.

¹²¹ Refer page 186-188 of the Draft Determination

¹²² Refer pages 33-37 and 100-103 of the Impaq report

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	2012	2013	2014	2015	Total
Powercor Australia Initial Budget Application	1,274	2,004	2,429	2,299	8,005
AER Draft Determination	787	707	1,114	1,114	3,722
Powercor Australia Amended Application	1,401	1,440	1,859	1,890	6,591

Table 20 – Comparison of meter maintenance operating expenditure for 2012-15 (\$'000s, 2011 Real)

The basis on which Powercor Australia has determined its revised meter maintenance Operating Expenditure forecast is explained below.

8.3.2.2 Nature of maintenance services

Powercor Australia's Meter Maintenance Operating Expenditure relates to certain compliance testing requirements under the Rules for prescribed metering as well as certain other maintenance activities.

The Rules compliance testing activities relate to:

- Direct connected meter family accuracy testing;
- Validation of metering installations;
- Current Transformer connected meter accuracy testing;
- Current Transformer accuracy testing; and
- Un-metered supplies audits.

The other maintenance activities relate to:

- Non-AMI meter programming and time-switch resets;
- The investigation and correction of multiple occupancy metering transpositions;
- Customer on-site investigations; and
- Meter provider investigations.

The following meter-related activities are outside of the scope of Powercor Australia's Meter Maintenance Operating Expenditure and hence are not included in its forecasts:

- Meter maintenance activities associated with non-prescribed metering (i.e. contestable metering for customers with annual consumption greater than 160MWh);
- Customer requested meter investigation and accuracy tests, the costs of which are recovered through Alternative Control Services' charges; and

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- Servicing maintenance, which is a Standard Control Service.

8.3.2.3 Basis for determining costs

Powercor Australia has individually itemised and developed a bottom-up assessment of unit costs for common and established maintenance activities that occur frequently. These unit costs have been derived using historical ‘*actual*’ time confirmation for each activity by Powercor Australia staff in 2009 and 2010.

‘*Actual*’ time for each activity includes that associated with:

- Scheduling and customer interaction;
- Travel time;
- Site activity; and
- Reporting and records management.

Although the 2009 and 2010 activities generally do not relate to AMI meters, Powercor Australia considers that the nature and scope of the activities – and therefore the time taken – will largely be the same for AMI metering.

In addition to unit based activities, there are certain activities:

- Where it is not practical to develop unit based assessments using actual time estimates because of the frequency and / or diversity of the activity; and
- That include an engineering support activity.

These activities have been separately calculated, as discussed below.

8.3.2.4 Unit rate based activities - rules compliance testing

	2012	2013	2014	2015
Code Test D/C meter Single Phase	928	1,560	1,629	1,701
Code Test D/C meter Poly Phase	409	649	775	775
Code Test CT meter	-	-	1,059	1,097
Code Test Current Transformers (Set of 3)	549	549	549	549
Un-metered Supply Audits	1,900	500	500	500

Table 21 – Powercor Australia’s meter maintenance volumes – rules compliance testing unit rate activities

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Code Test Direct Connect Meters (Single Phase and Poly Phase)

The *Electricity Customer Metering Code* and the Rules require CitiPower and Powercor Australia to perform compliance testing on all AMI meters within two years of their first installation and further testing after ten years in service. These tests must be undertaken in accordance with the *National Electricity Market Metrology Procedure (Metrology Procedure)* and various Australian Standards. Thereafter, testing is required every five years. The budget for meter testing is based on these requirements.

CitiPower and Powercor Australia have established a combined family testing model for the AMI meter population based on:

- 40 meter make, model and year variations based on the meter rollouts in 2009 to 2013; and
- 10 families per year – based on five models and two manufacturers - with reduced volumes for BAU new connection installations from 2014.

This drives a meter family testing program of two year initial in-service compliance testing for the period 2012 to 2015.

This meter family testing program is fully compliant with the requirements of AS1284.13. In particular, the program complies with the following clauses of the Australian Standard:

- Clause 6.2.2 – this relates to the requirement to undertake an initial in-service compliance test within one to three years of initially being placed into service;
- Clause 7.1.1 – this relates to the method to be used for sampling by attributes in accordance with Table 1 of the Australian Standard, which details sample volumes;
- Clause 8.2 – this relates to the grouping of meters by make, model and year into distinct families as the basis for samples; and
- Clause 8.4 – this requires the number of meters to be selected to be 10 per cent more than the sample requirements.

The meter volumes are based on the *'attributes testing method'* that have historically been used by CitiPower and Powercor Australia, which is consistent with the approved *Meter Asset Management Plan*, and then sourced sites randomly on a pre-defined ratio between CitiPower and Powercor Australia's network areas.

This is effectively the same method as that employed by Impaq in Table 38 and Table 118 of its report, other than that current transformer (CT) meters are not included in CitiPower and Powercor Australia's method as they are subject to a 100 per cent

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testing program. This means that Powercor Australia has only 40 meter families, not 42 meter families that Impaq has assumed.

There is a timing issue arising from Impaq's use of a three year initial test period as opposed to the Businesses' use of a two year initial test period. This results in a minor volume discrepancy between the Businesses and Impaq's assessment in terms of the volumes that fall due between 2012 and 2015. These differences relate to the totals of single phase and multiphase meter testing on a network basis. The Businesses' volumes also take into account any top up of data validation sample volumes, as separately required under the Rules. Impaq's model does not appear to have taken this other obligation into account.

The approach adopted by the Businesses is consistent with the Australian Standard and the Rules.

In its report, Impaq considers laboratory bench testing of batches of retrieved meters would be a cost effective alternative to in situ testing in the field and could be undertaken for a total annual cost in the order of \$365,234 for CitiPower and Powercor Australia. This compares with Impaq's allowed in situ meter testing annual cost of \$866,150 (or \$3.464 million for 2012-15).

Impaq has calculated its meter retrieval and test costs as follows:

- Retrieval $\$20.13 \times 12,770$ meters = \$257,000
- Batch Testing 1,277 Batches of 10 = 776 man hours = 0.51 FTE = \$68,234
- Batch Test Bench maintenance = \$40,000
- Total costs per annum = \$365,234
- Apparent testing cost per meter = \$28.60 (i.e. $\$365,234 / 12,770$)

Powercor Australia does not agree with Impaq's assessment and believes that it understates the real costs that the Businesses would incur by at least \$3 million for 2012-15. This is because Impaq does not appear to take into account:

- The labour cost of installing a replacement meter at the site of the retrieved meter and the related process of updating market systems;
- Batch testing 12,770 meters in batches of 10 meters at 2.4 per hour per batch would consume 3,065 man hours not 776 man hours - or 2 FTEs not 0.51 FTEs.
- The costs and risks of billing errors relating to the updating of MSATS standing data final reads of the removed meter. These costs and risks do not arise for in situ testing; and
- The additional man hours that would be required to manually read data of the retrieved meters during batch testing to provide data validation.

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The Businesses estimation of the costs of meter retrieval and testing are as follows:

- Replacement of retrieved meters - 10,800 1 phase and 2,290 multiphase labour, meter reverification and additional meter stock replace 'Retrieval' x 12770 meters = \$3M
- Batch Testing 1,277 Batches of 10 = 3065 man hours = 2 FTE = \$270,000
- Bench Maintenance = \$40,000
- Total direct costs per annum = \$3.4M
- Testing costs per meter = \$260

On the basis of the above, the Businesses consider that laboratory bench testing of batches of retrieved meters would not be a cost effective alternative to in situ testing in the field as there would be:

- Longer interruptions to customers' supply associated with meter replacement;
- No identifiable financial advantage in the laboratory testing costs; and
- A loss of other condition monitoring and fraud detection benefits that are achieved through in situ testing.

Furthermore, the Businesses understand that laboratory bench testing of batches of retrieved meters in the manner proposed by Impaq is not consistent with the typical practice of other metering providers and therefore does not represent the '*commercial standard*'.

Validation of metering installation and data recorded in the meter installation database involves collecting data from a representative sample of meters and comparing this data with meter data information currently stored.

Validation of metering databases is required under the *Metrology Procedure Part A* and must be conducted each 12 months in volumes in accordance with Australian Standards.

3.7.1 The responsible person must ensure that a sampling plan is established and maintained, in accordance with Australian Standards 'AS 1199-2003: Sampling procedures for inspection by attributes – Sampling schemes indexed by acceptance quality limit (AQL) for lot-by-lot inspection' or 'AS 2490-1997: Sampling Procedures and Charts for Inspection by Variables for Percent Nonconforming' to validate that the data stored in the metering installation database with respect to a type 5 or type 6 metering installation is consistent with the data stored in the meter or meter/associated data logger.

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3.7.2 The validation test must be conducted at a frequency in accordance with the sampling plan described in clause 3.7.1, which must not be less than once every twelve (12) months.¹²³

The Businesses are aligning the site visit and data downloads associated with the samples required for in situ meter testing with the data validation samples, however the two different requirements provide for varying volumes.

Unlike the in situ meter testing under AS1284.13 which requires a two year initial 'in-service' test on nominated meter families, the data validation test on the metering installation database is an annual requirement based on volumes reflecting the entire metering installation database in each year.

The metering installation database of type 5 interval meters increases dramatically from less than 500,000 in 2010 to more than 1.2 million from 2013.

AS1199 requires an annual sample of 800 sites for a population of 500,000 or below, and an annual sample of 1,250 sites for a population in excess of 500,000. By combining Powercor Australia and CitiPower's populations as a single business volume the annual sample is reduced to 1,250, rather than 2,050, comprising 1,250 for Powercor Australia and 800 for CitiPower.

The Businesses complete these annual volumes for these two test requirements by combining the requirement to undertake data collection with the meter accuracy family sampling testing in one combined program, i.e. accuracy test and data validation activities are undertaken on each site.

As noted above, Impaq does not specifically address these two differing volume requirements. Impaq have only dealt with the in situ meter testing requirements – they have not dealt with the data validation sample requirements.

Impaq analysis (on pages 36 and 103 of its report) allocates the in situ meter testing into a combined tests table reproduced as table 38 (page 34) for CitiPower and table 119 (page 104) for Powercor Australia. It then allocates these total costs across the two networks in a proportion of one-third to CitiPower and two-thirds to Powercor Australia.

Code test CT meter

CitiPower and Powercor Australia's CT meters are managed under the AEMO approved combined *Meter Asset Management Plan*. Under this plan, 100 per cent of CT meters are tested on a five year cycle in compliance with the requirements of Chapter 7 of the Rules and the requirements of the *National Metrology Procedure*. These tests of CT meters do not require a customer shutdown.

The Businesses' proposed test volumes include:

¹²³ AEMO, Metrology Procedure: Part A National Electricity Market, Effective 31 October 2011

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- The replacement of existing LV CT meters in 2012 and 2013 (resulting in no tests in these two years); and
- Testing from 2014 onwards. In order to avoid peaks in the testing profile that would otherwise arise from the concentrated installations in 2012 and 2013, the Businesses have smoothed the workload from 2014 onwards in order to meet the rolling five year 100 per cent testing program. Volumes are based on the forecast total population of AMI CT Meters.

