Draft determination

Victorian advanced metering infrastructure review

2009–11 AMI budget and charges applications

July 2009

AUSTRALIAN ENERGY REGULATOR

Contents

Request for submissions

This document sets out the Australian Energy Regulator's (AER) draft determination on the 2009–11 submitted budgets and 2010–11 initial charges applications of the Victorian distribution network service providers (DNSP) for the roll-out of advanced metering infrastructure. Where this draft determination rejects a DNSP's submitted budget, clause 5C.5(b) of the revised Order requires that the DNSP must, within 20 business days of this draft determination, make application to the AER for approval of an amended submitted budget.

The AER will hold a public forum on its draft determination on 21 August 2009 in Melbourne. This forum will be used by the AER to explain its draft determination and receive oral submissions from interested parties. Interested parties can register to attend the forum by calling the Network Regulation South Branch of the AER on (03) 9290 1436 or by emailing aerinquiry@aer.gov.au by 7 August 2009.

Interested parties are invited to make written submissions on issues regarding this draft determination to the AER by 11 September 2009. The AER will deal with all information it receives in the determination process, including submissions on the draft determination, in accordance with the ACCC/AER information policy. The policy is available at www.aer.gov.au.

Submissions can be sent electronically to aerinquiry@aer.gov.au

Alternatively, submissions can be mailed to:

Chris Pattas
General Manager – Network Regulation South
Australian Energy Regulator
GPO Box 520
Melbourne VIC 3001

The AER prefers that all submissions be publicly available to facilitate an informed and transparent consultative process. Submissions will be treated as public documents unless otherwise requested. Parties wishing to submit confidential information are requested to:

- clearly identify the information that is the subject of the confidentiality claim
- provide a non–confidential version of the submission.

All non–confidential submissions will be placed on the AER website, www.aer.gov.au. Copies of the DNSPs' budget and charges applications, consultancy reports and submissions from interested parties are available on the AER website. Inquiries about the draft determination or about lodging submissions should be directed to the Network Regulation South Branch on (03) 9290 1436.

Shortened forms

AAM	Alinta Asset Management
AER	Australian Energy Regulator
AMI	Advanced metering infrastructure
capex	capital expenditure
CDM	Consumption data management
CIS	Customer information system
CP	CitiPower Ltd
DNSP	distribution network service provider
DPI	Department of Primary Industries (Victoria)
DUOS	distribution use of system
ECM	Efficiency carryover mechanism
EDPR	Electricity Distribution Price Review
ESCV	Essential Services Commission – Victoria
EWOV	Energy and Water Ombudsman
FWG	AMI Functionality Working Group
IMRO	Interval meter roll-out
IT	information technology
JEN	Jemena Energy Networks
KEMA	KEMA Inc.
MCE	Ministerial Council on Energy
MWh	mega-watt hour
NER	National Electricity Rules
NMI	National meter identifier
NPV	Net Present Value
opex	operational and maintenance expenditure
original Order	The Order in Council made on 28 August 2007 by the Governor in Council under sections 15A and 46D of the *Electricity Industry Act 2000* (Vic)
PC	Powercor Australia Ltd
revised Order	The original Order as amended on 25 November 2008, 22 January 2009 and 31 March 2009
RFI	Request for information
RFT	Request for tender
SPA	SP AusNet
UED	United Energy Distribution
WACC	Weighted average cost of capital

Summary

In 2006, the Victorian Government decided there should be a roll out of advanced interval meters to all Victorian electricity customers. The regulatory arrangements relating to the roll-out are set out in an August 2007 Order in Council made by the Victorian Governor in Council under sections 15A and 46D of the Electricity Industry Act 2000. An amending Order in Council was made on 25 November 2008 (the 'revised Order'). The revised Order sets out the regulatory framework and the AER's role, including the determination of budgets, revenues and charges.[1] The Order requires Victorian DNSPs to install remotely read interval meters for all customers by 31 December 2013.

The revised Order provides for a pass through arrangement for metering costs incurred by DNSPs, whereby metering charges are to be set with reference to a combination of actual costs and forecasts of expenditure budgets determined by the AER using a building block approach and applying the tests set out in the revised Order. The building block approach provides for the capital cost of metering assets to be amortised and recovered from customers over time. Each year charges are to be revised under this approach by updating forecast data with actual costs incurred and revenues received to ensure revenue neutrality for the DNSPs over the roll-out period.

This determination relates to the expenditure budgets and forecast revenues for 2009 to 2011 and associated metering charges for 2010 and 2011.

Under the revised Order the AER is required to apply a series of tests in approving capital and operating expenditure budgets to ensure they are within the scope of activities and specifications as set out in the revised Order and otherwise prudent. In determining the prudence of expenditures the AER is required to consider the extent to which they stem from competitive tendering arrangements, the likelihood of expenditures being incurred and whether expenditures are in line with general commercial standards. The revised Order sets out requirements in relation to the calculation of building block revenue requirements and how these are translated into metering charges. In January 2009 the AER published a framework and approach paper outlining how it would discharge its functions under the revised Order with respect to determining budgets and metering charges.

The DNSPs submitted their budget applications for 2009 to 2011 on 27 February 2009. The submitted budgets proposed a total of $903 million in capital expenditure and $268 million in operating expenditure (real 2008 dollars) for these three years, a total of $1.17 billion.

The AER assessed these submitted budgets in accordance with the scope and prudence tests of the revised Order and as per further requirements set out in the framework and approach paper. The AER engaged a technical consultant, Energeia, to assist in this task. In general the AER considered that the bulk of the submitted budgets were within scope and prudent, with the exception of:

[1] Responsibility for regulatory oversight of Victorian DNSPs generally and the AMI roll-out in particular transferred from the Essential Services Commission of Victoria (ESCV) to the AER on 1 January 2009.

- approximately $7 million of equity raising costs proposed by United Energy Distribution (UED), which the AER concluded was unlikely to be incurred

- expenditure for customer response trials proposed by CitiPower (CP), Powercor (PC) and SP AusNet (SPA), as being unlikely to be incurred

- approximately $0.4 million for self insurance costs as being unlikely to be incurred by UED

- $6.1 million for direct load control proposed by SPA, which was considered to be out of scope and not justified on a net benefit basis.

While the AER had initial concerns with PC's and SPA's proposals to install two element meters as out of scope activities, upon further inquires the AER accepted these investments a being prudent for the initial budget period as they would avoid transitional costs for electricity consumers. The AER also considered that SPA's WiMAX communications solution contrasted to the mesh radio solutions proposed by the other DNSPs, however the AER did not establish that this was an imprudent investment decision in SPA's circumstances, taking account of the information provided to the AER. The AER also noted management fees proposed by some of the DNSPs under contracts with related parties which the AER did not establish were imprudent under the requirements of the revised Order.

DNSPs will be required to report actual expenditure incurred against the budgets as approved by the AER. The revised Order provides for actual expenditure to be reflected in prices where it is within scope, certified in an audit report, and no more than 120 per cent (for the period 2009 to 2011) or 110 per cent (for 2012 to 2015) of the budgets determined by the AER. Where actual expenditure is outside these ranges the AER may only not permit it to be recovered where it establishes that it is not prudent.

On 1 June the DNSPs submitted their charges applications for 2010 and 2011, which incorporated forecast expenditures from their earlier budget applications and actual expenditure on metering costs for the years 2006-08. For a single phase, single element meter, the proposed charges of the DNSPs ranged from $76.96 to $134.63 in 2010, and from $95.12 to $136.70 in 2011. Differences between DNSPs metering charges reflect their choice of communications and information technology, data processing requirements for AMI meters, cost allocation, and diverse network characteristics, in addition to differing customer bases.

The AER assessed the charges and building block calculations proposed by the DNSPs and has included its assessment of these charges proposals in this draft determination. The AER notes that the charges set out in this draft determination are purely indicative, have no status under the revised Order and have been provided to inform further consultation with stakeholders prior to the AER's final determination on budgets and charges in October 2009.

The main concerns raised by the AER regarding the proposed charges stemmed from:

- reported actual costs that departed from the DNSPs' audited regulatory accounts, which the AER did not accept under the requirements of the revised Order

- allocations of costs by the DNSPs which affected the size of benefits under the efficiency carryover mechanism in their favour

- the proposed methodology for estimating the debt risk premium as part of the weighted average cost of capital, which was not compliant with the requirements of the revised Order and was otherwise considered by the AER to be not robust.

For a single phase, single element meter, the charges stemming from AER's draft decision range from $67.79 to $104.79 in 2010; and from $92.12 to $130.52 in 2011.

These indicative 2010 charges represent an average increase of $53 on current (2009) metering charges, approved by the Essential Services Commission of Victoria, with a further $25 increase in 2011. The increases mainly reflect the impact of large expenditures in new metering technology and supporting infrastructure.

The AER notes that the Victorian Government expects the following benefits to result from the net increase in metering charges:

- introduction of cost reflective time of use tariffs, resulting in more efficient network utilisation and potential deferral of network augmentations

- operational cost savings for the DNSPs arising from remote meter reading and connection and disconnection of customers' supplies

- more efficient outage detection and rectification

- improved accuracy of customer billing.

As the AMI roll-out progresses, the AER will review the level of, and trends in, DNSPs' reported actual metering opex. In particular the AER will have regard to DNSPs' future and on-going opex which should reflect the anticipated cost savings from the AMI roll-out. In addition, the AER will consider how AMI affects the DNSPs' proposed network augmentation plans in making future distribution determinations, such as through improved price signals and associated reductions in peak demand.

The charges proposed and determined by the AER for each DNSP are listed in Tables 1 to 5 below. Note that all DNSPs except SP AusNet charge on a National Meter Identifier (NMI) basis.

Table 1: CitiPower, $ per NMI

Annual metering charge	**2010**		**2011**	
	proposed	**AER decision**	**proposed**	**AER decision**
Single phase	104.79	104.79	128.79	113.00
Three phase direct connected	136.98	136.98	168.36	147.72
Three phase current Transformer connected	172.99	172.99	212.62	186.55

Table 2: Jemena, $ per NMI

Annual metering charge	2010		2011	
	proposed	AER decision	proposed	AER decision
Single phase single element	134.63	67.79	136.70	130.52
Single phase single element, with contactor	134.63	67.79	136.70	130.52
Three phase direct connected	165.46	83.31	167.99	160.39
Three phase current Transformer connected	183.95	92.62	186.77	178.32

Table 3: Powercor, $ per NMI

Annual metering charge	2010		2011	
	proposed	AER decision	proposed	AER decision
Single phase	96.67	96.67	125.17	111.48
Three phase direct connected	127.50	127.50	165.09	147.04
Three phase current Transformer connected	168.94	168.94	218.74	194.82

Table 4: SP AusNet, $ per meter

Annual metering charge	2010		2011	
	proposed	AER decision	proposed	AER decision
Single phase, single element with contactor	76.96	75.88	110.18	94.23
Single phase, two–element with contactor	87.92	86.69	125.87	107.66
Multi-phase, one contactor (1 load control)	102.12	100.69	146.19	125.04
Multi-phase, two contactors (2 load controls)	113.29	111.70	162.18	138.71
Multi-phase Current Transformer connected	145.87	143.82	208.82	178.60

Table 5: UED, $ per NMI

Annual metering charge	2010		2011	
	proposed	**AER decision**	**proposed**	**AER decision**
Single phase single element	88.44	71.80	95.12	92.12
Single phase single element, with contactor	90.29	73.30	97.09	94.02
Three phase direct connected	99.78	81.01	107.28	103.89
Three phase current Transformer connected	106.42	86.40	114.43	110.82

1 Introduction

1.1 Background

In October 2005, the Essential Services Commission of Victoria (ESCV) determined the price control applying to distribution businesses' distribution use of system charges (DUOS) in its Victorian Electricity Distribution Price Review 2006–10 Determination (the 2005 Determination). In the 2005 Determination, the ESCV also established a separate price control for prescribed metering services. This followed the ESCV's decision to mandate the roll-out of manually read interval meters and to provide distribution network service providers (DNSPs) with exclusive responsibility for metering services to customers who do not have a remotely read interval meter and who consume less than 160 mega-watt hours (MWh) of electricity per annum.