Code test set of 3 current transformers

The Businesses' low voltage current transformers are managed under the AEMO approved combined *Meter Asset Management Plan*. Under this plan, 100 per cent of current transformers are tested on a 10 year cycle in compliance with the requirements of Chapter 7 of the Rules and to meet the requirements of the *National Metrology Procedure*.

The Businesses' volumes are based on a fixed 10 year 100 per cent testing program. Tests are undertaken regardless of whether a type 5, 6 or AMI Meter is installed. Tests require a customer shutdown. Volumes are based on the forecast volume population of CT Meters.

The AER and Impaq have made no allowance for this work.

Field sample audit of un-metered supplies

CitiPower and Powercor Australia's unmetered supplies must be load tested in the field on a sample test basis yearly, in accordance with:

- Clause 3.9.4 and 3.9.5 of the *National Metrology Procedure* for the Businesses' market (i.e. Type 7) unmetered supplies; and
- Clause 5.2 the Essential Services Commission (ESC) of Victoria's *Electricity Customer Metering Code*, which requires that the Businesses' franchise unmetered supplies also to comply with the *National Metrology Procedure*.

Powercor Australia is undertaking a 100 per cent unmetered supply inspection program during 2010-12 to ensure that it has an accurate database of unmetered supply connections.

From 2013 onwards, the Businesses will conduct 10 per cent sample testing per annum in accordance with the *National Metrology Procedure*.

On pages 36 and 103 of its report, Impaq allocates 1,100 tests in 2012 and 300 tests in each of the years 2013, 2014 and 2015 (i.e. totally 2,000 tests) to reach a combined test table, which is reproduced on table 38 for CitiPower and table 119 for Powercor Australia. Impaq then allocates the total costs between the two networks on the basis of one third to CitiPower and two thirds to Powercor Australia.

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Impaq's model therefore only accounts for the 2,000 unmetered supplies audits occurring in CitiPower, and ignores the 3,400 occurring in Powercor Australia over the same period. This means that the Powercor Australia's audits are not funded in Impaq's expenditure allowance.

8.3.2.5 Other maintenance unit activities

	2012	2013	2014	2015
Meter Program & timeswitch resets	170	85	-	-
Transpositions	-	-	-	-
Customer Investigation Onsite - no equip replaced	500	500	500	500

Table 22 – Powercor Australia meter maintenance volumes – other maintenance unit rate activities

Non-AMI meter programming and time switch resets

These are activities associated with re-installing the operating program in an electronic meter in-situ, or resetting a time switch.

This work historically relates to non-AMI metering and will continue to be required while there are non-AMI meters in service. The expenditure therefore ramps down progressively to 2013 and reduces to nil from 2014.

There is no allowance for this work in the Impaq report or the AER's Draft Determination. Given that there will be non-AMI meters until 2013, Powercor Australia considers that this expenditure is still required. This expenditure was part of the build-up of costs in previous AMI reviews – it is not a new activity.

Customer investigation onsite – no equipment changed

These activities are associated with field metering investigations and rectification where no equipment is replaced and the customer has not requested a meter accuracy test. Historically, the Businesses have not charged customers for these activities, particularly where the investigation cannot establish any fault of the customer in contributing to the problem identified.

These field investigations are initiated via:

- Customer/retailer meter data enquiries;
- EWOV enquiries; and
- Internal business initiated investigations.

As noted, these activities do not include customer requested meter investigation and accuracy tests for which the associated costs are recovered through an Alternative Control Service charge where the tested meter is be found to be operating within required accuracy specifications.

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There is no allowance for this work in the Impaq report or the Draft Determination. This expenditure was part of the build-up of costs in previous AMI reviews – it is not a new activity.

This is an on-going issue that is unrelated to the AMI rollout and the replacement of accumulation meters with AMI meters will not lessen this activity. Therefore the volumes of investigations are unaffected by the AMI rollout.

Meter provider investigations

As Metering Providers, the Businesses need to monitor and manage its metering assets, over and above the accuracy testing of families of assets that is required under Chapter 7 of the Rules.

This involves the Businesses undertaking field investigations relating to:

- Trends of equipment performance and failures;
- Safety events or concerns;
- Customer complaints regarding appliance interference, radiation and noise;
- AEMO Meter Provider compliance audits;
- Investigations of new technologies (e.g. meter boards, links fuses and contactors);
- Laboratory based investigations of failed or malfunctioning equipment prior to return to vendor;
- Audits of field work or preliminary designs of complex metering installations.

These investigations do not typically relate to individual customer matters but rather to a portfolio or asset class. These investigations might be identified through a series of individual customer investigations.

This is an on-going issue that is unrelated to the AMI rollout and the replacement of accumulation meters with AMI meters will not lessen this activity. Therefore the volumes of investigations are unaffected by the AMI rollout.

There is no allowance for this work in the Impaq report or the Draft Determination. This expenditure was part of the build-up of costs in previous AMI reviews – it is not a new activity.

8.4 Customer service operating expenditure

8.4.1 AER's Draft Determination

The Draft Determination reduced the customer service expenditure forecasts proposed in the Business' Initial Budget Application. The reasons cited for the reductions included:

- Call centre and customer interaction costs are duplicated in meter installation capital expenditure; and
- Final read errors will not equate to an incidence of 12 per cent.

8.4.2 Powercor Australia's Amended Application

Table 23 details Powercor Australia's revised Customer Service Operating Expenditure forecast and also details the forecasts in its Initial Budget Application and the AER's Draft Determination.

	2012	2013	2014	2015	Total
Powercor Australia Initial Budget Application	6,192	5,083	1,274	1,315	13,864
AER Draft Determination	336	264	114	114	828
Powercor Australia Amended Application	6,113	5,004	1,156	1,199	13,472

Table 23 – Comparison of customer service operating expenditure for 2012-15 (\$'000s, 2011 Real)

The Business has addressed the cost duplication issue in section 6 of this Amended Application. In summary, the Business has consistently reported call centre and customer interaction and treatment costs under the customer service classification in its 2009-11 Budget Application and through its Regulatory Accounts. The AER also approved call centre and customer interaction and treatment costs as customer service costs in its previous *Final determination Victorian advanced metering infrastructure review 2009-11 AMI budget and charges application*. The remainder of this section addresses the issues concerning 'commercial standard'.

Customer service costs include only those incremental customer service costs associated with mass rollout program and an allocation of the customer service corporate management costs associated with BAU metering activities. The respective costs are set out below.

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	2012	2013	2014	2015	Total
AMI rollout program					
Customer interaction and treatment	2,264	1,830	-	-	4,094
Call centre	1,540	1,265	-	-	2,806
Revenue management	689	548	-	-	1,237
Customer engagement and education	552	245	-	-	797
BAU metering activities					
Corporate customer service costs	1,068	1,116	1,156	1,199	4,538
Total	6,113	5,004	1,156	1,199	13,472

Table 24 – Customer service operating expenditure (\$'000s, 2011 Real)

Customer interaction and treatment

Customers are actively engaged with the AMI program. They are seeking to be provided with relevant information regarding the AMI program, and seeking a positive experience in relation to their specific meter exchange.

Customer interaction and treatment activities relate to the customer's interaction with the Business. These activities include:

- Management and support services relating to the customer interaction associated with the mass rollout of AMI meters, including:
 - Customer notification (consistent with Victorian industry AMI communication process as agreed with the Victorian Government);
 - Response/follow-up of 'return to sender' mail outs;
 - Response to detailed customer enquiries (beyond capability of call centre);
 - Response to customer complaints;
 - Response to customer installation exceptions; including defects, refusal, access issues etc;
 - Provision of field based Licensed Electrical Inspectors to case manage level 1 customer defects (where customers are left off supply); and
 - Local community stakeholder engagement (MPs, Councils, associations).
- Materials, mail-out and advertising costs, including:
 - AMI pre-exchange letter mail-outs (two for every installation);

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- Customer information packs, left at time of meter installation;
- Mail outs relating to customer installation exceptions; and
- Local advertising on rollout activities on a regional basis.
- Installation claim costs, including:
 - Customer claims (net of payments recovered from contract installers);
 - EWOV referrals and complaints; and
 - Guaranteed service level payments associated with missed installation appointments.

Call centre

This cost category comprises the incremental costs associated with providing a call centre service to support the AMI rollout. The costs are primarily full time equivalents (FTE) driven, providing telephone-based customer response service within prescribed Grade of Service (GOS) in regards to:

- General enquiries and concerns relating to AMI rollout;
- Commercial customers seeking to make installation appointments;
- Customers advising of access issues; and
- Customer complaints and claims.

Powercor Australia has found through an examination of actual 2010 data that the average call handling time in relation to AMI rollout enquiries is 500 seconds.

The Business has experienced over the 2009-11 period increasing customer engagement with the AMI rollout program as customer awareness has grown through the media and more recent Victorian Government decisions to review the AMI program. As a result, the average number of AMI rollout calls as a percentage of AMI rollout installations over the period June/July 2011 was 64 per cent. Despite this, the Business has, for the purposes of its forecasts, adopted a more conservative 35 per cent forecast consistent with the historical call back rates over 2010.

To determine the FTE requirements, the Business applies the 500 second call duration and 35 per cent call back rate to ensure it has sufficient resources to meet its GOS obligations.

In addition to directly managing call volumes, there are incremental offline support functions required to support the Business' Customer Service Agents. These include:

- Team leaders;

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- Training and documentation administration;
- Quality monitoring assessor; and
- Technical response.

Revenue management

This cost category includes the incremental revenue management costs associated with the AMI rollout. It comprises two activities:

- Addressing and resolving '*final read*' (and hence billing) discrepancies with the removed non-AMI meters; and
- Addressing and resolving revenue protection issues associated with the meter exchanges.

Actual data over the 2010 period demonstrates a discrepancy rate of 12 per cent of final reads. Each discrepancy takes on average 10 minutes to resolve.

The Draft Determination assumes that final read discrepancy is driven by low quality readings taken by AMI meter installers. This is not the case. As noted by Impaq, the field force service providers have contractual service level requirements with respect to final read data. Whilst a small number of final read errors do occur due to field force service providers, most discrepancies are driven by:

- Previous cyclic meter reads being in error;
- Previous cyclic meter reads have been estimated; and
- Identified network tariff errors at meter exchange.

In relation to revenue protection, experience for the AMI rollout to date has found 1.5 per cent of meter exchange sites have some form of revenue protection issue.

Revenue protection issues may involve identifying fraudulent activity with the existing meter installation but also sites where the existing as-built metering arrangement is found not to be correctly metering the network tariff the customer has been assigned to.

Impaq assert that based on conference papers Impaq has reviewed, other utilities identify meter fraud percentages in the range 0.1 to 0.5 per cent. Whilst this may be the case in BAU environment, that interacts with only a very small portion of customer sites, the AMI rollout program requires the Business to visit all customer sites greatly increasing the likelihood of fraud being detected.

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Community engagement and education

The Business forecasts include incremental costs in 2012-13 to develop and distribute additional community engagement education information regarding the AMI program. The majority of these costs are incurred in 2012.

In 2011, the Victorian Government announced a review of the AMI program. This review is ongoing and not expected to be completed until the end of 2011. This review, coupled with a number of media campaigns targeting the AMI program has created significant uncertainty and confusion regarding the AMI program in the community.