In 2006, the Victorian Government decided instead that there should be a roll-out of advanced interval meters to all Victorian electricity customers. This superseded the ESCV's earlier decision on manually read interval meters. Throughout 2006 and the first half of 2007, the Victorian Government worked with DNSPs, retailers and consumer groups to establish the requirements of the advanced metering infrastructure (AMI) roll-out. The regulatory arrangements relating to the roll-out were initially set out in an August 2007 Order in Council made by the Governor in Council under sections 15A and 46D of the *Electricity Industry Act 2000* (Vic) (referred to hereafter as 'the original Order').

In September 2008, the Victorian Government published minimum AMI functionality and service levels specifications for the AMI roll-out. These documents set out the minimum requirements that the DNSPs must comply with in procuring and implementing their AMI systems, and do not limit the implementation of AMI systems that have functionality and performance that exceed the requirements.[2]

The original Order was revised on 25 November 2008 following discussions between the Victorian Government, DNSPs and stakeholders. The revised Order amended the original timing, regulatory arrangements and regulatory responsibility for the roll-out. Responsibility for regulatory oversight of the roll-out transferred from the ESCV to the Australian Energy Regulator (AER) on 1 January 2009. On 22 January 2009, the revised Order was amended again to incorporate Schedule 3, which sets out the scope of AMI activities for CitiPower and Powercor.

In December 2008 the ESCV released a consultation paper to establish a regulatory framework and approach to setting prices in accordance with the requirements in the revised Order. As the AER assumed responsibility for regulatory oversight of the roll-out from 1 January 2009, the AER finalised the framework and approach process and published a final framework and approach paper on 29 January 2009. The final framework and approach paper incorporated submissions on the ESCV's consultation paper, as well as earlier stakeholder submissions and considerations. It set out the framework and approach to be applied in making a determination on the prices

[2] Department of Primary Industries (Victoria), *Advanced metering infrastructure – Minimum AMI functionality Specification (Victoria)*, September 2008, and Department of Primary Industries (Victoria), *Advanced metering infrastructure – Minimum AMI Service Levels Specification (Victoria)*, September 2008.

DNSPs can charge for the metering services specified in the revised Order. It focused on the process that will be followed to determine the prices for regulated AMI services for the initial budget period and in particular 2010 and 2011. The framework and approach paper also set out the information required from DNSPs in their initial budget applications.

The AER received the Victorian DNSPs' Initial AMI Budget Applications (budget applications) on 27 February 2009 and their Initial AMI Charges Applications (charges applications) on 1 June 2009.

1.2 Timeframe for the roll-out

Under the revised Order, DNSPs are required to commence installing advanced interval meters by the middle of 2010, with the roll-out to be completed by the end of 2013. The full roll-out schedule is shown in Table 1.1. The DNSPs are required to use their best endeavours to meet the percentage targets for each year.

Table 1.1: AMI roll-out schedule

Timeline	Roll-out percentage
30 June 2010	5%
31 December 2010	10%
30 June 2011	25%
30 June 2012	60%
30 June 2013	95%
31 December 2013	100%

The Victorian AMI roll-out is the first of a potentially more widespread planned roll-out of similar meters across other states. The New South Wales Government has indicated that advanced interval meters (referred to as 'smart meters' in NSW) will be rolled out prior to 2017. Other jurisdictions are proceeding with pilot programs and business cases in order to determine whether to proceed with roll-outs. The Ministerial Council on Energy (MCE) has committed to establishing a consistent national framework for AMI meters.[3] The MCE's most recent meeting communiqué noted the progress of smart meter trials in various jurisdictions.[4]

1.3 Legislative and regulatory framework

The legislative instrument which guides the determination of prices for metering services is the Order in Council made by the Governor in Council in August 2007, as amended by the Governor in Council on 25 November 2008 and published in the Government Gazette No. S314. The Order in Council was subsequently amended by the addition of Schedule 3 on 22 January 2009, setting out the scope of AMI activities

[3] MCE, 15th Meeting Communiqué, 13 June 2008, p.1.
[4] MCE, 20th Meeting Communiqué, 10 July 2009, p. 3.

for CP and PC, and on 31 March 2009 to address minor amendments. For the purposes of this draft determination, the original Order, as accordingly amended, is referred to as the 'revised Order'.

The revised Order provides the framework for setting prices for the following services:

- regulated services comprising:
  - metering services supplied to first tier customers or second tier customers with annual electricity consumption of 160 MWh or less where the electricity consumption of that customer is (or is to be) measured using a revenue meter that is either an accumulation meter or a manually read interval meter
  - metering services supplied to first tier customers or second tier customers with annual electricity consumption of 160 MWh or less where the electricity consumption of that customer is (or is to be) measured using a revenue meter that is a remotely read interval meter[5]
- other fees and charges:
  - exit fees where the retailer becomes the responsible person for a relevant customer's metering services
  - restoration fees where a retailer ceases to be the responsible person for a relevant customer's metering services and the DNSP becomes the responsible person
  - prices for unmetered supplies
  - customer requested services—which are services provided to a retailer in respect of a customer that requests a service to a standard in excess of that normally provided.[6]

The revised Order provides for a cost pass through model under which budgets for the roll-out are established at the beginning of the period and then annual charges are determined based on actual expenditure. The focus of the regulatory framework is on the regulator ensuring that the expenditure is within scope and is otherwise prudent, in accordance with the tests set out in the revised Order.

The revised Order divides the regulatory process into two separate periods. The first is the initial budget period, which applies from 1 January 2009 to 31 December 2011. This draft determination is for this initial budget period.

The second budget period applies from 1 January 2012 to 31 December 2015. From 2016 onwards the determination of prices for metering services and other fees and

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5 Revised Order, clause 2.1(g)

6 It is also possible for a retailer to seek enhanced functionality or enhanced service levels from a DNSP. The process for determining the price for such enhanced services is covered by the complementary Order in council made by the Governor in Council under sections 15A and 46D of the Electricity Industry Act 2000 in November 2007 (referred to in the revised Order as the '*AMI Specifications Order*').

charges will be undertaken by the AER in accordance with the process provided in chapter 6 of the National Electricity Rules (NER). Final 'true-ups' in relation to total AMI expenditure and revenue from 2009 to 2015 will be reflected in prices in 2016 and 2017.

The AER's 2011–15 Victorian distribution determinations will not deal with the costs and revenues associated with the AMI roll-out.

1.3.1 Budgets

The framework applying in respect of the two budget periods is similar. It requires DNSPs to provide a submitted budget as part of its budget application to the regulator which the regulator must approve unless it can establish that the submitted budget expenditure is for activities that are out of scope, as set out in the revised Order, or that the submitted budget expenditure is not prudent. Submitted budget expenditure is taken to be prudent unless:

- in the case where expenditure is a contract cost, the regulator establishes the contract was not let in accordance with a competitive tender process

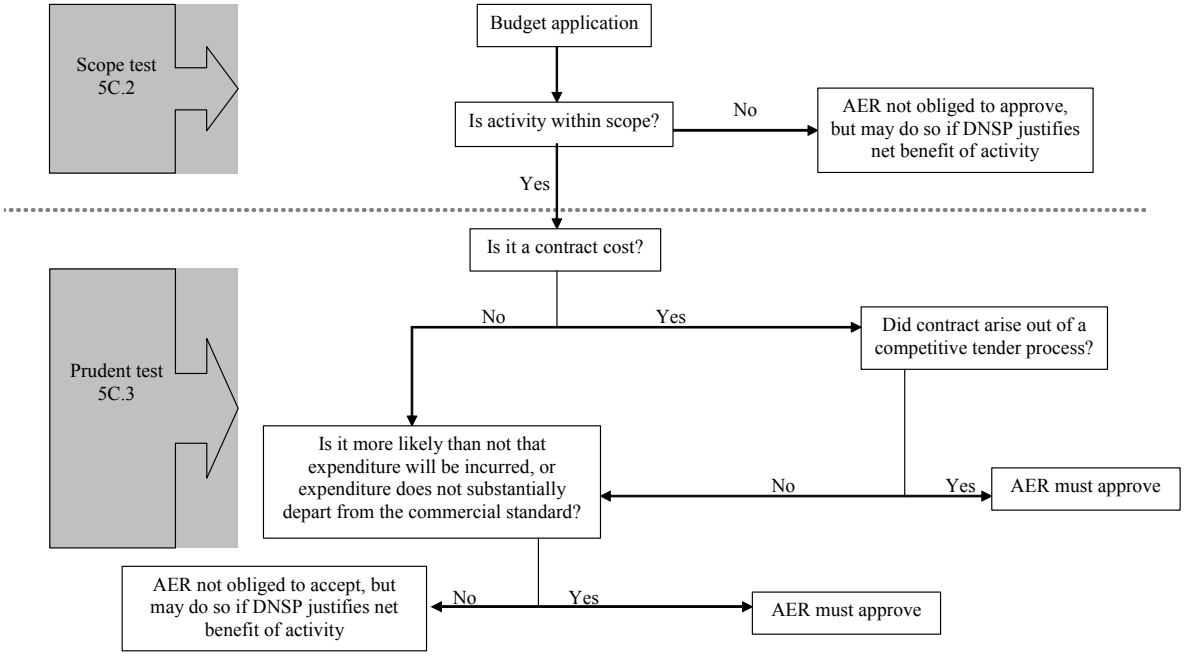
- in the case of other expenditure, where the regulator establishes it is more likely than not that the expenditure will not be incurred or that incurring the expenditure involves a substantial departure from the commercial standard that a reasonable business would exercise in the circumstances.

Accordingly, the AER's assessment of the submitted budgets is separated into a series of 'tests' which it must undertake, the scope test and the prudent test. The prudent test is comprised of the competitive tender test, expenditure incurred test and commercial standard test. In summary, the AER must approve submitted budget expenditures unless it can establish that such expenditure does not pass any one of these tests. In such a situation, the AER is not required to accept the submitted budget and must state in its reasons what new submitted budget it would determine to approve.[7] The AER notes that even where expenditure is outside scope or does not satisfy the prudent test, the AER may still approve a DNSP's proposed expenditure if a net benefit from the activity is demonstrated.

Figure 1 below provides a flowchart outlining the AER's initial AMI budget assessment tests, as set out in clause 5C of the revised Order.

[7] Revised Order, clause 5C.5(a).

Figure 1: Budget assessment tests under revised Order



The framework and approach paper highlighted the AER's likely approach to conducting these tests, which are discussed in turn here.

1.3.1.1 The scope test

The revised Order states that activities within scope are "those activities that are reasonably required for the provision of Regulated Services and to comply with a metering regulatory obligation or requirement."[8]

Regulated Services are defined in the revised Order as:

- metering services supplied to or on behalf of first tier customers or second tier customers, with annual electricity consumption of 160 MWh or less where:
  - the electricity consumption of that customer is (or is to be) measured using a revenue meter that is either an accumulation meter or a manually read interval meter; and
  - the DNSP is the responsible person in respect of those services;
- metering services supplied to or on behalf of first tier customers or second tier customers, with annual electricity consumption of 160 MWh or less, where:
  - the electricity consumption of that customer is (or is to be) measured using a revenue meter that is a remotely read interval meter; and
  - the DNSP is the responsible person in respect of those services.

For each DNSP, the revised Order contains lists of activities that are deemed to be inside scope and outside scope for the AMI roll-out. These lists are not exhaustive.

8 Revised Order, schedule 2.1, 2.6 and 2.10.

The framework and approach paper stated that the AER, in applying the scope test, would amongst other things seek to understand how proposed expenditure relates to activities being undertaken, and how these activities relate to scope set out in Schedule 2 of the revised Order. It indicated that the AER would closely review overheads and management costs within the submitted budgets, and would consider the minimum Victorian specifications for the roll-out.

1.3.1.2 Competitive tender test

The revised Order requires the AER to approve expenditures arising out of contracts unless it can establish that the contract was not let in accordance with a competitive tender process.

Clause 5C.10 of the revised Order states that in making a determination in which the AER establishes that a contract was not let in accordance with a competitive tender process, the AER must have regard to:

- the tender process for that contract
- whether there has been compliance with that process, and
- whether the request for tender unreasonably imposed conditions or requirements that prevented or discouraged the submission of any tender that was consistent with the selection criteria.