On completion of the Victorian Government review, it is anticipated the Business will be required to undertake further AMI rollout education programs to regain the confidence of the community in the AMI program.

Customer service overheads

In addition to the incremental AMI rollout program, the Business allocates a portion of corporate customer service overhead costs to the AMI program. The allocation is made consistent with the Business' Regulatory Accounts for 2009 and 2010. These allocations have been audited and approved by Deloitte as being within the AMI Scope. The amount included in the forecasts is consistent with the allocation for 2009-10.

8.5 Communication operations operating expenditure

The AER rejected the Communication Operations Operating Expenditure forecasts in Powercor Australia's Initial Budget Application on the basis of its assessments of AMI technology, AMI Communications Control, Technology Acceptance and HAN Support. This section addresses each of these issues in turn.

8.5.1 AER's Draft Determination

AMI technology

In its Draft Determination¹²⁴, having regard for advice from Impaq¹²⁵, the AER assumed a 0.5 per cent p.a. failure rate based on the experience of an Italian smart meter provider (ENEL), which reported failure rates of 0.3 per cent per annum. The AER accepted this rate as the basis for concluding that Powercor Australia's FTE estimates are too high.

Given the high reliability of the SSN network, the AER and Impaq concluded that minimal effort would be required to manage communications operations. The AER

¹²⁴ Refer page 193 of the Draft Determination

¹²⁵ Refer pages 40-41 and 107-108 of the Impaq report

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and Impaq concluded that, with training, non-AMI NOC personnel could support AMI communications operations.

Powercor Australia does not agree with the AER's assessment and does not consider that it provides an appropriate basis for determining the '*commercial standard*' for Communication Operations Operating Expenditure.

As noted in section 3.2 of Deloitte's report, the AER and Impaq have included fault detection, investigation, resolution, and reporting into the AMI Technology work stream. However, these activities are actually included and costed in the AMI Communications Control (ACC) work stream rather than the AMI Technology work stream. The AMI Technology work stream includes costs for the AMI solutions group, the security manager, a delivery manager and a vendor manager (four FTEs). It also includes '*AMI solutions other*' costs (such as training, travel and facilities). Importantly, this work stream does not include fault detection, investigation, resolution, and reporting.

Deloitte's report concludes that it is reasonable for Powercor Australia to budget in the AMI Technology work stream for three FTEs to perform the activities related to general management of AMI solutions, security management, delivery management and vendor management.

AMI communications control

In its Draft Determination¹²⁶, having regard for advice from Impaq¹²⁷, the AER assessed that activities required to support data delivery and prescribed market transactions are already included in Meter Data Services and IT Operating Expenditure forecasts.

Powercor Australia does not agree with the AER's assessment and does not consider that it provides an appropriate basis for determining the '*commercial standard*' for Communication Operations Operating Expenditure.

As noted in section 3.2 of Deloitte's report, while Powercor Australia's Initial Budget Application stated that the ACC work stream includes data delivery and prescribed market services, costs for these activities were not actually included in this work stream in Powercor Australia's Initial Budget Application.

Mandatory firmware upgrades for the SSN NICs, and meter software vendors create a significant workload for 2012 and 2013. It is expected that the number of upgrades will decrease as technology matures. ACC work stream costs are driven by a long supply chain lead time (6 to 9 months) for the installation of the most up-to-date NIC cards and meters on the network.

¹²⁶ Refer page 193 of the Draft Determination

¹²⁷ Refer pages 41 and 108 of the Impaq report

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Deloitte's analysis of the ACC work stream indicates that a reduced number of FTEs are required over the 2012-15 period. In order to improve reliability, SSN recommends daily monitoring of the network. This requires manual work.

Deloitte's assessment is that the skills required to manage the AMI network are distinct from those required to manage the traditional distribution network. Given the maturity of the network and Powercor Australia's AMI capability, there is a high risk in consolidating these NOCs and cross-training distribution network management staff to manage a complex IP-based data communications network.

On the advice of Deloitte, Powercor Australia has reclassified \$1.6 million (\$2011) over 2012-15 for AMI Communications Control to communication installation capital expenditure as this expenditure relates to communication device activation and firmware upgrades.

Technology acceptance

In its Draft Determination¹²⁸, having regard for advice from Impaq¹²⁹, AER assessed that activities required to support Powercor Australia's technology acceptance are included in the IT, Communications or Meter Supply Capital Expenditure.

Powercor Australia does not agree with the AER's assessment and does not consider that it provides an appropriate basis for determining the '*commercial standard*' for Communication Operations Operating Expenditure.

Deloitte concluded that the AMI metering infrastructure is still an emerging technology and vendors are continuing to evolve and refine their products. In order to maintain service levels and network reliability, Powercor Australia must conduct thorough testing to identify all defects prior to deploying changes to the network. Considering the complexity of the hardware, firmware and configuration environment, Deloitte has assessed that the evaluation of a workload of 6 to 7 FTEs is fair and reasonable.

However, as discussed in section 3.2 of its report, Deloitte's detailed review of the functions and activities related to Powercor Australia's technology acceptance determined that this expenditure should be reallocated to Communication Installation Capital Expenditure. This is because the majority of the work conducted in this activity contributes to increasing the value of the AMI solution.

8.5.2 Powercor Australia's Amended Application

As discussed, Deloitte's report has prepared a bottom up analysis of functions and related activities relevant to Communications Operations Operating Expenditure. Table 25 compares Powercor Australia and Deloitte's forecasts, both of which exclude any provision for HAN Support.

¹²⁸ Refer page 192-193 of the Draft Determination

¹²⁹ Refer pages 41-42 and 109 of the Impaq report

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	2012	2013	2014	2015	Total
Powercor Australia's forecast of Communications Operations Operating Expenditure	1,131	1,131	1,952	1,952	6,166
Deloitte's forecast of Communications Operations Operating Expenditure	1,526	1,526	1,615	1,747	6,413

Table 25 – Comparison of Powercor Australia and Deloitte's forecast of communications operations operating expenditure (\$'000s, 2011 Real)

Table 25 shows that Powercor Australia's forecast of Communications Operations Operating Expenditure is broadly consistent with the detailed bottom up build up undertaken by Deloitte. On this basis, Powercor Australia believes that its forecast is prudent and is consistent with the '*commercial standard that a reasonable business would exercise in its circumstances*'.

Table 26 details Powercor Australia's revised Communications Operations Operating Expenditure forecast and also details the forecasts in its Initial Budget Application and the AER's Draft Determination.

	2012	2013	2014	2015	Total
Powercor Australia Initial Budget Application	3,082	3,082	3,082	3,083	12,330
AER Draft Determination	1,267	1,267	1,267	1,267	5,068
Powercor Australia Amended Application	1,131	1,131	1,952	1,952	6,166

Table 26 – Comparison of communications operations operating expenditure for 2012-15 (\$'000s, 2011 Real)

8.6 Executive and corporate services operating expenditure

8.6.1 AER's Draft Determination

In its Draft Determination¹³⁰, having regard for advice from Impaq¹³¹, the AER did not accept the forecast Executive and Corporate Services Operating Expenditure that Powercor Australia included in its Initial Budget Application. The AER considered that Powercor Australia did not provide sufficient information to support its forecast, which it assessed to be 50 per cent above the Impaq '*bottom-up*' build. The AER substituted Powercor Australia's forecast with one prepared by Impaq, which the AER considered to be representative of a '*commercial standard*'.

Powercor Australia does not agree with the AER's assessment and does not consider that its replacement allowance provides an appropriate basis for determining the '*commercial standard*' for Executive and Corporate Services Operating Expenditure. Powercor Australia considers that the AER failed to consider:

¹³⁰ Refer page 195-196 of the Draft Determination

¹³¹ Refer pages 44-45 and 111-112 of the Impaq report

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- All the regulatory activities required to be undertaken to support the Regulated Services business;
- All the finance related activities required to support the Regulated Services business; and
- Powercor Australia's historically incurred executive and corporate costs.

8.6.2 Powercor Australia's Amended Application

Powercor Australia's Executive and Corporate Services Operating Expenditure comprises regulatory and finance costs supporting the Regulated Services business.

The AER's Draft Determination includes an allowance for the next price review for the period 2016-20 but no allowance for BAU activities. However, Powercor Australia is required to incur costs associated with a variety of regulatory activities on an annual basis including:

- Preparing Charges Applications in 2012, 2013, 2014 and 2015;
- Auditing the AMI data input tables in 2011, 2012, 2013 and 2014 to confirm that:
 - The expenditure incurred is within the scope of the AMI activities set out in S2.10 of the Electricity Industry Act 2000 Notice Pursuant to Clause 14B.1 of the AMI Cost Recovery Order at the time of commitment to or incurring that expenditure; and
 - The expenditure incurred has been incurred in the amount claimed for the relevant year ended in accordance with accounting policies as disclosed in the statutory financial report of the Business.
- Meeting performance and regulatory account reporting requirements in relation to Regulated Services activities for 2011, 2012, 2013 and 2014;
- Preparing annual pricing proposals as they relate to Regulated Services activities for 2013, 2014, 2015 and 2016; and
- Undertaking internal compliance reporting for Regulated Services activities for the Board and AER for 2011, 2012, 2013 and 2014.

In addition to the BAU activities, Powercor Australia must also participate on a regular basis in:

- Metering and meter data service related rule and code change processes conducted by the Victorian Government, AEMO or the AEMC;
- The metering contestability review scheduled for 2013 to be conducted by the AEMC; and

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- Spot compliance inquiries received from the AER.

Outside of the BAU processes identified above, Regulated Services will also be subject to a further charge review over the period 2014-15 to establish charges for the period 2016-20. Preparing and participating in regulatory reviews consumes not only internal labour resources (as identified by Impaq) but also external resources in terms of legal, economic, modelling or engineering specialists. None of these costs has been considered by the AER in the Draft Determination.

The AER made an allowance for one full time equivalent to conduct finance activities associated with Regulated Services. This allowance ignores the many BAU finance activities required to support Regulated Services including:

- Preparing annual Regulated Services budgets;
- Undertaking business reporting/month end reporting for Regulated Services activities;
- Regulated Services program reporting to the Board and AMI Steering Committee;
- Preparing monthly Regulated Services forecasts;
- Undertaking work in progress clearance for Regulated Services activities;
- Preparing annual regulatory accounts for the Regulated Services portion of Powercor Australia;
- Preparing annual/half year statutory accounts as they relate to the Regulated Services portion of Powercor Australia;
- Providing support/advice to the Regulation Group in preparing Charges Applications, Budget Applications, Revised Budget Applications and ad hoc requests from the AER and/or Victorian Government;
- Providing financial support to the AMI program, AMI program management team and AMI project leaders; and
- Performing reconciliations related to Regulated Services.

Table 27 and Table 28 set out the time requirement, full time equivalent requirement and other auxiliary costs related to the above activities. These tables apply the labour rate assumptions adopted by Impaq. Because finance and regulation are shared activities across CitiPower and Powercor Australia, Table 27 and Table 28 relate to the total costs across both Businesses. For the purposes of the Budget Templates, these costs are separated by applying the three factor model applied in the preparation of the regulatory accounts. Finally, it should be noted that in the case of regulatory costs,

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synergies between CitiPower and Powercor Australia are limited given the separate *Electricity Distribution Licence*.