In its framework and approach paper, the AER stated it would examine whether:

- the initial request for tender documentation was made widely available to all parties that might be interested in tendering
- if adopted, any multi-stage tendering process is appropriate given the nature of the services sought and the number and prospects of potential bidders
- the issued tender documentation:
    - provides adequate information about the background to the AMI program and the DNSP
    - details the tender process
    - provides a detailed specification of the services sought
    - adequately addresses matters such as risk sharing and contractual terms and conditions
    - where appropriate, sets out the tender evaluation criteria
- adequate time has been allowed for bid preparation and between tender stages, taking into account the scope and complexity of information sought from tenderers
- the request for tender does not unreasonably impose conditions that prevent or discourage the submission of any tender. For example, these might include the

payment of high fees for receiving tender documentation, technical requirements that are unreasonably high given the nature of the tender, unreasonable liability requirements, or any other requirements that impose unduly high expenses on potential tenderers

- detailed and appropriate tender evaluation criteria have been developed and applied
- the design of the tender and the evaluation criteria ensure that, as far as possible, competing bids are easily comparable
- any 'bundling' of different services into a single contract is appropriate and that the advantages of doing so (economies of scale, reduced administration costs) outweigh the costs (less competition)
- appropriate tender briefings have been conducted and tenderers have been provided with the opportunity to clarify aspects of the tender
- the DNSP has taken appropriate steps to verify the information provided in tender responses, including referee interviews, field trials, and other checks
- any post-tender negotiations with the successful tenderer are consistent with the tender and do not call into question the original selection decision
- the outcome of major tenders have been considered and approved by the DNSPs' boards of directors
- for large contracts, a probity audit of the tendering process was conducted.

1.3.1.3 Assessment of non-contract costs and contract costs not let in accordance with a competitive tender process

For non-contract costs or contract costs that the AER establishes were not let in accordance with a competitive tender process, the revised Order requires that these costs must be approved unless the AER can establish that:

- it is more likely than not they will not be incurred (the expenditure incurred test) or
- incurring them would involve a substantial departure from the commercial standard a reasonable business would exercise in the circumstances (the commercial standard test).

1.3.1.4 Expenditure incurred test

In applying this test, the AER will examine the information submitted as part of the DNSPs' budget applications. The AER will consider whether a DNSP intends to enter into competitively tendered contracts for non-contract costs (future contract costs). It will also consider a DNSP's need to incur such costs in order to meet its regulatory requirements, and the risks faced in not incurring these costs.

1.3.1.5 Commercial standard test

In applying this test, clause 5I.8 of the revised Order requires the AER to have regard and give appropriate weight to the following factors:

- the information available at that time
- the nature of the provision, installation, maintenance and operation of AMI and associated services and systems
- the nature of the roll-out obligation
- the state of the technology relevant to the provision, installation, maintenance and operation of AMI and associated services and systems
- the risks inherent in a project of the type involving the provision, installation, maintenance and operation of AMI and associated services and systems
- the market conditions relevant to the provision, installation, maintenance and operation of AMI and associated services and systems, and
- any metering regulatory obligation or requirement.[9]

The framework and approach paper did not specify additional matters the AER would take into account in applying the commercial standard test, but rather it stated that each application of this test may be unique, including circumstances and issues that are absent from other cases.[10]

In applying the test, the AER will consider the information submitted by the DNSPs and closely scrutinise their internal expenditure business cases, use of technical experts and consultants, and their intentions to tender costs according to competitive tender processes.

1.3.2 Charges

The AER notes that the revised Order does not require a draft determination on the DNSPs' charges applications, however this has been combined with the AER's budget determination in order to provide stakeholders information on potential price impacts and to facilitate further consultation generally.

Charges are determined by the AER for 2010 and 2011 for 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

[9] Revised Order, clauses 5I.8 and 5C.4.
[10] AER, framework and approach paper, p. 41.

- any other customer or metering class proposed by the DNSP and approved by the AER.[11]

The revised Order requires charges for a particular year to be set such that the net present value (NPV) of total costs incurred by the DNSP from 1 January 2009 to the end of that year be equal to the NPV of the total revenue for the same period. Costs and revenues are to be calculated using a combination of actual historical data and forecasts arising out of a DNSP's approved budget.

The revised Order also provides for the building block approach to be used in calculating costs that are to be reflected in charges, including a return on capital, depreciation, efficiency carryover amounts relating to the roll-out of manually read interval meters prior to 1 January 2009, and tax liabilities.

Charges are to be adjusted annually to reflect actual expenditure incurred. The revised Order provides for actual expenditure to be reflected in charges where it is within scope, certified in an audit report, and no more than 120 per cent (in relation to the initial budget period) or 110 per cent (in relation to the second budget period) of the approved budget. Where actual expenditure is outside these ranges the regulator may further scrutinise that expenditure before approving charges. Whether excess expenditure is prudent involves applying the same tests discussed above in sections 1.3.1.2 to 1.3.1.5 of this determination, with the exception of the expenditure incurred test.[12]

1.3.3 Timeframe for initial AMI budget period

The timetable for determining budgets and charges for the initial AMI budget period is set out in Table 1.2. Dates prescribed in the revised Order are in normal text and milestones identified by the AER are shown in italics.

[11] Revised Order, clause 4.1(n).
[12] Revised Order, clause 5I.6, 5I.7.

Table 1.2: Milestones for the initial AMI budget period

Milestone	Date
DNSPs submitted initial AMI budget period budget applications	27 February 2009
DNSPs submitted 2010-11 initial charges application	1 June 2009
Draft determination on initial AMI budget period budget application and 2010-11 initial charges application	*31 July 2009*
DNSPs may submit revised initial AMI budget period budget application to reflect material changes in costs as a result of contracts entered into or new regulatory obligations	31 August 2009
Where the AER has rejected a submitted budget, the DNSP must submit a revised submitted budget to the AER	31 August 2009
Submissions on draft determination close	*11 September 2009*
Final determination on initial AMI budget period budget application and 2010-11 initial charges application	31 October 2009
2010-11 initial charges take effect	1 January 2010
Charges revision application to be submitted	31 August 2010
Submissions on charges revision application close	*30 September 2010*
Determination of revised charges for 2011	31 October 2010
2011 charges take effect	1 January 2011

1.3.4 Regulatory responsibility

Regulatory responsibility for the AMI roll-out transferred from the ESCV to the AER on 1 January 2009. The statutory framework for the AMI price review provides that work done by the ESCV (including the preparation and issue of a framework and approach paper) in relation to the review will be taken to be work done by the AER.

The revised Order and the ESCV's consultation paper reference 'the Commission' in all places. All such references, unless explicitly stated or the context provides otherwise, are to be read as references to the AER. In this draft determination references to the ESCV and the AER are references to those organisations. The term 'regulator' is used to refer to the organisation carrying out the function or exercising the power being referred to.

1.4 Structure of this determination

This document makes a draft determination for the DNSPs' initial AMI budgets for 2009–11 and for their charges for 2010–11. Section 2 outlines the AER's assessment and draft determinations on each Victorian DNSP's proposed initial budget. Sections 3 and 4 respectively outline the AER's assessment and draft determination on the DNSPs' required revenues and proposed charges for 2010 and 2011, incorporating the AER's determination on the DNSPs' budget applications.

2 Proposed AMI budgets for 2009–11

This section discusses the submitted budgets for 2009–11 for each DNSP, and the AER's determination on each in accordance with the tests outlined in the previous section.

The AER engaged the consultant Energeia Pty Ltd (Energeia) to assist it in reviewing the Victorian DNSPs' budget applications. Energeia undertook a thorough review of all information submitted by the DNSPs in support of their submitted budgets, and had regard to the tests set out in the revised Order in making recommendations to the AER. The AER has released Energeia's final report with this draft determination

In undertaking its assessments the AER had regard to the information provided by each DNSP in support of its budget application, further information provided at the AER's request and also the views of Energeia.

2.1 CitiPower and Powercor

The AER elected to review the budget applications of CitiPower Ltd (CP) and Powercor Australia Ltd (PC) concurrently, as the applications were almost identical due to their collaboration on the AMI roll-out. The two DNSPs operate from a common IT platform and have together engaged a related party, CHED Services, to manage the procurement program and facilitate the AMI roll-out. IT and program governance costs for the AMI roll-out are allocated between CP and PC according to customer numbers (if costs are volume related) or evenly split (if costs are not based on volume).[13]

2.1.1 Initial AMI budget application 2009–11

2.1.1.1 Roll-out program

CP and PC defined their AMI roll-out programs according to the following categories of activities:

- meter supply and installation—including the procurement of AMI and accumulation meters, logistical support for the roll-out (warehousing, transport and distribution), and installation services
- communications technology supply and installation—including the selection of communications technology to support the roll-out, and the procurement and installation of the selected communications infrastructure
- IT—to support AMI meters and communications, activities include IT program management, infrastructure, field mobile computers, interval meter billing system, meter/data management system and scaling of existing systems to facilitate AMI, system and network management system integration, workforce scheduling, network management systems and other IT (an internet portal to enable stakeholders access to information)

[13] CitiPower, Advanced Metering Infrastructure Budget Application 2009-11, 27 February 2009, p. 39 and 51, Powercor, Advanced Metering Infrastructure Budget Application 2009-11, p. 40 and 54.

- program governance and management/change management—including a program management office, technology procurement, business transformation, field implementation, and regulatory compliance costs

- operating costs—meter data services, operation and maintenance of IT, communications operations, telecommunications systems (wide area network/backhaul), customer service, meter maintenance, customer response trials, executive and corporate office services.[14]

Program costs

CP proposed total costs for the AMI program over 2009–11 of $147.9 million, of which $113.5 million is capital expenditure (capex) and $34.4 million is operational and maintenance expenditure (opex).[15] PC proposed total costs for the AMI program over 2009–11 of $330 million, of which $257.2 million is capex and $72.8 million is opex.[16]

As at 27 February 2009, CP's and PC's submitted budgets included forecast costs as set out in Tables 2.1 and 2.2 respectively.

Table 2.1: CP Initial AMI budget application costs ($'000s, real 2008)

	2009	2010	2011	Total
Capex	23,683	42,829	46,976	113,488
Opex	13,988	10,089	10,358	34,434
Total	37,671	52,917	57,334	147,922

Source: CitiPower, Advanced Metering Infrastructure Budget Application 2009-11, 27 February 2009, budget templates (confidential).
Note: Totals may not add due to rounding.

Table 2.2: PC Initial AMI budget application costs ($'000s, real 2008)

	2009	2010	2011	Total
Capex	41,232	98,460	117,520	257,213
Opex	29,505	20,588	22,708	72,802
Total	70,737	119,049	140,229	330,014

Source: Powercor, Advanced Metering Infrastructure Budget Application 2009-11, 27 February 2009, budget templates (confidential).
Note: Totals may not add due to rounding

As set out in section 1.3.1 above, the AER's assessment of the DNSPs' submitted budgets is split according to contract and non-contract costs. Tables 2.3 and 2.4 set out CP's and PC's budget costs accordingly.

14 CitiPower, op. cit., pp. 29-60 and 51, Powercor, op. cit., pp. 29-62.
15 CitiPower, op. cit., budget templates (confidential).
16 Powercor, op. cit., budget templates (confidential).

Table 2.3: AER cost breakdown for assessment – CP ($'000s, real 2008)

Cost category for AER assessment	2009	2010	2011
Contract costs*	2,102	23,094	35,046
Non-contract costs	35,569	29,823	22,288

Source: CitiPower, Advanced Metering Infrastructure Budget Application 2009-11, 27 February 2009, budget templates (confidential).
* Includes contracts entered into prior to 27 February 2009, as required within clause 5C.11(a) of the revised Order.
Note: Totals may not add due to rounding.

Table 2.4: AER cost breakdown for assessment – PC ($'000s, real 2008)

Cost category for AER assessment	2009	2010	2011
Contract costs*	4,828	62,710	95,948
Non-contract costs	65,909	56,339	44,280

Source: Powercor, Advanced Metering Infrastructure Budget Application 2009-11, 27 February 2009, budget templates (confidential).
* Includes contracts entered into prior to 27 February 2009, as required within clause 5C.11(a) of the revised Order.
Note: Totals may not add due to rounding

2.1.2 AER considerations

2.1.2.1 Scope test

Proposed expenditure, activities being undertaken and scope

The AER assessed CP's and PC's proposed AMI activities under each cost category defined within their budget applications. The AER considered the degree to which the DNSPs made specific reference to Schedule 2 of the revised Order in their budget applications, and the justifications for proposed program costs. The budget applications contained some detail on how each expenditure activity category fits within scope as defined within Schedule 2 of the revised Order.