Task	Time	Weeks per annum	No. FTE's	Total Man Weeks	Cost
Finance activity					
Annual Budget	2.5 weeks each month for 2.5 months	6	3	18	35
Business Report / month End	1 week per month	12	2	24	47
Program reporting - Board, Steering Committee	1 day per month	12	1	12	23
Monthly Forecast	1 week per month	12	2.5	30	58
WIP Clearance	1 days every month	2	1	2	5
Annual Regulatory Accounts	1 month per year	4	2.5	10	19
Annual / Half Year Statutory Accounts	2 weeks	2	3	6	12
Provision of support to Regulation	4 weeks	4	3	12	23
Financial support to Program, Management Team, Project Managers	4 days every month	10	3	29	56
Reconciliations	1.5 days every month	4	2	7	14
Finance total	Total weeks			150	292

Table 27 – CitiPower and Powercor Australia's finance BAU costs (\$'000 2011)

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Task	Time	Weeks per annum	No. FTE's	Total Man Weeks	Cost
Regulation BAU activity					
Preparation of Annual Charges Application for Powercor Australia	1 month per year	4	2	8	43
Preparation of Annual Charges Application for CitiPower	1 month per year	4	2	8	43
Annual RIN reporting (for metering only excl financial data) for Powercor Australia	1 month per year	4	1	4	21
Annual RIN reporting (for metering only excl financial data) for CitiPower	1 month per year	4	1	4	21
Externally driven metering related code and rule changes and participation in industry forums related to Regulated Services activities	1 month per year	4	1	4	21
External compliance review and enquiries (AER, AEMO)	2 weeks	2	1	2	11
Internal regulatory questionnaire (metering only)	1 week	1	1	1	5
Regulatory advice in relation Annual Regulatory Accounts for Powercor Australia	1 week	1	1	1	5
Regulatory advice in relation Annual Regulatory Accounts for CitiPower	1 week	1	1	1	5
Annual Pricing Proposal (metering charges only) for Powercor Australia	1 week	1	1	1	5
Annual Pricing Proposal (metering charges only) for CitiPower	2 week	1	1	1	5
External audit fees for Powercor Australia metering costs	External				21
External audit fees for CitiPower metering costs	External				19
Miscellaneous legal opinion	External				51
Regulation BAU total					277

Table 28 – CitiPower and Powercor Australia's regulation BAU costs (\$'000 2011)

Table 27 and Table 28 clearly demonstrate that the costs sought by Powercor Australia are consistent with the forecasts proposed in the Initial Budget Application. They also show that, even assuming the AER's labour rate forecasts, the allowances proposed in the Draft Determination were inadequate.

It is also instructive to compare Powercor Australia's actual incurred Executive and Corporate Costs category costs over the period 2009-11 with the Draft Determination.

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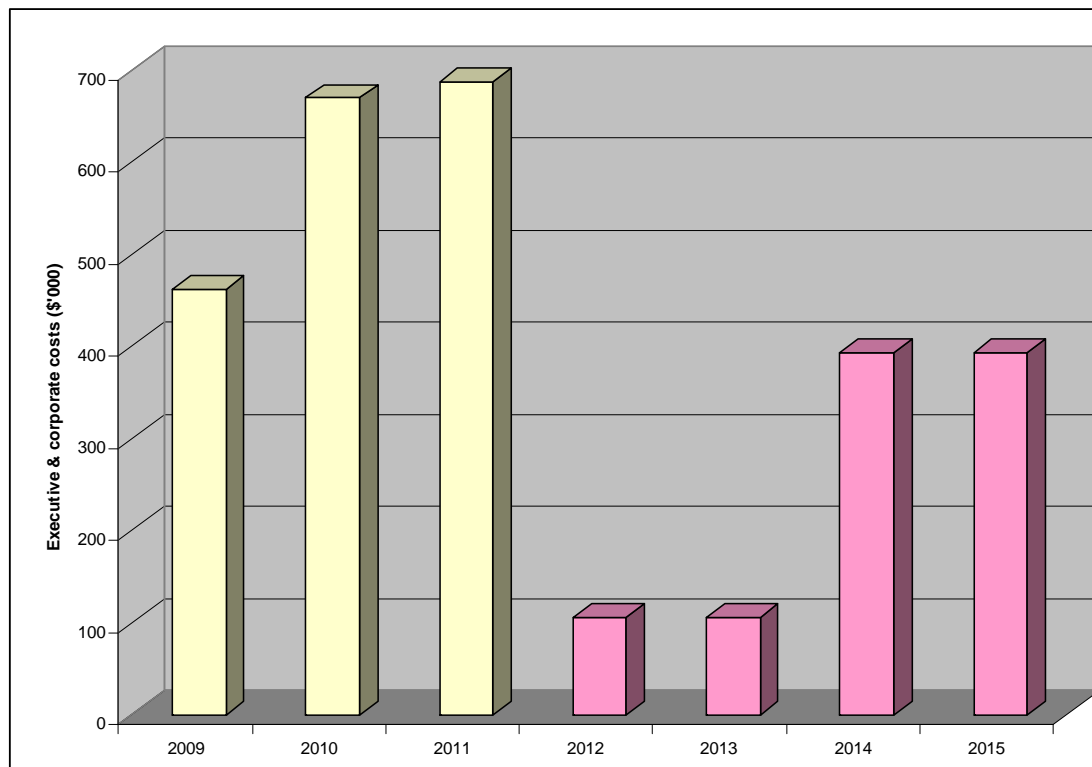


Figure 15 - Executive and corporate costs (\$'000 2011)

Over the period 2009-10, Powercor Australia's actual audited costs in the Executive and Corporate Costs category have been in the range \$460,000 to \$670,000 per annum (\$2011). The 2011 figure is projected to be similar to that of 2010. When compared with allowances provided in the Draft Determination for the non-price review years (2012-13), the allowances are a quarter of the 2009 figure and a sixth of actual costs for 2010. These differences demonstrate significant short-comings with the scope of activities considered in the Draft Determination and those actually undertaken by Powercor Australia. They highlight that the Draft Determination has not reflected a *'commercial standard'* for prudence.

Powercor Australia has reviewed the Draft Determination and reaffirms its view that the forecasts it presented in the Initial Budget Application are consistent with the *'commercial standard'* and the AMI Scope. The figures proposed in the Draft Determination have failed to incorporate regulation BAU activities, appreciate the scope of finance activities and are inconsistent with the audited historical costs.

Table 29 details Powercor Australia's revised Executive and Corporate Services Operating Expenditure forecast and also details the forecasts in its Initial Budget Application and the AER's Draft Determination.

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	2012	2013	2014	2015	Total
Powercor Australia Initial Budget Application	424	436	638	609	2,108
AER Draft Determination	105	105	393	393	997
Powercor Australia Amended Application	424	436	638	609	2,108

Table 29 – Comparison of executive and corporate services operating expenditure for 2012-15 (\$'000s, 2011 Real)

8.7 IT operating expenditure

8.7.1 AER's Draft Determination

In its Draft Determination¹³², having regard for advice from Impaq¹³³, the AER made the following assessments in relation to Powercor Australia's IT Operating Expenditure:

- Workforce scheduling and mobility – The AER considers that there should be no need for Powercor Australia to further invest in a system that is only required for another two years;
- Meter transaction system – The AER expects the use of the gateway to be limited for AMI purposes;
- Utility Services Bus – The AER considers that the cost of this should be borne across the whole of Powercor Australia; and
- Customer information portal – The AER considers that this is out of scope.

8.7.2 Powercor Australia's Amended Application

Table 30 details Powercor Australia's revised IT Operating Expenditure forecast and also details the forecasts in its Initial Budget Application and the AER's Draft Determination.

	2012	2013	2014	2015	Total
Powercor Australia Initial Budget Application	9,365	9,485	9,710	9,803	38,364
AER Draft Determination	6,463	6,523	5,277	5,304	23,567
Powercor Australia Amended Application	7,332	7,378	6,395	6,427	27,533

Table 30 – Comparison of IT operating expenditure for 2012-15 (\$'000s, 2011 Real)

¹³² Refer page 197 of Draft Determination

¹³³ Refer pages 45-46 and 112-113 of the Impaq report

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Workforce scheduling & mobility

The Draft Determination disallowed costs for workforce scheduling and mobility for the years 2014-15 on the basis the mass deployment process would be completed by the end of 2013.

The Business' Initial Budget Application incorrectly classified costs associated with the data warehouse project under workforce scheduling and mobility. These costs have been reallocated in the Amended Application to be included under the regulatory and performance reporting category. The justification and explanation of the data warehousing project is included in IT capital expenditure discussion.

	2012	2013	2014	2015	Total
Powercor Australia Initial Budget Application	1,275	1,275	1,297	1,297	5,145
AER Draft Determination	1,275	1,275	-	-	2,550
Powercor Australia Amended Application	1,051	1,051	-	-	2,102

Table 31 – Comparison of workforce scheduling and mobility operating expenditure (\$'000s, 2011 Real)

Meter data management

The Draft Determination made a number of adjustments to the meter data management IT operating expenditure allowance.

The first adjustment related to the HAN and CEDA projects. These adjustments were justified by the AER on the basis that whilst these projects should be encouraged, they are not within the AMI Scope. The Business has removed these projects from its Amended Application.

The basis for the second set of adjustments was:

- Market Transaction System (**MTS**) was a system predominantly used for business to business transactions and thus, the cost of these services should be recovered through Alternative Control Services;
- The cost of the Utility Service Bus (**USB**) should be borne across the entire Business i.e. Standard Control, Alternative Control and Regulated Services; and
- The costs of Powercor Australia operating its Meter Data Management System (**MDMS**) was too high and in the absence of further detail, the Draft Determination substituted Powercor Australia's operating costs with those of other distributors.

Powercor Australia has prepared a revised estimate for operating its MDMS, which is comparable to the amount estimated by Impaq.

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The Business however does not accept the arguments put forward in the Draft Determination for excluding operating costs associated with the USB. The USB was implemented for the purposes of the AMI program. It did not exist prior to AMI and even today, usage by non AMI applications is extremely limited.

The initial implementation of the USB was on Oracle Fusion 10g, with some third party components. Oracle Fusion 10g has proven to be an unreliable platform requiring more resources to support than initially expected.

	2012	2013	2014	2015	Total
Powercor Australia Initial Budget Application	4,743	4,803	4,868	4,934	19,347
AER Draft Determination	1,841	1,841	1,732	1,732	7,146
Powercor Australia Amended Application	2,921	2,824	2,623	2,551	10,918

Table 32 – Comparison of meter data management operating expenditure (\$'000s, 2011 Real)

Performance and regulatory reporting

The Draft Determination accepted the Business' proposed performance and regulatory reporting IT operating expenditure forecasts.

As noted in the discussion under workforce scheduling and mobility IT operating expenditure, the Business' Initial Budget Application incorrectly classified costs associated with the data warehouse project under workforce scheduling and mobility. These costs have been reallocated in the Amended Application to be included under the regulatory and performance reporting category. The justification and explanation of the data warehousing project is included in IT capital expenditure discussion.