In assessing the proposed activities under the scope test, where the AER considered that a cost category defined within the budget application was not specifically demonstrated to fit within scope, the AER considered whether the activity could be established as outside scope in accordance with the revised Order.

Where an activity was not specifically referred to in the lists of activities in and outside scope within Schedule 2, the AER considered the DNSPs' regulatory obligations relating to the AMI roll-out and their reasons for including each cost category in their budget applications.

The AER also engaged a technical consultant, Energeia, to assist its review of the scope and prudence of expenditures in the budget applications. Energeia's initial

findings with respect to CP's and PC's budget applications were that the following activities were potentially outside scope:

- the record and transfer of one minute interval meter data
- near real-time IT processing capabilities
- fully redundant disaster recovery arrangements.[17]

Following further investigation, Energeia noted:

- while it was not clear what in-scope activity required the transfer of one minute interval data, and it is possible that additional network costs were incurred to support this capability, the risk (of it actually being outside of scope) is believed to be low given the limited unlicensed spectrum bandwidth available to meet the minimum specification[18]
- the requirement for a near real time IT platform is driven by the AMI minimum functional specification of performance levels for up to 2 per cent of the operational metering population for six transaction classes, combined with the minimum availability of 99 per cent specification. The analysis to support this activity was undertaken by an independent technical expert.[19]
- the fully redundant disaster recovery solution is based on the AMI minimum specification of 99 per cent availability and was supported by analysis undertaken for CP and PC by an independent technical expert.[20]

The AER considers that Energeia's assessment of the further information provided by CP and PC supports the DNSPs' claims that these identified activities are within scope as defined in Schedule 2 of the revised Order.

Two element meters

The AER reviewed PC's proposal to recover costs for two–element meters concurrently with its consideration of SP AusNet's (SPA) two–element meter proposal.

Two–element meters are not included in the AMI minimum functionality specifications, and accordingly may be considered outside scope under clause S2.11 (iii) of the revised Order.[21] The AER's framework and approach paper noted that AMI activities which exceed the minimum specifications and are accordingly outside scope may still be approved if the DNSP is able to demonstrate that there are associated net benefits to customers and market participants.[22]

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17 Energeia, *Review of Victorian DNSP's Advanced Metering Infrastructure Budget Applications 2009–11*, July 2009, p. 26-27.
18 ibid., p. 29.
19 ibid., p. 28.
20 ibid., p. 28.
21 Department of Primary Industries (Victoria), *Advanced metering infrastructure – Minimum AMI functionality Specification (Victoria)*, September 2008, clause 3.1.
22 AER, framework and approach paper, p. 29.

Two–element meters enable the separate measurement and charging of a customer's general energy consumption and that of a specific appliance, which is typically charged at off-peak rates. Examples include hot water storage units and slab storage heating and in some cases reverse cycle air conditioners. PC has approximately 212,000 existing customer installations with two–element meters and associated differential tariffs. Without differential tariffs (or with only single element accumulation meters), the entire energy use of these customers would be charged at a general rate of consumption at all times of the day. With single element interval meters (such as those within the AMI minimum functionality specifications), customers may be charged more cost reflective time of use tariffs, with differential rates for peak and off-peak consumption.

The existing two–element meters were installed in order improve network utilisation by moving electric hot water storage loads into off-peak periods to smooth the load on the network and avoid higher peak demand. While this is the case, it is also apparent that some customers with a two–element meter enjoy an 'afternoon boost' whereby the second element appliances are used during peak periods despite being charged at off-peak rates. This 'afternoon boost' charged at off-peak rates is an inefficient outcome of two–element meters, as customers do not face the true costs of supplying the 'afternoon boost' at peak times. Once the roll-out is complete and interval meter reading occurs, AMI will enable cost reflective time of use tariffs, such that a second element is no longer necessary to encourage off-peak consumption for these appliances.

The AER notes that neither CP, Jemena (JEN), or United Energy Distribution (UED) proposed two–element meters as part of their AMI roll-outs, as these DNSPs currently have fewer two–element meter customers due to the availability of gas hot water heating in these areas. The AER understands that these DNSPs are able to schedule their roll-outs such that the few affected customers will not need to be moved onto new tariffs until the AMI communications is enabled and time of use tariffs are available. As PC and SPA have larger proportions of their customers currently on two–element meters, the costs associated with avoiding rolling out AMI to two–element customers is significantly higher. Accordingly, SPA and PC are seeking to continue two–element meter arrangements for current two–element meter customers.

PC proposed to install a single-phase two–element AMI meter, in place of its current two–element accumulation meter, which will ensure that customers who have these dedicated load appliances continue to receive separate off-peak tariffs under AMI.

PC advised that maintaining a two–element meter arrangement under AMI would avoid price shocks for customers and enable it to continue its network demand management strategies. PC noted it had identified alternative options for dealing with network augmentation, such as shifting customers to new tariffs, however these options came at additional risk or cost to the business.[23]

The AER understands PC considered the option of transitioning its current two–element customers onto an estimated time of use tariff (prior to the connection of interval meter communications technology, expected to be in the second AMI budget period). This would enable the two–element customers to be charged at peak and off-

[23] Powercor presentation to the AER - *AMI Price Review, Metering & Differential Tariffs*, 20 May 2009.

peak tariffs, however until the AMI interval meter communications technologies are functioning, any billing would be approximate and would need to be estimated. The AER understands that the costs of transitioning customers onto these transitional tariffs, and then shifting them again to a permanent tariff once the AMI communications technologies are functioning, outweighs the costs of installing a second element in their AMI meters. The AER notes that this appears to be a transitional issue only, as once AMI communications technology is functioning, the cost of moving customers onto a time of use network tariff is likely to be lower than the cost of installing and maintaining a two–element interval meter.

PC provided further information to the AER on 20 May 2009, outlining its view of the consequences of excluding metering configurations that support differential tariffs (two–element meters), in terms of the impact on:

- customers' bills—customers who currently have a two–element meter may suffer a price shock when they are moved to a single element meter
- existing demand management initiatives—PC will be unable to specifically control the demand on customers' second element appliances
- AMI meter contract commitments—PC indicated that it was seeking certainty on the AER's view on cost recovery for two–element meters to enable it to continue its AMI procurement program as planned
- meter provision policies, deployment planning and customer management strategies—PC indicated it expected increased customer complaints should the AER reject its two–element meter proposal, and accordingly would need to prepare for this event
- the initial AMI charges application (submitted 1 June 2009)—PC indicated that its submitted charges application would need to reflect the AER's decision on its two–element meter budget proposal.[24]

PC estimated that the incremental cost of installing the second element when replacing affected meters is around $20 million. PC indicated that additional network augmentation costs of approximately $10 million around the Woodend area would arise if differential tariffs were discontinued. PC indicated that without the installation of two–element meters, similar network augmentation costs would be expected elsewhere on the network.[25] The AER sought confirmation of these costs from PC but this was not provided.[26]

Despite installing two–element meters, PC proposed to instigate a time of use tariff for existing customers' general consumption (light and power) but maintain the current off-peak tariff for hot water load. PC noted that new customer connections would not be eligible for a two–element meter, but would rather be charged a time of use tariff for all energy consumption on a single element meter.

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24 ibid.
25 ibid.
26 AER, email to Powercor, 25 June 2009.

The AER has considered PC's proposed two–element meters in the context of SPA's proposal to invest in this type of metering arrangement, as outlined in section 2.3.3.1 below. The AER recognises that the policy intent of the AMI roll-out is to enable DNSPs to move customers onto sophisticated and cost reflective tariffs, which include the provision of appropriate price signals regarding peak and off-peak periods. The AER considers that this can be done with a single element meter, without the incremental cost of the second element. More importantly, the benefits of maintaining old tariffs appear to be transitional and it has not been demonstrated by PC that these offset the additional costs that would be incurred in providing for the second element once the AMI communications technology is operational.

However, to some extent the AER has quantified the relative costs and benefits of two–element meters using data provided by SPA (see section 2.3.2.1). These data indicate that the incremental cost of installing a second element during meter replacement is $27, which is outweighed by the costs of interim tariff reassignments and associated data processing difficulties. The AER therefore concludes that replacing two–element accumulation meters with two–element AMI meters is likely to result in a lower net cost than replacement with single element meters during the transitional period, before AMI communications are operational.

The AER expects that the net benefit associated with installing a two–element meter will reduce over time as the AMI communications technology is rolled out and time of use tariffs are available. Accordingly, the AER notes that in the second AMI budget period (2012–15) two–element meters are not likely to be required.

AER conclusion

After reviewing the information provided in support of CP's and PC's budget applications, the AER did not establish that any activity in the applications were outside scope. The AER notes however, that 'AMI technology' is very broadly defined under clause S2.6(b)(1)(i).

Table 2.5 summarises the AER's considerations of CP's and PC's AMI roll-out under the scope test with respect to major activity groupings.

Table 2.5: Summary of AER considerations under the scope test- CitiPower and Powercor budget applications

Proposed expenditure category	Activities undertaken	AER considerations
Meter supply and installation	Procurement of AMI and accumulation meters	Within scope, as defined per: S2.10 (a)(i) procurement…of accumulation and manually read interval metering installations to support the billing of network tariffs, including accumulation meters and manually read meters, measurement transformers and associated equipment
	Logistical support for the meter roll-out (warehousing, transport and distribution of meters, and returns, storage and disposal and removed and faulty meters)	Within scope, as defined per: S2.10 (b)(2)(xi)(F) program governance and management, including contractors and system integrators, including necessary facilities, administration, travel and accommodation
	Installation services, including management and oversight of the vendor's activities, field based installation activities and back office support to initiate service orders and implement changes within relevant information systems	Within scope, as defined per: S2.10 (b)(1)(i) …provision of remotely read interval meters required to be installed… 'AMI technology'… S2.10 (a)(i) procurement, installation and operation of accumulation and remotely read interval meters S2.10 (b)(1)(iii) provision and operation of business processes and IT systems to manage the remotely read interval meter roll-out obligations
Communications technology supply and installation	Selection and procurement of AMI communications technology	Within scope, as defined per: S2.10(b)(1)(i) provision and operation of…communications equipment, communications services…
	Installation of communications technology	Within scope, as defined per: S2.10(b)(1)(i) provision and operation of…communications equipment, communications services…

Information technology	IT program management	Within scope, as defined per: S2.10(b)(2)(xi)(B) program governance and management, including planning, program and project management S2.13(b)(i) IT applications, systems and infrastructure to manage the roll-out of AMI technology, including…provision of a works management system and infrastructure and mobility system…
	Infrastructure	Within scope, as defined per: S2.10(b)(1)(ii) information technology infrastructure and all information technology systems to comply with the Specifications
	Field mobile computers to support the roll-out	Within scope, as defined per: S2.13(b)(i) IT systems and infrastructure to manage the roll-out of AMI technology, including provision of a works management system and infrastructure and mobility system including hand held devices and remote data communications…
	Interval meter billing	Within scope, as defined per: S2.10(c)(i) procurement, installation, operation and maintenance of AMI technology to support the billing of network tariffs S2.10(c)(ii) provision of metering data services, including…data provision to NEMMCO and market participants
	Meter data management systems and scaling	Within scope, as defined per: S2.13(a)(i) provision of a meter data management system and infrastructure to support and manage remotely read interval data…
	System and network management system integration	Within scope, as defined per: S2.13(c)(i) provision of a network management system and infrastructure for the real time management of the AMI technology…

	Workforce scheduling, including enhancements to the existing geographic information and customer information systems	Within scope, as defined per: S2.13(b)(iii) provision of a geospatial information system and infrastructure to capture and maintain the geographic network model for AMI technology and associated data for the AMI technology roll-out planning S2.13(b)(v) provision of a customer management system and infrastructure to support customer communications, installation appointment management, customer enquiries and disputes
	Network management system	Within scope, as defined per: S2.13(c)(i) provision of a network management system and infrastructure for the management of AMI technology
	Other IT, (an internet portal to enable stakeholder access to information)	Within scope, as defined per: S2.10(b)(1)(iii) business processes and IT systems to manage the remotely read interval meter roll-out obligations S2.10(b)(2)(xi)(G) program governance and management, including legal and regulatory
Program governance and management/change management	Program management office	Within scope, as defined per: S2.10(b)(2)(ix) provision and operation of business processes to ensure that the processes and IT systems associated with Regulated Services can be operated S2.10(b)(2)(x) provision and implementation of change management, training and business continuity plans to enable business transition…
	Technology procurement	Inside scope, as defined within: S2.10(b)(1)(i) provision and operation of …AMI technology
	Business transformation	Within scope, as defined per: S2.10(b)(2)(x) provision and implementation of change management, training and business continuity plans to enable business transition…