	2012	2013	2014	2015	Total
Powercor Australia Initial Budget Application	54	54	54	54	216
AER Draft Determination	54	54	54	54	216
Powercor Australia Amended Application	67	151	281	358	857

Table 33 – Comparison of performance and regulatory reporting operating expenditure (\$'000s, 2011 Real)

9. Annual revenue requirement

This section sets out Powercor Australia's revenue requirement for the period 2012-15. Required revenue has been calculated in accordance with the building blocks approach as prescribed by clause 5E of the AMI Cost Recovery Order.

Clause 4.1(b) of the AMI Cost Recovery Order requires the methodology to be used by the AER to be a '*building block*' approach including:

- A return on capital;
- Depreciation;
- Maintenance and operating expenditure;
- A benchmark allowance for corporate income tax; and
- Any other building blocks required by clauses 5E of the AMI Cost Recovery Order.

In addition, clause 5E.3 of the AMI Cost Recovery Order requires that in using the '*building block*' methodology, the AER:

- Provide for the maintenance and operating expenditure in the Approved Budget for the subsequent AMI budget period (the balance of the Approved Budget being the capital expenditure for that year;
- Provide a return on capital for 2012 and 2013 using a Weighted Average Cost of Capital (WACC) calculated in accordance with clauses 4.1(h) and (i);
- Provide a return on capital for 2014 and 2015 using a WACC calculated in accordance with clause 4.(j);
- Apply 4.1(g) for the purposes of calculating depreciation; and
- Apply clauses 4.1(e) and (f) for the purposes of determining a benchmark allowance for corporate income tax.

The AER has issued an AMI 2012-15 Charges Model. Powercor Australia has populated the cells indicated to be DNSP data input fields.

The 2010 inputs are taken from tables of costs and quantities that have been derived from the Regulatory Accounts.

In accordance with clause 5H.1(b) of the AMI Cost Recovery Order, the differences between the forecast expenditure in the Final Determination and actual spend for 2010 is outlined below.

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	Actual 2010	Budget 2010
Capital expenditure	99,853	90,859
Operating expenditure	19,953	20,535
Total Operating and Capital Expenditure	119,807	111,394
Revenue	71,093	69,853

Table 34: 2010 actual and budget expenditure (\$'000 nominal)

The 2012-15 AMI data inputs are taken from Powercor Australia's Amended Application.

The remainder of this section steps through each of the building blocks identified above.

9.1 WACC for the subsequent AMI WACC period

9.1.1 Powercor Australia's WACC parameters from 1 January 2012 to 31 December 2013

In accordance with the definition of '*initial AMI WACC period*' in the AMI Cost Recovery Order, the WACC parameters from 1 January 2012 to 31 December 2013 have been determined by the AER in the Final Determination for the 2009-11 AMI period.

9.1.2 Powercor Australia's WACC parameters from 1 January 2014 to 31 December 2015

Market observables for subsequent AMI WACC period

Clause 4.1(j) of the AMI Cost Recovery Order requires the market observable WACC parameters be measured in a period in 2013 proposed by the DNSP and agreed by the AER. The market observables must be determined in accordance with the Statement of Regulatory Intent (**SORI**) issued by the AER pursuant to clause 6.5.4 of the Rules.

Powercor Australia does not accept the placeholder market observable WACC parameters that the AER included in its Draft Determination because:

- The placeholder debt risk premium is based on a methodology that is now under appeal. The appropriate methodology for the measurement of the debt risk premium in the 2013 period will depend on the circumstances and data availability at that time; and
- Market observables are currently highly volatile and there is little to be gained from applying a placeholder based on more recent market data. For instance, the AER has proposed a more recent placeholder nominal risk free rate of 5.4 per cent whereas the rate is currently about 4.5 per cent.

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For these reasons, Powercor Australia does not propose to alter the values originally proposed which are shown in Table 35.

WACC parameters	Proposed values
10 year risk free rate (nominal)	4.63
Debt risk premium	4.00

Table 35: Market observables for AMI period 1 January 2014 to 31 December 2015, per cent

Prior to 2013, Powercor Australia will submit a proposed measurement period for the market observables. Consequently, the approved market observables will replace the market observable placeholders as proposed above.

Non-market observables for subsequent AMI WACC period

Clause 4.1(j)(ii) of the AMI Cost Recovery Order requires the non-market observables to be determined in accordance with the SORI issued by the AER pursuant to clause 6.5.4 of the Rules.

Powercor Australia accepts the gearing ratio and equity beta that the AER has included in its Draft Determination but does not accept the value for the market risk premium (**MRP**).

The MRP applying in 2014 and 2015 must be determined in accordance with the SORI issued by the AER pursuant to clause 6.5.4 of the NER. Clause 6.5.4(g) of the NER requires that a determination must be consistent with the SORI unless there is persuasive evidence justifying a departure from a value set in the SORI. The SORI sets a MRP value of 6.5%. The AER considers that the evidence presented in the recent South Australian and Queensland Gas Access Arrangements for a MRP of 6.0% is persuasive for the purposes of clause 6.5.4(g) of the NER.

The AER's evidence included:

- Historical excess return estimates for three time periods, 1883–2010, 1937–2010 and 1958–2010. These estimates provide a range of 5.9–6.4 per cent if calculated on an arithmetic mean basis and a range of 3.8–4.8 per cent if calculated on a geometric mean basis;
- DGM based estimates of the MRP incorporating reasonable assumptions provide an estimated range for the MRP of approximately 4.5–5.6 per cent;
- Implied volatility from the prices of options on the ASX 200 index has returned to pre-GFC levels, which indicates that the MRP is unlikely to be above pre-GFC levels;

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- Surveys of market practitioners prior to the GFC that supported 6 per cent as the most commonly adopted value for the MRP;
- Statements by the Reserve Bank of Australia (**RBA**), the International Monetary Fund (**IMF**) and the Organisation for Economic Co-operation and Development (**OECD**) that the economic and financial markets outlook for Australia is robust.

The contentions contained in the above decision are unsustainable in the face of the quantitative and qualitative evidence now available. In particular, the RBA has changed its position with regards to the risks facing the Australian economy and market evidence has shifted markedly since that Decision. As recently as the 23rd of August two of Australia's most senior economic officials described the current market conditions as '*extreme*'. The Reserve Bank's Deputy Governor, Ric Battellino stated '*market volatility had made the economy's prospects more uncertain*' while Secretary to the Treasury, Martin Parkinson predicted:

Unfortunately, recurrent episodes of volatility are likely to be a feature of global financial markets over the next few years. Such is the sense of concern over the lack of credible policy responses, repeat episodes may be triggered by apparently innocuous events or pieces of information ... this risks adding a dimension of macro-economic instability into the Australian economy of a sort that we have not experienced for many years.

The Reserve Bank of Australia (RBA) has also sounded a cautionary note, raising the possibility of further turmoil on financial markets, which would have adverse ramifications on the Australian economy¹³⁴.

Despite the recent financial assistance package for Greece and the agreement to lift the debt ceiling in the United States, sovereign debt concerns continue to weigh on global sentiment and a disorderly resolution of the current problems would lead to a considerably worse outcome for the global economy than suggested by the central forecast.

The RBA has commented on the fluctuations in equity markets, declaring, in its monetary policy statement, that¹³⁵:

The Australian share market has fallen in line with overseas equity markets... Concerns over European sovereign debt and the pace of the global recovery have weighed heavily on investor sentiment, as have domestic factors such as the weakness in consumer discretionary spending. At the sectoral level, financial stocks have declined by more than the overall market, which is consistent with the underperformance of financial stocks globally....This decline has been associated with an increase in short selling of shares of the major banks. A number of insurance groups have also announced that they expect their margins to come under pressure as a result of prospective increases in reinsurance costs. Resource stocks have also declined and they are now 16 per cent below their two-year peak reached in April. The falls mostly reflect some levelling out in commodity prices and concerns that Chinese authorities may seek to slow growth amid rising inflationary pressures. Consumer discretionary stocks have significantly underperformed the broader market...Worse-than-expected sales as well as lower profit guidance by some major groups in the sector have underscored the difficult operating environment, including aggressive discounting, consumer caution and increased competition from online shopping.

¹³⁴ Reserve Bank of Australia, Statement on Monetary Policy, August 2011; chapter 1, page 7.

¹³⁵ Reserve Bank of Australia, Statement on Monetary Policy, August 2011; chapter 4, page 62.

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The IMF has warned of the likelihood of a mild slowdown of the global economic expansion, in a recent update to the World Economic Outlook report which was released in June 2011¹³⁶. The IMF summarised the prospects for world economic growth with reference to the fragility of the US economic recovery, and the likely negative impact on investment from renewed financial instability:

Activity is slowing down temporarily, and downside risks have increased again. The global expansion remains unbalanced. Growth in many advanced economies is still weak, considering the depth of the recession. In addition, the mild slowdown observed in the second quarter of 2011 is not reassuring. Growth in most emerging and developing economies continues to be strong. Overall, the global economy expanded at an annualized rate of 4.3 per cent in the first quarter, and forecasts for 2011–12 are broadly unchanged, with offsetting changes across various economies. However, greater-than-anticipated weakness in U.S. activity and renewed financial volatility from concerns about the depth of fiscal challenges in the euro area periphery pose greater downside risks. Risks also draw from persistent fiscal and financial sector imbalances in many advanced economies, while signs of overheating are becoming increasingly apparent in many emerging and developing economies. Strong adjustments—credible and balanced fiscal consolidation and financial sector repair and reform in many advanced economies, and prompt macroeconomic policy tightening and demand rebalancing in many emerging and developing economies—are critical for securing growth and job creation over the medium term.

The IMF discussed the turbulence in financial markets:

After easing through much of the first half of 2011, global financial conditions have become more volatile since late May... This reflects market concerns about sovereign risks related to developments in the euro area periphery and the recent softening in activity and persistent housing market weakness observed in the United States. Symptoms include rising sovereign credit default swap spreads in certain euro area economies, retreating global stock prices, and falling long term bond yields in the major advanced economies. In addition, the June 2011 Global Financial Stability Report (GFSR) Market Update emphasizes the insufficient pace of progress on banking system repair, notably in Europe, as well as risks related to re-leveraging in various market segments.

The IMF has also emphasised the possibility of a further deterioration in investment conditions:

The balance of risks points down more than at the time of the April 2011 World Economic Outlook. Downside risks due to heightened potential for spillovers from further deterioration in market confidence in the euro area periphery have risen since April (see the June 2011 GFSR Market Update¹³⁷). Market concerns about possible setbacks to the U.S. recovery have also surfaced. If these risks materialize, they will reverberate across the rest of the world—possibly seriously impairing funding conditions for banks and corporations in advanced economies and undercutting capital flows to emerging economies. In addition, banks in advanced economies continue to face a wall of refinancing requirements, and a squeeze on banks' wholesale funding could reverse the recent normalization of lending standards. Near-term risks for sharper or more drawn-out negative spillovers from Japan to other economies cannot be ruled out either.

¹³⁶ International Monetary Fund, World Economic Outlook Update, An update of the key WEO projections; released 17th June, 2011.