Operating costs	Field implementation	Within scope, as defined per: S2.10(b)(2)(xi)(B) program governance and management, including planning, program and program management; (C) procurement, contract and supplier management
	Regulatory compliance costs	Within scope, as defined per: S2.10(b)(2)(xi)(G) program governance and management, including legal and regulatory, including budget, charges and fees application processes
	Meter data services	Within scope, as defined per: S2.10(a)(ii) provision of meter data services S2.10(c)(ii) provision of metering data services, including remote meter reading, meter data processing, meter data management, data provision to NEMMCO and market participants
	Operation and maintenance of IT	Within scope, as defined per: S2.10(a)(v) operation, maintenance and enhancement of IT applications, systems and infrastructure S2.10(b)(iii) business processes and IT systems to manage the remotely read interval meter obligations
	Communications operations	Within scope, as defined per: S2.10(b)(1)(i) provision and operation of communications equipment, communications services…'AMI technology' S2.10(c)(i) procurement, installation, operation and maintenance of AMI technology to support the billing of network tariffs
	Telecommunications systems (wide area network/backhaul)	Within scope, as defined per: S2.10(c)(i) procurement, installation, operation and maintenance of AMI technology to support the billing of network tariffs

Customer service associated with AMI technology	Within scope, as defined per: S2.10(c)(v) customer service…
Meter maintenance	Within scope, as defined per: S2.10(a)(i) …maintenance of accumulation and manually read interval metering installations
Customer response trials	Within scope, as defined per: S2.10(b)(2)(vi) customer response trials
Executive and corporate office services	Within scope, as defined per: S2.10(a)(vi) executive and corporate office services S2.10(b)(xiii) executive and corporate office services S2.10(c)(vii) executive and corporate office services

2.1.2.2 Prudent test

Contract costs—competitive tender test

CP and PC submitted their budget applications on 27 February 2009, and accordingly contract costs for the purposes of assessment against the prudent test are those that are pursuant to contracts signed before that date. Although their budget applications indicated that the DNSPs intended to submit revised budget applications prior to 31 August 2009, as provided for under the revised Order, at the time of this draft determination, neither CP or PC have submitted a revised budget application.

CP's and PC's budget applications stated that the parties engaged CHED Services Pty Ltd (CHED Services) to provide all regulated services associated with the AMI roll-out. CHED Services in turn subcontracted some services to Powercor Network Services Pty Ltd (Network Services). The budget applications note that CHED Services is a related party of both CP and PC, while Network Services is a separate legal entity to the DNSPs.[27]

CP's budget templates included $60.2 million of contract costs over 2009–11, while PC's budget templates included $163.5 million of contract costs.[28] The DNSPs indicated that contract costs include those for communications technology, meters, backhaul services and field installation services.[29]

The DNSPs undertook significant corporate governance and probity audit processes to ensure their contract costs were tendered competitively. CHED Services engaged Portland Group to undertake an independent probity audit of CP and PC's AMI procurement program. Documentation outlining the results of the audit process was provided to the AER with CP's and PC's budget applications, and indicated that:

> the processes adopted and executed by CHED met with good practice and the Essential Services Commission (ESC)/Australian Energy Regulator (AER) Competitive Tender Process requirements. Furthermore, through the course of audits CHED adopted process improvement opportunities as identified and recommended by Portland Group.[30]

The DNSPs also engaged Deloitte Touche Tohmastu (Deloitte) to evaluate the AMI request for proposal processes applied to CP and PC's AMI roll-out. Deloitte concluded that:

> The (AMI sourcing and evaluation) framework will provide a factually correct and robust approach to evaluating preferred providers of services and/or equipment for the AMI program.[31]

During the review, the AER requested that CP and PC provide all request for information and request for tender documentation sent to potential vendors associated with the AMI roll-out. The DNSPs provided this information, including draft contracts.

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27 CitiPower, op. cit., p. 21, Powercor, op. cit., (budget application) p. 21.

28 CitiPower, op. cit., budget templates (confidential); Powercor, op. cit., (budget application) budget templates (confidential).

29 CitiPower, op. cit., p. 21, Powercor, op. cit., (budget application) p. 21.

30 CitiPower, op. cit., Appendix F, p.3, Powercor, op. cit., (budget application) Appendix F, p.3.

31 Deloitte Touche Tohmatsu, *RE: Provision of sourcing and evaluation services for the AMI programme*, 15 February 2008.

CHED Services undertook a number of request for information and request for tender processes in seeking vendors for the AMI roll-out, including:

- a request for proposals from vendors with the capability to provide AMI technology and design, backhaul communications and associated activities (17 September 2007)
- a request for information from vendors with the capabilities to provide AMI field force deployment and installation activities (25 September 2007)
- a request for proposals from vendors with the capabilities to provide AMI field force deployment and installation activities (28 November 2008)
- updates to the AMI technology and design, backhaul communications and associated activities request for proposal in July and September 2008, sent to specific vendors.

The AER reviewed the documentation provided by CP and PC to support their statements that all AMI contract costs have been competitively tendered.

This information was also reviewed by the AER's consultant, Energeia, who concluded that the overall tender approach, supported by documentation and an audit process, appeared to meet the tender test requirements in the revised Order.[32] However, Energeia concluded that the related party contracts between CP, PC, CHED Services and Powercor Network Services did not satisfy the competitive tender requirements set out in the framework and approach paper.

The costs associated with CP's and PC's related party contracts are classified as non-contract costs within their budget applications. Accordingly, the AER has assessed these costs as non-contract costs, in accordance with the revised Order.

Clause 5C.10 of the revised Order states that in making a determination in which the AER establishes that a contract was not let in accordance with a competitive tender process, the AER must have regard to:

- the tender process for that contract
- whether there has been compliance with that process, and
- where the AER establishes that the request for tender unreasonably imposed conditions or requirements that prevented or discouraged the submission of any tender that was consistent with the selection criteria, that fact.

From the documentation provided, the AER did not establish that the AMI tender processes conducted by CP and PC were not competitive, and therefore did not establish that costs associated with these signed contracts are not prudent. The AER's assessment of CP's and PC's contract costs under the competitive tender test, using the criteria set out in the framework and approach paper, is summarised in Table 2.6.

[32] Energeia, op. cit., p. 25.

Table 2.6: AER considerations under competitive tender test- CitiPower and Powercor budget applications

AER approach to competitive contract test, as set out in framework and approach	Considerations – as outlined in the framework and approach paper
that the initial request for tender documentation is made widely available to all parties that might be interested in tendering	Initial request for information (RFI) documentation (for AMI technology and design, backhaul communications and field force deployment and installation) widely distributed. The following request for proposal (RFP) documentation was distributed according to the responses from the RFI, which is appropriate in the circumstances.
that, if adopted, any multi-stage tendering process is appropriate given the nature of the services sought and the number and prospects of potential bidders	Multi stage tendering process adopted: Initial RFI process conducted to narrow field of tenderers to then be subject to the later RFP. Portland Group noted that prequalification questions issued to potential vendors were appropriate for the AMI project.[33] Given the scope and quantity of tender documentation, and potential for international vendors, two-stage process appears reasonable.
that the issued tender documentation: *provides adequate information about the background to the AMI program and the DNSP* *details the tender process* *provides a detailed specification of the services sought* *adequately addresses matters such as risk sharing and contractual terms and conditions* *where appropriate, sets out the tender evaluation criteria*	Portland Group found that the RFP documents were detailed and in a logical format, providing the key elements required for comprehensive RFP responses and evaluation.[34] AER found that the RFP documents: • provided a good level of detail on the Victorian AMI program and the DNSPs • provided a good level of detail on the tender process to be undertaken • provided a detailed specification of the services sought, as also noted by Portland Group[35] • did not address risk sharing between the DNSP and vendor, however appropriately required risk management processes be implemented by the vendor • clearly set out tender evaluation criteria.

[33] Portland Group, *AMI RFP Interim Draft Report*, 20 September 2007, p. 8.
[34] ibid., p. 9.
[35] ibid., p. 9.

that adequate time has been allowed for bid preparation and between tender stages, taking into account the scope and complexity of information sought from tenderers	RFP: AMI technology and design, backhaul communications and associated activities—issued 17 September 2007, responses due 12 October 2007 RFI: AMI field force deployment and installation activities—issued 25 September 2007, response due 19 October 2007 RFP: AMI field force deployment and installation activities—issued 28 November 2008, response due 5 January 2009 RFP: updates to the AMI technology and design, backhaul communications and associated activities request for proposal in July and September 2008—appropriate time given for responses The AER considers that timeframes for responses appear appropriate.
that the request for tender does not unreasonably impose conditions that prevent or discourage the submission of any tender. For example, these might include the payment of high fees for receiving tender documentation, technical requirements that are unreasonably high given the nature of the tender, unreasonable liability requirements, or any other requirements that impose unduly high expenses on potential tenderers	No evidence that this occurred, independent probity audit supports this finding.
that detailed and appropriate tender evaluation criteria have been developed and applied. The design of the tender and the evaluation criteria need to ensure that, as far as possible, competing bids are easily comparable.	Deloitte review of the evaluation criteria found that the vendor assessment processes were appropriate. The AER agrees with Deloitte's findings.
that any 'bundling' of different services into a single contract is appropriate and that the advantages of doing so (economies of scale, reduced administration costs) outweigh the costs (less competition)	Procurement strategy was to bundle RFI/RFP processes into two major categories: AMI technology and installation services. Bundling of services appears appropriate, related to tender responses.
that appropriate tender briefings have been conducted and tenderers have been provided	Tender briefing sessions provided for all AMI RFI and RFP processes, including independent briefing sessions for candidates

with the opportunity to clarify aspects of the tender	to the RFP updates.
that the DNSP has taken appropriate steps to verify the information provided in tender responses, including referee interviews, field trials, and other checks	Appropriate vendor review processes undertaken, including a comprehensive independent risk assessment of the two major vendors, reviewing capabilities and previous relevant work.[36] The AER considers this is appropriate.
that any post-tender negotiations with the successful tenderer are consistent with the tender and do not call into question the original selection decision	No documentation of the vendor negotiation process was provided. However, the AER notes the independent review of the evaluation and sourcing strategy concluded the process reflected a robust approach.
that the outcome of major tenders have been considered and approved by the DNSPs' boards of directors	No evidence provided, however significant independent reviews of the tendering processes, evaluation and potential vendors support the AER's findings that the processes were appropriate.
that for large contracts, a probity audit of the tendering process has been conducted.	Probity audit and independent reviews of procurement and sourcing strategies applied.

[36] CSC Australia Pty Ltd, *AMI Vendor Security Threat and Risk Assessment*, September 2008. (Provided as Appendix K with CP's and PC's initial AMI budget applications).

Non-contract costs—expenditure incurred test

In considering whether the non-contract costs proposed by CP and PC are more likely than not to not be incurred, the AER analysed the information submitted by the DNSPs and the likely implications for the DNSPs of not incurring budget costs.

Total non-contract costs proposed for the initial budget period are:

- CP—$87.7 million (60 per cent of total budget)[37]
- PC—$166.5 million (50 per cent of total budget).[38]

Information submitted by CP and PC in support of their budget applications did not indicate which proposed non-contract costs would be subject to future competitive tender processes, however the AER understands that a considerable proportion of the costs will be subject to a tender process in the future.

As noted above, the AER has assessed the related party contract between CP, PC and CHED Services under the expenditure incurred test. The AER found that these costs are likely to be incurred by CP and PC in rolling out AMI for the initial budget period.

The AER considered each expenditure category of CP's and PC's proposed submitted budgets with regard to whether any costs are unlikely to be incurred as part of the AMI roll-out. It considered the implications for the DNSPs of not incurring costs, with regard to their regulatory obligations. The AER considers that failing to incur the proposed non-contract costs may result in CP and PC failing to meet their AMI roll-out obligations imposed by the revised Order, which places a degree of risk on the DNSPs to ensure that all necessary components of the roll-out are procured and implemented.

The AER's consultant, Energeia, assessed CP's and PC's proposed expenditure with regard to the expenditure incurred test in the revised Order. Energeia noted that the majority of non-contract costs in the CP and PC budget applications were estimated based on tender outcomes. Where tenders were incomplete, costs were based on an average of short listed vendors, which Energeia noted may be inaccurate due to variations in tender response prices. However, Energeia noted that as the lowest cost tender is not always selected, deriving estimates based on an average of tender responses is reasonable, and the costs are likely to be incurred.[39]

The AER sought information from the Victorian Government, (through the Department of Primary Industries (DPI)) as to the likely purpose and progress of AMI customer response trials, for which CP and PC proposed $0.75 million and $1.8 million of expenditure over the initial budget period, respectively. DPI indicated that the customer response trials, which were mandated as a necessary element of the AMI roll-out had been delayed, and are unlikely to be required in 2009, nor 2010.[40]

The AER has therefore established under clause 5C.3(b)(iii) of the revised Order that the costs associated with customer response trials are unlikely to be incurred by CP

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37 CitiPower, op. cit., budget templates (confidential).
38 Powercor, op. cit., (budget application) budget templates (confidential).
39 Energeia, op. cit., p. 26.
40 AER, File note of phone call with DPI, 26 June 2009

and PC over the initial budget period. Therefore, the AER has removed these costs from their submitted budgets.

In conclusion, aside from the costs associated with AMI customer response trials, the AER has not established it is more likely than not that CP's and PC's non-contract costs will not be incurred.

Non-contract costs—commercial standard test

As noted in section 1.3.1.5, the revised Order requires that, in conducting the commercial standard test, the AER shall take into account and give fundamental weight to the circumstances of the DNSP, or other person incurring or managing the expenditure at the time the commitment was made to incur or manage the expenditure or expenditure excess (as applicable).

The DNSPs did not engage an independent probity auditor to assess the forecast budget non-contract costs for the initial budget period. However, as noted above, CHED Services engaged consultants to review the short listed tender responses for the provision of AMI technology, including a review by KEMA Consulting Inc (KEMA) on responses relating to the network management system, home area networks, mesh communications and mesh infrastructure.[41] CHED Services also engaged CSC Australia Pty Ltd to conduct a qualitative technical security threat and risk assessment of two short listed AMI technology providers.[42] The AER considers the engagement of independent technical consultants to review tender responses is reflective of the commercial standard that a reasonable business would employ in the circumstances.

The DNSPs stated that the forecast costs within their budget applications were based on costs derived from competitive tenders, where possible. Where contracts had not been finalised, costs were estimated based on an average of short listed vendor forecasts. [43] The AER considers this is a reasonable cost forecasting approach in the circumstances.

The AER's consultant, Energeia, noted the comprehensive and high quality of information submitted by CP and PC in support of their budget applications, and stated that this provided some comfort that incurring the non-contract costs would not represent a substantial deviation from the commercial standard. However, Energeia also commented that the commercial process for non-contact costs was unclear, stating that there was insufficient supporting evidence of key procurement decisions, such as outsourcing versus insourcing, or the decision to require a multi-vendor network management system. [44]

The AER considered the information provided by CP and PC in light of Energeia's concerns. The AER notes that Portland Group was engaged by CHED Services to audit the overall AMI sourcing strategy, and found that the process was addressed in

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41 KEMA, *CHED Services Advanced Meter Infrastructure Independent Technical Review Technical Assessment Report*, 24 October 2008, p. 7. (Provided as Appendix B with CP's and PC's initial AMI budget applications).

42 CSC Australia Pty Ltd, op. cit. (Provided as Appendix K with CP's and PC's initial AMI budget applications).

43 CitiPower, op. cit., p. 14, Powercor, op. cit., (budget application) p. 14.

44 Energeia, op. cit., p. 26.

an appropriate manner and reflected in the tender process.[45] The AER also notes the DNSPs' statements that the procurement processes undertaken by CHED Services have been subject to significant corporate governance and probity, and that ultimate accountability for the roll-out decisions rests with CP's and PC's respective Boards of directors.[46] The AER considers that this indicates a reasonable commercial standard for key decision making processes was undertaken by CP and PC, including decisions to outsource or in source AMI activities.

The AER considers that the DNSPs' requirement for a multi-vendor network management system indicates a reasonable level of risk management in the procurement processes. Multi-vendor network management systems will allow the DNSPs some flexibility in negotiating with metering providers, and will also allow them to seek other suppliers in the event their chosen vendors are unable to supply meters in the required timeframes.

In considering CP's and PC's non-contract cost expenditure under the commercial standard test, the AER considered non-contract costs within each cost category, as defined by the DNSPs. The following sections discuss the amount of non-contract costs within each expenditure category, the reasons the costs need to be incurred to roll-out AMI and the AER's conclusions on each cost category under the commercial standard test.

Meter supply and installation

Non-contract cost forecasts for meter supply and installation are $19 million for CP and $40.3 million for PC. These costs represent the estimated procurement and installation expenditure for approximately 184 000 accumulation, manually read interval and AMI meters for CP, and 453 000 meters for PC.[47]

CP and PC's meter supply and installation costs include:

- meter procurement
- logistical support for the meter roll-out including warehousing; transport and distribution of meters; returns, storage and disposal of removed and faulty meters
- installation services including management and oversight of the vendor's activities; field based installation activities; and back office support to initiate service orders and implement the necessary changes within the information systems.[48]

The procurement and installation of AMI meters is essential to allow CP and PC to meet their regulatory obligations under the revised Order. The DNSPs are also required to continue their replacement schedules for accumulation meters until such time as the AMI interval meters are ready to be rolled out. CP and PC stated that the following factors were taken into account in determining meter installation rates and costs:

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45 Portland Group, *RE: Audit of AMI Program Sourcing Processes*, 26 January 2008 (Provided as Appendix C with CP's and PC's initial AMI budget applications).

46 CitiPower, op. cit., p. 14, Powercor, op. cit., (budget application) p. 14.

47 CitiPower, op. cit., p. 19, Powercor, op. cit., (budget application) p. 19.

48 CitiPower, op. cit., pp. 30-34, Powercor, op. cit., (budget application) pp. 30-34.

- the circumstance under which a meter is replaced
- the time at which the meter is replaced
- the type of meter being removed and the type of meter being replaced
- the geographic location of the meter
- expectations with respect to revisits
- expectations with respect to difficult or complex sites
- the physical location of the meter.[49]

CP and PC submitted that all of their proposed non-contract costs associated with meter supply and installation will be subject to the competitive tender process undertaken to date for contract costs, by the end of the initial budget period.[50]

In considering the regulatory obligations and requirements placed upon CP and PC in implementing their AMI roll-outs and the nature of the AMI roll-out, the AER considers the DNSPs' non-contract metering costs proposed to be incurred does not involve a substantial departure from the commercial standard that a reasonable business would exercise in the circumstances.

Communications technology supply and installation

Total non-contract costs for the selection, supply and installation of communications technology are forecast to be $2.6 million for CP and $7.1 million for PC. Communications technology is required to connect AMI meters to access or relay points within the network, and to connect these access points to the DNSPs' network management systems.

CP and PC undertook an investigation of various AMI communications technologies via industry forums, field trials and international study tours. The DNSPs compared options on the basis of value, regulatory compliance, network impact, reliability, future proofing, solution maturity and security.[51] CP elected to implement a 100 per cent mesh radio based communications solution for its AMI roll-out. As a small proportion of PC's network is characterised by very low customer density, it elected to implement a predominantly mesh radio based solution (97 per cent), supplemented by point to point (mobile wireless and public switched telephone network) technologies (3 per cent).[52] PC submitted that while point-to-point communication technologies are relatively expensive solutions, in some rural circumstances it is the only option.[53]

Communications technology installations include access points, relays and extenders to collect data and send it to the network management system. CP and PC submitted

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49 CitiPower, op. cit., p. 32, Powercor, op. cit., (budget application) p. 32.
50 CitiPower, op. cit., p. 30, Powercor, op. cit., (budget application) p. 30.
51 CitiPower, op. cit., pp. 34-35, Powercor, op. cit., (budget application) pp. 34-35.
52 CitiPower, op. cit., p. 35, Powercor, op. cit., (budget application) p. 35.
53 Powercor, op. cit., (budget application) p. 37.

that, while currently non-contract costs, these costs will be subject to a competitive tender process during the initial budget period.[54]

The AER considers that CP's and PC's communications technology roll-out decisions were appropriate, given the nature of the AMI regulatory obligations and the circumstances of the DNSPs. The AER considers that the options analysis and use of technical consultants was appropriate and that these costs proposed to be incurred do not involve a substantial departure from the commercial standard that a reasonable business would exercise in the circumstances.

Information technology (IT)
Total opex and capex non-contract IT costs for CP are forecast as $38.2 million, and for PC as $60.6 million.

CP's and PC's IT activities include:

- IT program management—to manage the overall selection, procurement and installation of IT, costs for which were estimated based on the recommendations of an independent consultant

- infrastructure—including increasing server capacity; upgrading storage and backup infrastructure; upgrading networks in support of systems availability to match near real time requirement; up-scaling disaster recovery to cater for new near non-stop and increasing processing requirement; and introducing various new technologies

- mobility—including field mobile computing to support the roll-out, in order to automate dispatch of service orders and fault response processes and deliver savings in reduced travel times

- interval meter billing—involving a re-evaluation of the existing customer information system billing system processes, which concluded that it is more efficient to upgrade the existing customer information system to accommodate AMI

- meter/data management system—including scaling the existing systems to manage the AMI meter data processing requirements and provide a platform for integrating multiple meter data collection technologies with back office applications

- system and network management system integration—costs for facilitating around 110 points of integration between IT applications, to be managed by a Utility Service Bus

- workforce scheduling—including updates to existing geographic information and customer information systems

- network management system—to manage the communications infrastructure through commissioning meters and communications nodes, ongoing collection of

[54] CitiPower, op. cit., p. 37, Powercor, op. cit., (budget application) pp. 38-9.

meter reading data, transmittal of event information to and from the meter, alarm and alert functions, and delivery of meter and communications access point firmware upgrades

- other—including an internet portal for all AMI team members to access information on the roll-outs, to enhance program management and ensure they meet their regulatory reporting requirements.[55]

CP's and PC's budget applications state that the IT components of the AMI roll-out represent significant challenges for the DNSPs in meeting their regulatory obligations, including the AMI minimum functionality and service level specifications. The DNSPs stated that their extensive international research, seeking organisations and jurisdictions implementing AMI at the meter data volumes required in Victoria, resulted in no comparative circumstances.[56] They also stated that they sought to manage the risk of their AMI IT solutions through the following strategies:

- leveraging existing systems where possible
- selecting off-the-shelf solutions from leading IT companies
- using experienced technical experts to design underlying technical infrastructure to meet the AMI minimum specifications
- adopting future-proofing techniques
- benchmarking proposed AMI architecture against international companies, to incorporate lessons learnt
- applying lessons learnt from the introduction of full retail contestability.[57]

The AER and its consultant, Energeia, have considered each element of the IT costs proposed by the DNSPs. After considering further information provided by CP and PC, Energeia concluded that their proposed IT costs met a reasonable commercial standard.[58] After analysing the technical consultant reports, the AER considers that CP's and PC's proposed IT activities are likely to be necessary to facilitate the broader AMI infrastructure roll-out, and to ensure it meets the minimum functionality and specifications established by the DPI.

Considering the nature of the AMI roll-out and the state of the necessary technologies and changes to the DNSPs' business systems to facilitate the roll-out, the AER considers CP's and PC's proposed IT costs do not involve a substantial departure from the commercial standard that a reasonable business would exercise in the circumstances.

Program governance and management/change management

The non-contract costs associated with program governance and change management activities for CP and PC were forecast for the initial budget period as $11.5 million

[55] CitiPower, op. cit., pp. 38-51, Powercor, op. cit, (budget application) pp. 39-52.
[56] CitiPower, op. cit., p. 38, Powercor, op. cit., (budget application) p. 39.
[57] CitiPower, op. cit., pp. 39-40, Powercor, op. cit., (budget application) pp. 38-39.
[58] Energeia, op. cit., p. 28.

and $28.1 million, respectively. The DNSPs have indicated that these services are being provided by CHED Services.