¹³⁷ International Monetary Fund, Global Financial Stability Report, Market Update, June 2011.

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The attached reports of NERA Economic Consulting, Value Adviser Associates and Capital Research indicate that implied volatility and market risk has increased in recent months, thus supporting the above observations. This suggests that:

- The AER's evidence in support of a departure from the SORI MRP value of 6.5 percent (which is not persuasive in light of the attached NERA, Value Adviser Associates and Capital Research reports) is less relevant in current market conditions and therefore not persuasive in the context of this application; and
- Current market conditions are similar to the conditions that existed in October 2010 when the AER released its Victorian electricity distribution final determination in which the AER considered that the SORI value of 6.5 percent was appropriate for that determination.

The key conclusions from the attached NERA Economic Consulting, Value Adviser Associates and Capital Research reports are:

- The historical evidence indicates that the Australian market portfolio was substantially less risky in the later part of the 19th century and the earlier part of the 20th century than in the later part of the 20th century and the start of the 21st century. The data that Brailsford, Handley and Maheswaran (2011) provide indicate that the standard deviation of the return to the Australian market portfolio has been twice as high in the later period than in the earlier period. This empirical result casts considerable doubt on the wisdom of the AER's decision to combine, without any adjustment for differences in risk, data from the earlier period with data from the later period in order to estimate the MRP. Adjusting the earlier data for the lower risk in that period will likely lead to an MRP adjusted for the value of imputation credits of well above 6.5 per cent per annum. Throwing out the earlier data will lead to an MRP adjusted for the value of credits of 6.4 per cent – that is, a figure closer to 6.5 per cent than to 6 per cent;
- A WACC that is in part based on an estimate of the MRP that places a positive weight on the geometric mean of a sample of annual excess returns to the market portfolio will – so long as the other components of the WACC have been correctly computed – produce a downwardly biased estimate of the revenue that the market requires in any one year on the regulated asset base;
- If the excess return to the market portfolio is serially independent – and the evidence against the hypothesis is weak – then an unbiased estimate of one of the discount factors used to smooth prices whilst leaving the NPV of post-tax revenue unchanged will require one use an estimate of the MRP that exceeds the arithmetic mean of a sample of annual excess returns to the market portfolio and that places a negative weight on the geometric mean;
- An examination of the five survey papers that the AER reviews indicates that the AER's summary of the results of these surveys is not unreasonable. However, adjusting the results of the surveys for the value that the AER assumes that the

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market places on imputation credits yields an imputation-adjusted MRP of precisely 6.5 per cent;

- Current conditions and indicators suggest that the MRP is above its long-term average including:
 - The spread between BBB bond yields and AAA bond yields;
 - The volatility of the return to the Australian market portfolio implied by option prices; and
 - Recent forward MRP estimates based on the dividend growth model.

Powercor Australia considers that on the basis of the above evidence the appropriate placeholder WACC should incorporate the existing SORI value of the MRP of 6.5 per cent.

Table 36 outlines Powercor Australia's proposed non-market observable WACC parameters.

WACC parameters	Proposed values
Gearing (debt to equity ratio)	60.00%
Market risk premium	6.50%
Equity beta	0.8

Table 36: Non-market observables for AMI period 1 January 2014 to 31 December 2015

9.1.3 Debt raising costs

In accordance with clause 4.1(h) of the AMI Cost Recovery Order, debt raising costs for the period 1 January 2009 to 31 December 2013 is 12.5 basis points. Powercor Australia accepts the AER's Draft Determination to set debt raising cost at 10.8 basis points for the period 1 January 2014 to 31 December 2015. Powercor Australia accepts the AER's Draft Determination to allow the recovery of approved debt raising costs as an operating expenditure line item.

9.1.4 Powercor Australia's WACC parameters from 1 January 2012 to 31 December 2015

Powercor Australia accepts all of the WACC parameters in the AER's Draft Determination other than the market risk premium for 2014 and 2015, which the AER considers should be 6.5 per cent rather than 6.0 per cent

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The table below sets out the WACC parameters from 1 January 2012 to 31 December 2015.

Parameter	2012	2013	2014	2015
Nominal risk free rate	4.63%	4.63%	4.63%	4.63%
Debt risk premium	4.00%	4.00%	4.00%	4.00%
Debt raising costs	0.13%	0.13%		
Cost of debt	8.76%	8.76%	8.63%	8.63%
Equity beta	1.00	1.00	0.80	0.80
Market risk premium	6.00%	6.00%	6.50%	6.50%
Cost of equity	10.63%	10.63%	9.83%	9.83%
Value of debt as a proportion of the value of equity and debt	60.00%	60.00%	60.00%	60.00%
Value of equity as a proportion of the value of equity and debt	40.00%	40.00%	40.00%	40.00%
Inflation	2.56%	2.56%	2.56%	2.56%
Nominal WACC	9.51%	9.51%	9.11%	9.11%

Table 37: WACC parameters for AMI period 1 January 2012 to 31 December 2015

9.2 Inflation

Forecast inflation is not a WACC parameter as defined in the AMI Cost Recovery Order. It is proposed that:

- Actual inflation be based on the same method applied in the Final Determination for the 2009-11 AMI period and in the AMI Cost Recovery Order, that is inflation is calculated as CPI_{t-1}/CPI_{t-2} where CPI is the Consumer Price Index-All Groups Index for the Eight State Capitals as published by the Australian Bureau of Statistics for the September Quarter; and
- Forecast inflation be assumed 2.56 per cent consistent with the Final Determination for the 2009-11 AMI period.

9.3 Metering asset base

Clause 5E.2 of the AMI Cost Recovery Order sets out how the opening value for the metering asset base must be calculated. That is:

$$\text{Opening Metering Asset Base}_{2012} = \text{Opening Metering Asset Base}_{SD} + \text{Capital Expenditure}_{IABP} - \text{Depreciation}_{IABP} - \text{Disposals}_{IABP}$$

Capital Expenditure_{IABP} is actual capital expenditure in 2009 and 2010 (determined in accordance with clauses 5I.2 and 5I.10) and capital expenditure for 2011. Depreciation_{IABP} is to be calculated on the Opening Metering Asset Base_{SD} and actual

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capital expenditure in 2009 and 2010 (determined in accordance with clauses 5I.2 and 5I.10) and capital expenditure for 2011 using asset lives in accordance with clause 4.1(g) and Disposals_{IABP} is actual disposals in 2009 and 2010 and forecast disposals in 2011.

The table below presents the calculation of the opening metering base. Capital expenditure is net of customer contributions.

	2009	2010	2011
Opening asset base	36,464	64,737	149,383
Capital expenditure	37,901	102,637	108,037
Depreciation	9,628	17,990	27,980
Disposals	-	-	-
Closing asset base	64,737	149,383	229,440

Table 38: Roll forward of the metering asset base (\$'000 2011)

Capital expenditure for the period 2012-15 is described in this Amended Application. Based on this Amended Application, the roll forward of the asset base from 2012 has been calculated as follows:

	2012	2013	2014	2015
Opening asset base	229,440	309,207	342,691	317,935
Capital expenditure	117,541	79,828	16,628	13,199
Depreciation	37,773	46,344	41,383	41,713
Disposals	-	-	-	-
Closing asset base	309,207	342,691	317,935	289,421

Table 39: Roll forward of the metering asset base (\$'000 2011)

9.4 Return on capital 2012-15

Return on capital has been calculated each year by applying the WACC for the initial AMI WACC period to the average of the opening and closing asset base for that year.

9.5 Depreciation 2012-15

Clause 4.1(g) of the AMI Cost Recovery Order requires, for the purposes of calculating depreciation, that asset lives must be taken to be:

- 15 years in respect of remotely read interval meters;
- 15 years in respect of measurement transformers;
- 7 years in respect of telecommunications systems;

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- 7 years in respect of information technology systems; and
- In respect of accumulation meters and MRIMs, a life ending no later than 31 December 2013.

In accordance with these requirements, Powercor Australia has adopted the asset lives specified under clause 4.1(g) of the AMI Cost Recovery Order. It has been assumed that assets are commissioned in the middle of the year in which the capital expenditure was incurred. Since a nominal WACC is applied to calculate the return on assets building block, depreciation is offset by inflation of the asset base.

9.6 Operating costs 2012-15

Powercor Australia has used the operating costs for the period 2012-15 consistent with this Amended Application.

9.7 Taxation 2012-15

Clause 4.1(b)(iv) of the AMI Cost Recovery Order specifies an allowance for benchmark corporate income tax. Annual tax losses are forecast for 2012-15 and therefore the allowance for corporate income tax has been set to zero for 2012-15.

9.8 Total costs and total revenue

The main requirements governing revenue to be recovered, in a particular year, are set out in the following clauses of the AMI Cost Recovery Order:

- 4.1(o) - this requires that when determining charges for any year from 2010-2015 the regulator shall satisfy itself that the net present value of total costs (calculated in accordance with clauses 4.1(b) to (j)) from 2009 to that year is equal to the net present value of total revenue earned from 2009 to that year. This means that there is an effective true up of costs and revenues from 2009 to the price setting year; and
- 4.1(p) – this enables distributors to propose to recover revenue which is less than building block costs, and recover any under-recovered amount in later years.

Table 40 shows the total costs calculated in accordance with AMI Cost Recovery Order clauses 4.1(b) to (j), the true up of prior years' costs and revenues, and the amount of deferred cost proposed by Powercor Australia.

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	2012	2013	2014	2015
Return on assets	25,599	31,775	31,652	29,845
Depreciation	31,846	40,190	35,749	37,765
Operating costs	25,519	24,606	23,576	23,979
Tax liability	-	-	-	-
Total costs	82,964	96,570	90,977	91,588
Add: True-up of prior years' costs and revenues	4,070	8,758	19,553	15,157
Less: Deferred cost recovery	7,998	17,920	13,891	0
Total revenues	79,035	87,408	96,638	106,745

Table 40: Regulated services costs and revenues (\$'000 nominal)

10. Price control mechanism

Clause 4.1(n) further provides that charges may differ in respect of the following service categories:

- Single phase single element meter;
- Single phase single element meter with contactor;
- Single phase two element meter with contactor;
- Three phase direct connected meter;
- Three phase direct connected meter with contactor;
- Three phase current transformer connected meter; and
- Any other customer or metering class proposed by the distributor and approved by the regulator.

In accordance with these requirements, Powercor Australia applies the following three tariff categories:

- Single phase;
- Three phase direct connected; and
- Three phase current transformer (CT) connected.

The table below summarises the proposed Regulated Services' charges for 2012 to 2015.

	2012	2013	2014	2015
Single phase	103.11	111.89	121.43	131.77
Three phase direct connected	136.00	147.59	160.16	173.80
Three phase CT connected	180.20	195.55	212.21	230.29

Table 41: Regulated service charges (\$ nominal per NMI)

As is currently the practice, Powercor Australia will continue to levy the Regulated Services charges on a per NMI basis.