Program governance and management costs include:

- project management offices—to ensure both CP and PC develop appropriate business structures to support the AMI program
- technology procurement—the technology selection and procurement processes
- business transformation—reorganisation to facilitate AMI
- field implementation—planning, resourcing, scheduling, compliance auditing, technical and hazard advice, contract management, preparation and the issuing of site information to field staff, induction training and reporting
- regulation—including the activities associated with preparing reports, budget and charges applications to comply with the revised Order.[59]

In considering the nature of the AMI roll-out and the DNSPs' regulatory obligations, the AER considers that program governance and change management expenses are costs which do not involve a substantial departure from the commercial standard that a reasonable business would exercise in the circumstances. The AER considers it reasonable that CP and PC have sought to procure AMI program management services from CHED Services, given the significance of the AMI roll-out for CP and PC and the necessary changes to the DNSPs' business practices.

The AER notes that it may have also been appropriate for CP and PC to seek to procure such services internally, as was done by JEN and UED. However, the AER understands CP and PC undertook an assessment of options for managing the roll-out, and determined that given available resources, it would be more appropriate to procure these services from a related party. The AER has not assessed the quantum of CP's and PC's related party costs, as it considers that the revised Order does not permit the AER to undertake an efficient cost review of AMI related party margins.

The AER will conduct an investigation into related party contracts of the DNSPs more generally as part of its Victorian distribution review for 2011–15 under the National Electricity Rules. The AER's findings as part of this distribution review may inform its assessment of related party management fees within the DNSPs' second AMI budget period applications for 2012–15.

In considering the nature of the roll-out obligations, the AER considers the program governance and change management costs proposed to be incurred does not involve a substantial departure from the commercial standard that a reasonable business would exercise in the circumstances.

Operating costs

Total non-contract operating costs for the initial budget period are estimated as $27.6 million for CP and $56.8 million for PC. AMI operating costs include labour costs for

[59] CitiPower, op. cit., pp. 51-53, Powercor, op. cit., (budget application) pp. 52-54.

the roll-out and maintenance of the AMI technology infrastructure. The majority of AMI operating services are being, or will be, provided by CHED Services.[60]

The DNSPs categorised AMI opex into four main groups:

- meter data management services—such as the management and transfer to market of the higher volumes of meter data, fault detection and investigation, and costs in meeting higher service standards
- customer services—including managing a call centre, guaranteed service level payments, customer information mail outs, customer response trials[61]
- IT support costs—operation and maintenance of IT, backhaul communications systems
- meter maintenance—including testing of meters.[62]

Executive and corporate office services are also included in the DNSPs' opex cost category within their budget applications.[63]

The AER has considered each operating cost category described by CP and PC, and has found that these costs are likely to be required in facilitating the AMI roll-out and transitioning to significantly different data collection, customer service and IT business processes. Taking into account the circumstances of CP and PC prior to the AMI roll-out, and the nature and regulatory obligations of the AMI roll-out, the AER considers that these costs proposed to be incurred do not involve a substantial departure from the commercial standard that a reasonable business would exercise in the circumstances.

2.1.3 AER conclusions

For the reasons set out in sections 2.1.2.1 and 2.1.2.2, in relation to the expenditure proposed in CP's or PC's initial AMI submitted budgets, the AER has:

- not established that the expenditure is for activities outside scope at the time of commitment to that expenditure and at the time of this draft determination
- not established that the contract costs (as defined in the revised Order and set out in CP's and PC's budget applications) are associated with contracts that were not let in accordance with competitive tender processes
- established that it is more likely than not that the costs proposed by CP and PC for customer response trials will not be incurred

60 CitiPower, op. cit., p. 54, Powercor, op. cit., (budget application) p. 56.
61 The AER notes that the costs associated with the customer response trials did not pass the expenditure incurred test, as detailed above. Accordingly, it was not necessary for the AER to assess these costs under the commercial standard test.
62 CitiPower, op. cit., pp., 54-60, Powercor, op. cit., (budget application) pp. 56-62.
63 CitiPower, op. cit., p. 62, Powercor, op. cit., (budget application) p. 60.

- not established that it is more likely than not that CP's and PC's non-contract costs, aside from proposed customer response trials, will not be incurred

- not established that the proposed non-contract costs involve a substantial departure from the commercial standard that a reasonable business would exercise in the circumstances.

2.1.4 Draft determination

The AER's draft determination rejects CP and PC's submitted budgets. The new submitted budgets it has determined to approve are set out in Tables 2.7 and 2.8.

Table 2.7: AER draft determination- new submitted budget for CitiPower ($'000s, real 2008)

	2009	2010	2011
CP proposed capex	23,683	42,829	46,976
CP proposed opex	13,988	10,089	10,358
CP proposed customer response trial costs	433	191	133
AER draft determination – CP capex	23,683	42,829	46,976
AER draft determination – CP opex	13,555	9,897	10,225

Source: CitiPower, Advanced Metering Infrastructure Budget Application 2009-11, 27 February 2009, budget templates (confidential).

Table 2.8: AER draft determination- new submitted budget for Powercor ($'000s, real 2008)

	2009	2010	2011
PC proposed capex	41,232	98,460	117,520
PC proposed opex	29,505	20,588	22,708
PC proposed customer response trial costs	1,010	446	311
AER draft determination – PC capex	41,232	98,460	117,520
AER draft determination – PC opex	28,495	20,142	22,397

Source: Powercor, Advanced Metering Infrastructure Budget Application 2009-11, 27 February 2009, budget templates (confidential).
Note: Totals may not add due to rounding

2.2 Jemena Energy Networks and United Energy Distribution

Jemena Energy Networks (JEN) and United Energy Distribution (UED) formed a partnership to undertake the AMI roll-out in order to reduce the costs and risks associated with meeting their obligations under the revised Order. In 2008, a joint arrangement between JEN and UED for the mandated AMI roll-out was finalised, and the parties engaged Alinta Asset Management (AAM) to manage the delivery of the AMI program, including the budget and charges applications, for the initial budget period (2009–11).[64] JEN and UED submitted very similar budget applications, and attached a combined appendix prepared by AAM with further details of their submitted budgets. This appendix is referred to as the combined budget application. The AMI program is governed by an internal steering committee comprising executive managers representing JEN, UED and AAM, which make recommendations to JEN and UED. Costs of the program are subject to a simple pro-rata allocation between JEN and UED, according to the costs that each party would have incurred without the cost sharing arrangement in place.[65]

2.2.1 Initial AMI budget application 2009–11

2.2.1.1 Roll-out program

The combined JEN and UED AMI roll-out program is defined according to seven categories of work:

1. Technology—including procurement of: meters capable of advanced functions; local area network for communication between the meters and data concentrators (mesh radio based solution); wide area network for communication systems and infrastructure between the back-office and data concentrators (third generation cellular technology) and network management system for back-office communications[66]
2. Information technology (IT) systems and infrastructure—replacement or upgrade of the majority of systems applications and infrastructure involved in the management, processing and billing of meter data. This includes software license and maintenance, IT infrastructure, hardware and platform support, general hardware, system integrator costs, license maintenance, tier 2/3 support, hardware and infrastructure support[67]
3. Acceptance testing—established to assess the capability of AMI technologies, IT systems and infrastructure and business processes to support the delivery of the AMI program. This includes procurement of testing for meters and communications, network management system, IT applications and industry testing[68]
4. Installation services—including activities for managing and delivering the AMI roll-out including the installation and commissioning of data concentrators,

64 Alinta Asset Management, *AMI Budget Application 2009-11*, 26 February 2009, pp. 26-37.
65 ibid., p. 33.
66 ibid., p. 48 and pp. 83-86
67 ibid., p. 50 and 92.
68 ibid., p. 57 and 100.

repeaters, simple and complex meters, the capture and recording of asset information for all assets, the management of logistics and supply chain for the program and the operation of consumer communications centres to support the roll-out[69]

5. Program management—activities for the management, monitoring and reporting of program performance to ensure efficient delivery of the AMI program.[70]
6. Business and industry transition—identification, design, development and implementation of operational processes during the transition to AMI and on an ongoing basis[71]
7. Operational costs—including non-AMI operations associated with the maintenance of the DNSPs' current systems, such as manual meter reading of existing meters, meter maintenance, purchase, installation and IT support, until the roll-out is complete. Also, AMI operations to manage the back-office transition between accumulation and AMI meters.[72]

2.2.1.2 Program costs

JEN and UED proposed total costs for their combined AMI program over 2009–11 of $381.3 million, of which $307.1 million is capex and $74.1 million is opex.[73]

As at 27 February 2009, JEN and UED's budget application included forecast costs as set out in Tables 2.9 and 2.10.

Table 2.9: JEN initial budget application costs ($'000s, real 2008)

	2009	2010	2011	Total
Capex	54,607	31,940	34,044	120,592
Opex	3,921	8,738	13,464	26,123
Total	58,528	40,679	47,508	146,715

Source: JEN, *Advance Infrastructure Roll-out Budget Application from Jemena Energy Networks (VIC) Ltd*, 27 February 2009, budget templates (confidential).
Note: Totals may not add due to rounding.

69 ibid., p. 59.
70 ibid., p. 61.
71 ibid., p. 61.
72 ibid., p. 38.
73 JEN, *Advance Infrastructure Roll-out Budget Application from Jemena Energy Networks (VIC) Ltd*, 27 February 2009, budget templates (confidential); UED, *AMI Budget Application 2009-11 to the Australian Energy Regulator*, 27 February 2009, budget templates (confidential).

Table 2.10: UED initial budget application costs ($'000s, real 2008)

	2009	2010	2011	Total
Capex	65,403	51,373	69,780	186,556
Opex	7,253	20,766	19,980	47,999
Total	72,656	72,138	89,761	234,555

Source: UED, *AMI Budget Application 2009-11 to the Australian Energy Regulator*, 27 February 2009, budget templates (confidential).
Note: Totals may not add due to rounding.

As set out in section 1.3.1 above, the AER's assessment of the DNSPs' budget applications is split according to contract and non-contract costs. Tables 2.11 and 2.12 set out JEN's and UED's budget costs accordingly.

Table 2.11: AER cost breakdown for assessment – JEN ($'000s, real 2008)

Cost category for AER assessment	2009	2010	2011
Contract costs*	26,645	19,097	5,256
Non-contract costs	31,883	21,581	42,252

Source: JEN, *Advance Infrastructure Roll-out Budget Application from Jemena Energy Networks (VIC) Ltd*, 27 February 2009, budget templates (confidential).
* Includes contracts entered into prior to 27 February 2009, as required within clause 5C.11(a) of the revised Order.
Note: Totals may not add due to rounding.

Table 2.12: AER cost breakdown for assessment – UED ($'000s, real 2008)

Cost category for AER assessment	2009	2010	2011
Contract costs*	34,642	39,347	7,164
Non-contract costs	38,014	32,791	82,597

Source: UED, *AMI Budget Application 2009-11 to the Australian Energy Regulator*, 27 February 2009, budget templates (confidential).
* Includes contracts entered into prior to 27 February 2009, as required within clause 5C.11(a) of the revised Order.
Note: Totals may not add due to rounding.

2.2.2 AER considerations

2.2.2.1 Scope test

Proposed expenditure, activities being undertaken and within scope

The AER assessed the proposed AMI activities under each cost category defined within the combined budget application. In doing so the AER considered the degree to which JEN and UED made specific reference to schedule 2 of the revised Order in

justifying their submitted budgets. The AER considered whether each category of expenditure related to activities that were demonstrated by the DNSPs to be within scope. The combined budget application included some brief details as to how each expenditure category fits within scope, referring to specific clauses of Schedule 2 of the revised Order.[74]

Where the AER considered that a cost category defined within the budget application was not specifically demonstrated to fit within scope, the AER examined the relevant sections of the revised Order to determine whether the expenditure could be established as being outside scope.

In conducting this test, the AER paid close attention to the activities outside scope as defined in the revised Order. Where an activity was not specifically referred to in the lists of activities in and outside scope within schedule 2, the AER exercised its discretion in relating the costs to activities within and outside scope. The AER considered JEN's and UED's regulatory obligations relating to the AMI roll-out, and the DNSPs' reasons for including each cost category in their combined budget application.

The combined budget application contained detailed analysis and justification of costs which related their proposed costs to activities within scope, as defined in the revised Order. Accordingly, the AER did not need to seek additional information from JEN and UED from that submitted with their combined budget application in applying the scope test.

Documents reviewed by the AER in conducting the scope test included budget applications, business requirements, functional and technical specifications and tender and contract information.