Attachment 1 – Explanation of CitiPower and Powercor Australia's meter and communications non-contract capital expenditure forecasts for 2012-15

1. Introduction and purpose

This attachment explains how CitiPower and Powercor Australia's (**the Businesses**) meter and communications non-contract capital expenditure forecasts have been developed for 2012-15. It should be read in conjunction with the models that have been provided to the AER entitled *CitiPower meter & comms capex.xls* and *Powercor meter & comms capex.xls* (**the accompanying models**), which provide detailed calculations of their non-contract capital expenditure forecasts.

The Businesses' capital expenditure forecasts for meters and communications are broken into:

- Supply and installation; and
- AMI mass rollout and BAU.

There are therefore eight categories of meter and communications capital expenditure.

There are eleven sources of non-contract capital expenditure that are recovered across these eight categories. A summary of the breakdown of the non-contract capital expenditure forecasts based on these categories and sources is provided in Table 1 and Table 2.

The internal labour rates that the Businesses have been used in preparing their forecasts include the following components - base salary, bonus, superannuation contributions, payroll tax, annual leave provision expense, long service leave provision expense, WorkCover levy, sick leave expense, personal vehicle expenses and State and Federal indirect taxes.

The remainder of this attachment explains how the eleven sources of non-contract expenditure have been calculated for the eight expenditure categories.

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	Meter Supply		Communications Supply		Meter Installation		Communications Installation		Total 2012-15
	AMI Mass Rollout	BAU	AMI Mass Rollout	BAU	AMI Mass Rollout	BAU	AMI Mass Rollout	BAU	
PNS non-contract unit costs		8	5	-	106	1,437	26	-	1,582
PNS logistics		620		4					624
PNS direct costs					7,871		10		7,880
PNS corporate overhead		341		2		67		-	410
PNS margin		51		0	423	80	2	-	556
CHEDS connection services					282	65	0	-	348
CHEDS direct costs					253		398		651
CHEDS project management	1,943		1		1,367		2		3,314
CHEDS margin	525	78	0	0	426	23	48	0	1,101
CitiPower fleet & property overhead		66		1		16		0	83
CitiPower corporate overhead		1,833		15		437		0	2,285
Total	2,468	2,997	7	22	10,727	2,125	486	0	18,834

Table 1 – Summary of CitiPower's non-contract capital expenditure by category and source – 2012-15 (\$'000s, 2011 Real)

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	Meter Supply		Communications Supply		Meter Installation		Communications Installation		Total 2012-15
	AMI Mass Rollout	BAU	AMI Mass Rollout	BAU	AMI Mass Rollout	BAU	AMI Mass Rollout	BAU	
PNS non-contract unit costs		79	4,133	204	2,641	2,654	628	54	10,392
PNS logistics		1,058		7					1,065
PNS direct costs					15,100		733		15,833
PNS corporate overhead		585		13		123		2	724
PNS margin		87		1	940	147	72	3	1,251
CHEDS connection services					611	466	18	14	1,108
CHEDS direct costs					564		9,463		10,026
CHEDS project management	4,057		130		3,106		83		7,377
CHEDS margin	1,160	133	80	3	1,010	83	1,209	6	3,682
Powercor fleet & property overhead		2,575		71		713		19	3,377
Powercor corporate overhead		7,031		194		1,946		51	9,222
Total	5,217	11,549	4,342	493	23,971	6,131	12,205	147	64,056

Table 2 – Summary of Powercor Australia's non-contract capital expenditure by category and source – 2012-15 (\$'000s, 2011 Real)

2. PNS non-contract unit costs

PNS's non-contract unit costs apply to all eight categories of expenditure, other than AMI mass rollout meter supply.

All of these categories of expenditure have been developed based on a build up of volumes and unit rates shown in the accompanying models. The nature of the expenditure in each of these categories is described below.

BAU meter supply

This relates to the provision of accumulation meters, MRIMs and other materials associated with the works necessary to replace meters and time-switches on customer installations due to:

- A tariff change;
- A network supply upgrade;
- Non-code compliance;
- A meter fault;
- Type 6 to type 5 metering change over; and
- Provision of current transformers.

AMI mass rollout & BAU communications supply

This relates to the costs of new or replacement communications equipment that is used to transfer data from AMI meters to a central data collection point. This includes:

- AMI access points and relays;
- External modems;
- Satellite equipment;
- Enclosures in which AMI communications equipment is housed;
- Equipment associated with AMI communications backhaul;
- Network conversion material costs and credits (carrier change over); and
- Ramp-up metering communications material costs.

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AMI mass rollout meter installation

This relates to supply of meter antenna.

BAU meter installation

This relates to all works necessary to remove and install meters and time-switches on customer installations with an AMI meter. This includes:

- The removal and installation of meters and time-switches due to non-code compliance with an AMI meter; and
- The removal and installation of meter and time-switch due to meter fault with an AMI meter.

This also includes all works necessary to replace meters and time-switches on customer installations with MRIMs. It includes:

- The removal and installation of meters and time-switches due to non-code compliance with a MRIM;
- The removal and installation of meter and time-switch due to a meter fault with a MRIM;
- The installation of current transformers.

This also includes all works necessary to remove and install meters and time-switches on customer installations with accumulation meters and time-switches. It includes:

- The removal and installation of meters and time-switches due to non-code compliance with an accumulation meter and/or time-switch; and
- The removal and installation of meter and time-switch due to a meter fault with an accumulation meter and/or time-switch.

AMI mass rollout and BAU communications installation

This includes all costs of the installation of new or replacement communications equipment, used to transfer data from AMI meters to a central data collection point. This includes:

- The installation costs of AMI access points and relays;
- The installation costs of external modems associated with AMI communications
- The installation costs of satellite equipment associated with AMI communications;

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- The installation costs of enclosures in which AMI communication equipment is housed;
- The installation costs of equipment associated with AMI communications backhaul;
- Network conversion material costs and credits (carrier change over); and
- Ramp-up metering communications material costs.

3. PNS logistics

PNS's logistics costs relate to the logistics services that are provided by PNS to CHED Services in relation to BAU meter supply and communications supply.

These non-contract costs have been calculated by applying a ■■■ per cent meter stores recovery rate to the BAU meter supply and communications supply contract unit costs. This is the rate applied by PNS to all materials handled through its standard stores process to recover its stores recovery costs.

4. PNS rollout direct costs

PNS's rollout direct costs relate to AMI mass rollout meter and communications installations.

All of these categories of expenditure have been developed based on a build up of volumes and unit rates in the accompanying models. The nature of the expenditure in each of these categories is described below.

AMI mass rollout meter installation

This category of expenditure includes field management and training in relation to AMI mass rollout meter installation. This comprises:

- Field resource management – this includes:
 - Management and coordination of internal and external field resource;
 - Training of internal and external field resources (includes training management and administration as well as the periodical update of training materials). The nature and scope of this training is described in detail at Appendix A of this attachment;
 - Responsibility for field force service provider performance against contractual obligations under each respective Framework Agreement & Statement of Work;

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- Timely investigation and resolution of installation technical issues;
- Mentoring and authorisation of internal and external field force service providers; and
- Mentoring, authorisation and subject matter expert role (specialist metering activity).

Deloitte reviewed the Businesses' field resource management in section 3.3 of its report.

- Logistics management – this includes:
 - Periodical forecasting and procurement of AMI meters and communications equipment requirements;
 - Supply Chain support to Secure and Landis & Gyr; and
 - Manage warehouse and distribution of AMI materials in support of installation activities.
- Field deployment operations – this includes:
 - Work order planning, scheduling and dispatch;
 - Timely investigation and resolution of exceptions;
 - Alignment of job types to field crew skills / competencies; and
 - Customer liaison and customer issue investigation and resolution (in conjunction with Customer Service Group).
- Quality management – this includes:
 - Management of the field deployment audit program;
 - Assessment and management of quality assurance plans;
 - Assessment and reporting of installation performance (against agreed KPIs);
 - Implementation of a Quality Management System based continuous improvement framework; and
 - Administration of the PNS Quality Management System.

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- Project management – this includes:
 - Governance and control of field deployment activities;
 - Scope, budget, risk and issue management;
 - Project status reporting; and
 - Regulatory compliance mapping and reporting.

There are a variety of other costs associated with this expenditure category that are detailed in the accompanying models, including for:

- Logistics warehouse and distribution – these are the warehouse and distribution costs, including transportation, storage and handling;
- Logistics audit – these are the labour costs associated with logistics to ensure compliance with the PNS Quality Management Systems and the Businesses' ISO certification;
- Logistics buffer stock storage – this is the cost of capital associated with holding two months of inventory rotated through storage, which is considered the minimum required for a large-scale roll-out;
- Contactor replacement – a number of complex installations will require the replacement of a 3 phase external contactor. Field force service providers' contracts identify external contactors as PNS supplied material;
- Meter panels and boards - statutory requirements mandate the standardisation of meter installation, including the replacement of defective meter boards and panels during an AMI changeover. Field force service providers' contracts identify meter boards and panels as PNS supplied material;
- Customer calling cards – Energy Safe Victoria has mandated requirements to fill out and leave the customer with an AMI calling card. The completion of the calling card became part of standard installation business process from 1st June 2011 for all installation types.

AMI mass rollout communications installation

There are a variety of costs associated with this expenditure category that are detailed in the accompanying models, including for:

- Access point (AP) / relay construction installation; and
- Communications - cable installation of access points and relays to the nearest telecommunications pit (where 3G is not available).

5. PNS corporate overhead

A share of PNS's corporate overhead costs is allocated to CHED Services as part of the provision of BAU meter and communications supply and installation non-contract capital expenditure.

These costs have been calculated by applying an overhead rate of ■■■ per cent to:

- Contract unit costs, PNS non-contract unit costs and PNS logistics costs for BAU meter and communications supply; and
- PNS non-contract unit costs for BAU meter and communications installation.

6. PNS margin

A PNS margin is charged on AMI mass rollout and BAU meter and communications installation and on BAU meter and communications supply non-contract capital expenditure.

This has been calculated by applying a margin rate of ■■■ per cent to:

- PNS logistics and PNS corporate overhead for BAU meter and communications supply; and
- PNS non-contract unit costs, PNS rollout direct costs and PNS corporate overhead for AMI mass rollout and BAU meter and communications installation.

7. CHED Services' connection services

CHED Services' connection services are the meter exchange processing costs of CHED Services' Connection Services Group that are recovered through the AMI mass rollout and BAU meter and communications installation non-contract capital expenditure.

For the AMI roll out meter and communications installation categories, the CHED Services' connection costs are calculated by apportioning (based on NMIs) the costs of six FTEs between CitiPower and Powercor Australia. These six FTEs undertake the following tasks:

- Manual actioning of Service Order Create and Close (**SOCC**) exceptions that are created by data validation errors or process failures;
- Investigating queries sent through to the SOCC in relation to the back office processing of the meter exchanges;
- Manual back-office re-processing to convert installed AMI Type 5 meters to manually read interval meters (**MRIM**) Type 5 or basic Type 6 meters where

reliable field communications cannot be established with AMI Type 5 meters following installation;

- Raising IT Support calls when SOCC inbox exceptions that can not be handled by the process team and IT intervention is required;
- Undertaking business verification regression testing of incremental process changes to ensure that new processes relating to meter exchanges work correctly; and
- Corresponding with AMI Field Planning to resolve any outstanding SOCC exchanges and incorrect metering that has been installed in the field.

For the BAU meter and communications installation categories, the CHED Services' connection costs are calculated by applying a unit rate to a forecast volume of fault meter and communication replacements.

8. CHED Services' direct costs

CHED Services' direct costs relate to AMI mass rollout meter and communications installation capital expenditure. These are the costs of deployment planning management provided by CHED Services under the *Meter and Field Services Contract*.

For AMI mass rollout meter installation, these costs are calculated by apportioning (based on NMIs) the costs of 2.5 FTEs between CitiPower and Powercor Australia. These 2.5 FTEs are the Manager Energy Metering Solutions, the Deployment Manager and the Business Analyst – Strategy.

For AMI mass rollout communications installation, these costs are calculated based on:

- The travel and labour costs of a System Development & Performance Manager, three Deployment Project Managers, a Metering Engineer, a Graduate Engineer, two Systems Investigation Engineers and two Smart Grid Engineers during the technology management and rollout close-out phases; and
- The labour costs of six FTEs undertaking technology acceptance – the Technology Assurance Manager, the AMI Meter Test Technician, the AMI Lab Co-ordinator, two Systems Engineers and the Senior Systems Engineer.

9. CHED Services' project management

CHED Services' project management relates to AMI mass rollout meter and communications supply and installation.

These comprise the costs of labour, consultants, legal advice, travel, materials, taxes and other indirect cost items.

The project management costs relate to the following projects that form part of the AMI mass rollout:

- Industry planning and liaison;
- Project management office (PMO) in program operation mode;
- The management of the AMI program;
- Pilot meter groups.
- Resource management; and
- Transition planning.

The costs included in this category are the same costs reported as project management costs in the AER's Budget Templates.

10. CHED Services' margin

The CHED Services' margin is applied to all eight categories of meter and communications capital expenditure.

This margin is charged to the Businesses under the *Meter and Field Services Contract*.

The margin on services that CHED Services receives from PNS and other third party suppliers is charged at a rate of ■■■ per cent.

The margin on services that CHED Services provides itself is charged at a rate of ■■■ per cent on CHED Services' costs.

11. Fleet and property overhead

The Businesses' fleet and property overhead is applied to BAU meter and communications supply and installation.

These costs are based on the Businesses' actual fleet and property costs for 2010 which were allocated to metering activities in the 2010 regulatory accounts, escalated to 2012-15 by applying the AER's indirect cost escalators in its Victorian 2011-15 electricity distribution final determination.

12. Corporate overhead

The Businesses' corporate overhead is applied to BAU meter and communications supply and installation.

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These costs are based on the Businesses' actual corporate overhead costs for 2010 which were allocated to metering activities in the 2010 Regulatory Accounts, escalated to 2012-15 by applying the AER's indirect cost escalators used in its Victorian 2011-15 Electricity Distribution Final Determination.

CitiPower's 2010 actual corporate overhead allocated to BAU metering was \$514,408 (\$2010). Table 3 shows how this amount has been escalated for the period 2012-15 and recovered through the BAU meter and communications supply and installation capital expenditure categories.

	2012	2013	2014	2015	Total
Meter supply BAU	494	479	410	450	1,833
Communications supply BAU	0	0	8	7	15
Meters installation BAU	54	84	163	136	437
Communications installation BAU	0	0	0	0	0
Total	549	563	580	593	2,285

Table 3 – CitiPower corporate overheads for 2012-15 (\$'000s, 2011 Real)

Powercor Australia's 2010 actual corporate overhead allocated to BAU metering was \$2,056,247 (\$2010). Table 4 shows how this amount has been escalated for the period 2012-15 and recovered through the BAU meter and communications supply and installation capital expenditure categories.

	2012	2013	2014	2015	Total
Meter supply BAU	1,888	1,893	1,617	1,633	7,031
Communications supply BAU	0	0	96	99	194
Meters installation BAU	316	375	608	647	1,946
Communications installation BAU	0	0	25	26	51
Total	2,204	2,267	2,346	2,404	9,222

Table 4 – Powercor Australia corporate overheads for 2012-15 (\$'000s, 2011 Real)

These tables show that the Businesses are only recovering through their capital expenditure forecasts the escalated value of their 2010 actual corporate overhead that was allocated to BAU metering.

Appendix A – Nature and scope of training

All meter installers working on the Businesses' program are, as a minimum, fully accredited and authorised in accordance with the *Electricity Safety Act 1998*. Additionally, the Businesses' have taken significant steps to undertake further training, mentoring, assessment and auditing of all meter installers to ensure the highest possible standards of safe work practices and procedural compliance are continually maintained.

For those meter installers that have come onto the AMI roll-out with qualifications and experience as an electrician, the Businesses have mandated that they hold a current ESV A Class licence. All meter installers are assessed by GippsTAFE (as a Recognised Training Organisation - RTO) and where necessary are required to complete the course in AMI Meter Installation, conducted by them at their Chadstone Energy Training Centre campus. This course is a Victorian Government accredited course developed by industry to meet AMI specific requirements with significant input from the Businesses.

In addition to the mandated industry training requirements, all meter installers working on the Businesses' networks (including Cert III Lineworkers and Cert III Meter Technicians) receive additional training, mentoring and assessment on all facets of the AMI roll-out. This includes but is not limited to:

- Successful completion of the 10 day Powercor Induction and Technical Training (PITT) Course at the Business' purpose built AMI training centre, Ardeer. This course includes Smart Meter theory, AMI safety and quality requirements, AMI field procedures and work practices, e-Learning, Powerful Customer Service and a significant quantity of practical training supported by experienced instructors and PNS senior metering technicians;
- The practical training environment consists of over 100 mechanical, electronic and CT meter configurations used to ensure all meter installers gain practical experience in the varying complexity of meter exchange configurations in a controlled environment, prior to commencing field works, with a strong focus on the physical layout of these meters to mimic and train in the environment the Installers will find themselves in;
- Successful completion of the mentoring and assessment phase, whereby all meter installers working on the Businesses' networks receive on-the-job mentoring and support from experienced PNS senior metering technicians for a prescribed number of AMI meter installations (per job type);
- Upon completion of the mentoring phase each meter installer is then formally assessed in the field against a comprehensive checklist of processes, work instructions and safety works practices;

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- Only upon successful completion of the mentoring and assessment activities is a meter installer authorised by Citipower/Powercor Australia to work unsupervised on network metering assets (for that particular job type). Their *Australian Electricity Supply Industry (ESI) Skills Passport* is duly noted of this qualification.

In addition to the training, mentoring and assessment activities, the Businesses AMI quality management group conducts independent works practice observations and site compliance audits on all meter installers to assess their compliance as well as indicate where more stringent targeting of a meter installers works practices are required.

The Businesses have also ensured all meter installers have ongoing support while on the job in every facet of their duties i.e. technical, customer relationship and resolution and safety to support the safe, technical and timely execution of their duties.

Attachment 2 – Background context to Amended Application

1. AMI technology

In 2009, following an extensive and competitive request for proposal process, the Business entered into long term contracts for the supply of AMI technology with:

- Two meter vendors - Secure and Landis & Gyr; and
- A communication network vendor, Silver Spring Networks Inc (SSN).

The process and contracts were structured to realise pricing benefits from scale economies and to mitigate meter supply risk having regard for long lead times and on-going development of immature technologies.

The implementation has included the development of meter and network capability to comply with the Victorian AMI specification and integration of the two meter vendors to SSN's network technology.

Whilst the technology is operating to core requirements, both the network and meter software is still maturing and there are frequent and important software releases continually occurring. These require significant regression testing and corresponding over-the-air upgrades to both network and meter software.

There are long meter procurement lead times meaning that the meters and associated network firmware are generally delivered with prior versions of firmware. This also often requires over-the-air software upgrades to allow a meter to be successfully commissioned and to commence operation as a remotely read smart meter.

The associated management, reporting and support tools for both back-office network application and physical devices are still rudimentary.

2. Deployment

Changes have occurred to the Business' program timing during the 2010-2011 period in relation to:

- The completion of meter / network integration and commencement of meter supply of certain meter types; and
- The integration, delivery and maturity of new business systems.

This has resulted in a change of deployment profile and a reduced completion rate in deployment regions. This has resulted in a requirement to concurrently operate across

a much wider geographic than originally planned and a far greater number of future revisits will be required to complete the rollout.

In 2011, deployment completion rates were further affected by the uncertainty created by the Victorian Government's review of the smart meter program and customers requesting the deferral of smart meter installations until the review is completed.

This has resulted in the need for deployment replanning, an increased churn of meter installers (requiring additional on-going training of replacement installers and overall resource management) and the need to provide additional rollout field support services (i.e. licensed electrical inspectors) operating concurrently over a broader geographic area.

Furthermore, the broader (but incomplete) rollout means that there have been changes in timing regarding the region-based optimisation and design/commissioning closeout of the AMI communication mesh network that will now occur largely in 2012-13.

The Victorian Government's review, and the associated media activity, has resulted in a significant increase in the need for customer engagement and customer service interaction.

3. ESV safety review

In May 2011, Energy Safe Victoria (**ESV**) conducted an AMI installation safety audit of all Victorian DNSPs. Whilst ESV found that the DNSPs were safely installing AMI meters using appropriately qualified and competent installers, it required DNSPs to implement an ESV approved safety installation certificate scheme for the installation of a smart meter.

This requirement has resulted in incremental increases in meter installation unit rates in order to complete the required certificate.

4. Back office systems

Key new back office systems have been implemented to support the AMI program, including a new meter management system that was selected following a global search.

There were significant changes in timing in the 2010-11 in relation to vendor development implementation with systems proving to be early in their maturity cycle in terms of capability, levels of automation, support and management tools reliability and robustness.

Furthermore, the expected development road map of the meter management system, especially in terms of data warehousing, has not been realised by the vendor, requiring an alternative architecture to be development and implemented in 2012-13.

5. Regulated services

Type 5 data delivery

Information technology systems have undergone significant upgrading and customisation to meet the requirements of the Victorian AMI Program and NEM MSATS and B2B processes. The system implementation has been longer than previously forecast necessitating a more gradual implementation of remote read daily interval data delivery services to the market. Whilst the Business remains on-track to meet the service level requirements commencing from 1 January 2012, large numbers of AMI meters have been deployed into market systems as manually read meters, which will require back-office conversion into 2012-13.

Furthermore, an outcome of maturing back-office systems is a number of workarounds and the need for manual processing of meter data exceptions. The Business expects that these exceptions and workarounds will decrease over time as vendor upgrades are released.

Remote energisation

There have been significant delays in developing a cross-industry operating model to support remote energisation services. A revised business process and system implementation approach has now been adopted.

The Business expects to offer remote energisation services in the second half of 2011 with phase two implementation of automated capabilities to occur in 2012.

6. Competitive smart metering arrangements post 2013

On the basis of a derogation to the Rules, the Victorian DNSPs are the exclusive meter provider until the end of 2013 for customers with annual consumption of less than 160MW. Neither the national smart metering program nor the Victorian Government has determined the competitive transition arrangements (if any) that will apply after 2013. Accordingly, the Business has not made any provision for any transition arrangements in this Amended Application.