Energeia reviewed the information provided by JEN and UED. Regarding the scope of activities, Energeia concluded that there did not appear to be a high risk of out of scope activities being undertaken by JEN and UED as part of their AMI roll-out. Energeia noted an independent technical report on JEN and UED's technology selection which concluded that the AMI and IT solutions are appropriate for the initial and future requirements of the Victorian mandate.[75]

The AER's assessment of the information provided in support of the DNSPs' combined budget application did not establish that their proposed activities were outside scope at the time of commitment and this determination. The AER considered that the combined budget application clearly demonstrated each AMI cost category fits within scope. Due to the very broad definition of 'AMI technology' within clause S2.1(b)(1)(i) of the revised Order, the AER considered that the activities proposed by JEN and UED are inside scope. The AER notes that a large number of the expenditure activities fall within clause 2.1(b)(1)(i).

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74 For example, 'Fit within the defined scope of the CROIC,' Alinta Asset Management, op. cit., p. 49.

75 Energeia, *Review of Victorian DNSP's Advanced Metering Infrastructure Budget Applications 2009–11*, July 2009, p. 30.

Table 2.12 summarises the AER's considerations on JEN and UED's budget applications under the scope test according to the major activities identified through the above process.

Table 2.13: Summary of AER considerations under the scope test – JEN and UED budget applications

Proposed expenditure category	Activities undertaken	AER considerations
Technology	Meters—procurement and installation	Within scope, as defined per: S2.1(a)(i) procurement…of accumulation and manually read interval metering installations to support the billing of network tariffs, including accumulation meters and manually read meters, measurement transformers and associated equipment S21(b)(1)(i) …provision of remotely read interval meters… 'AMI technology'… S21(c)(i) …procurement of AMI technology…
	Local area network procurement, installation and provision— for communication between the meters and data concentrators. Mesh radio based solution	Within scope, as defined per: S21(b)(1)(i) …provision of…communications equipment, communications services…'AMI technology' S21(c)(i) …procurement of AMI technology…
	Network management system— for back-office communications	Within scope, as defined per: S21(b)(1)(i) …provision of…network management systems…'AMI technology' S21(c)(i) …procurement of AMI technology…
	Wide area network— communication systems and infrastructure between the back-office and data concentrators. 3G technology to service meters outside of the mesh-radio coverage.	Within scope, as defined per: S21(b)(1)(i), …provision of…communications equipment, communications services…'AMI technology' S21(c)(i) …procurement of AMI technology…

IT systems and infrastructure	Meter data management—replacement solution required to fulfil obligations	Within scope, as defined per: S21(a)(ii)…provision of metering data services S21(b)(iii) business processes and information technology systems to manage the remotely read interval meter roll-out obligations…
	Workforce scheduling and mobility	Within scope, as defined per: S21(b)(1)(iii) IT systems to manage the remotely read interval meter roll-out obligations… S21(b)(2)(xi)(F) program management…of contractors and system integrators
	Asset management – a new system is needed to ensure new AMI meters and communications network assets are appropriately managed (old CISPlus+ system relies on manual work practices, not suitable for AMI-p. 52)	Within scope, as defined per: S21(b)(2)(vii). Maintenance of IT applications, systems and infrastructure…to operate AMI technology.
	Connection point management – System to manage connection point data and market generated service requests to meet obligations	Within scope, as defined per: S21(b)(2)(vii)(B) and (C) Provision of applications, systems and infrastructure to operate AMI technology and process data.
	Network revenue management—new system to accommodate significant increase in interval meters and billing volumes	Within scope, as defined per: S21(b)(2)(vii)(D) Provision of applications, systems and infrastructure to deliver all required regulated Services and achieve associated service obligations.
	Outage management system and Geographic information system	Not listed within the revised order. However, within scope as required within regulatory instrument: Electricity Distribution Code (ESCV, March 2008), clauses 5.2 and 6.3.

	Market interaction—upgraded capability to support existing and new market requirements and the significant increase in market transactions and volume of meter data	Within scope, as defined per: S21(c)(ii) provision of metering data services…data provision to NEMMCO and market participants
	Enterprise reporting—upgraded capability for the new applications to meet regulatory reporting requirements	Within scope, as defined per: S21(b)(2)(xi)(G) program governance and management including legal and regulatory processes.
Acceptance testing	Testing technology solutions, IT systems and processes against vendor contract obligations	Within scope, as defined per: S21(b)(2)(iv) piloting, trialling and testing of AMI Technology…
Installation Services	Meter installation	Within scope, as defined per: S21(b)(2)(i) installation of AMI technology..
	Data concentrator installation	Within scope, as defined per: S21(b)(2)(i) installation of AMI technology..
	Contact centre—Installation service vendor (SS) to run its own customer call centre to manage inbound and outbound calls and the interaction between retailers, consumers and asset owners.	Within scope, as defined per: S21(b)(2)(iii) customer service associated with the AMI technology
	Field audit/Quality assurance—site survey to confirm information	Within scope, as defined per: S21(b)(2)(i)(A) planning, designing and managing the roll-out…including site surveys and the management of difficult sites
	Mass Roll-out Plan—design for the installation of AMI	Within scope, as defined per: S21(b)(2)(i) provision and installation of AMI technology. This includes managing the roll-out of AMI Technology.

	Communications – field crew	Within scope, as defined per: S2.1(b)(2)(i) installation of AMI technology.
	Roll-out compensation and claims	Not listed within the revised Order. However, within scope as required within regulatory instrument: Electricity Industry Guideline 11 – Voltage variation compensation guideline
Program management	Costs incurred in managing risk in the overall AMI roll-out program.	Within scope, as defined per: S2.1(b)(2)(xi) program governance and management, including participation in State and national industry activities…planning, program and program management…
Business and industry transition	Current processes – decommissioning of existing meters	Within scope, as defined per: S2.1(a)(ii) provision of metering data services, including manual meter reading, meter data processing, meter data management…
	AMI process – new business applications to facilitate AMI including customer information systems and consumption data management.	Within scope, as defined per: S2.1(b)(1)(iii) business processes and IT systems to manage the remotely read interval meter roll-out obligations
	Transitional processes – costs associated with supporting the roll-out and operating both new and current processes in parallel	Within scope, as defined per: S2.1(b)(2)(ii) provision of data required by the NER to enable customer transition to the metering services referred to in paragraph two of the definition of regulated services
Operations	Non-AMI metering – manual meter reading, maintenance, purchases, installation and IT support	Within scope, as defined per: S2.1(a)(i) procurement, installation, operation and maintenance of accumulation and manually read interval metering installations to support the billing of network tariffs

	AMI operations – field and back-office transitional costs, IT support and maintenance, communications services.	Within scope, as defined per: S2.1(b)(2)(ix) provision and operation of transitional business processes to ensure that the processes and IT systems associated with Regulated services can be operated.

2.2.2.2 Prudent test

Contract costs- competitive tender test

JEN and UED submitted their budget applications on 27 February 2009, and accordingly contract costs for the purposes of the prudent test are those that are pursuant to contracts signed before that date.

Contract costs make up approximately 35 per cent of the combined budget application, split among 11 major contracts for various elements across the major cost categories outlined in the previous section. The largest contracts were for the provision of AMI meters, system integration services and software licensing costs.[76]

In considering whether JEN and UED's contract costs were let in accordance with a competitive tender process, the AER considered the contract costs against the key criteria set out in the framework and approach paper, as outlined in section 1.3.1.2.

In support of their combined budget application, JEN and UED provided the AER with copies of all AMI request for tender documentation, tender evaluation reports, vendor negotiation reports, end of evaluation stage reports and a tender probity audit report. At the AER's request, JEN also provided copies of relevant Board minutes and draft contract templates. This information was requested as foreshadowed in the AER's framework and approach to demonstrate that JEN's and UED's respective Boards considered the key tender documentation.

JEN and UED also provided an AMI Procurement Strategy, which outlined the general approach to contracting AMI services as implemented by AAM. This strategy sets out competitive tender processes which were followed in the establishment of contract costs for the AMI tender program, prior to 27 February 2009.[77] JEN and UED noted their intention to adhere to the AMI Procurement Strategy in finalising future contract costs for the initial budget period.[78]

Energeia reviewed the information provided by JEN and UED in the context of the competitive tender test. Energeia concluded that the AMI program tendering documentation indicates that AAM's general approach complies with the terms of the revised Order and framework and approach paper.[79]

The AER notes that Energeia also reviewed the contractual documentation between JEN, UED and AAM, and concluded that the associated program management fees paid to AAM do not meet the competitive tender test within the revised Order. However, the AER notes that these costs are classified as non-contract costs within JEN and UED's budget applications. Accordingly, the AER will assess these costs as non-contract cost, in accordance with the revised Order.

The AER reviewed the information and documentation provided by JEN and UED relating to its AMI tendered contract costs. This information demonstrated that AAM

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76 Alinta Asset Management, op. cit. (budget application) pp. 126-134; JEN and UED budget templates (confidential).

77 AAM, *SmartNet Program, AIMRO Procurement Strategy*, 3 March 2008.

78 Alinta Asset Management, op. cit., (budget application) p. 70.

79 Energeia, op. cit., p. 30.

has overseen reasonable and well executed request for tender and tender evaluation processes. The AER considers that the contracts which were tendered by AAM for the AMI roll-out were let in accordance with a competitive process, and therefore that costs associated with these contracts are prudent. The AER's assessment of the JEN and UED contracts under the competitive tender test using the criteria set out in the framework and approach paper is summarised in Table 2.14.

Table 2.14: Summary of AER considerations under competitive tender test- JEN and UED budget application

AER approach to competitive contract test, as set out in framework and approach	Considerations for JEN (equally applicable to UED)
that the initial request for tender documentation is made widely available to all parties that might be interested in tendering	Information provided in End of Evaluation stage reports.[80] RFT process conducted by AAM, RFT documentation distributed reasonably: RFT 3062 – closed tender process based on earlier RFP responses. RFT only issued to parties identified as suitable, based on advice from external advisors as to suitability of the parties.[81] Appears reasonable approach, based on earlier research. RFT 3070 (AMI technology) – Initial public request for information process was conducted to determine appropriate vendors. List of appropriate vendors was revised later when two suitable international vendors were identified through market intelligence. Process appears reasonable, open. RFT 3070 (Installation services) – Initial request for information process distributed in June 2007, identified appropriate vendors, who were then provided the RFT. Same process as above.
that, if adopted, any multi-stage tendering process is appropriate given the nature of the services sought and the number and prospects of potential bidders	Multi stage tendering process adopted: Initial RFI/RFP process conducted to narrow field of tenderers to then be subject to the RFT. Given the scope and quantity of tender documentation, and potential for international vendors, two-stage process appears reasonable.

[80] AAM, *RFT: 07/3062 - End of Evaluation stage report*, 2 May 2008 (revised 21 May 2008); AAM, *RFT:07/3070 AMI Technology- End of evaluation stage report*, 29 April 2008, AAM, AAM, *RFT:07/3070 Installation services- End of evaluation stage report*, 23 April 2008 (Revised 24 June 2008).

[81] AAM, *RFT: 07/3062 - End of Evaluation stage report*, 2 May 2008 (revised 21 May 2008), p. 7. EDS

that the issued tender documentation: *provides adequate information about the background to the AMI program and the DNSP* *details the tender process* *provides a detailed specification of the services sought* *adequately addresses matters such as risk sharing and contractual terms and conditions* *where appropriate, sets out the tender evaluation criteria*	RFT docs: Documents provide some reasonable background to the AMI project, likely to be adequate. Reasonable detail on the tender process Good level of detail on the services sought Risk sharing arrangements settled early, draft contracts supplied to potential vendors RFT does not set out tender evaluation criteria in significant detail, aside from stating that AAM will take into account the information provided by the respondent. RFT requirements were however detailed, and respondents would likely have had a good understanding of required information upon which they would be assessed.
that adequate time has been allowed for bid preparation and between tender stages, taking into account the scope and complexity of information sought from tenderers	RFT 07/3062 – RFT issued 11 December 2007, responses due 29 January 2008. RFT 07/3070 – RFT issued 21 December 2007, responses due by 4th or 11th February 2008. Timeframe for response was tight, however potential respondents were aware of RFT prior to its release and would likely have begun preparing responses earlier.
that the request for tender does not unreasonably impose conditions that prevent or discourage the submission of any tender. For example, these might include the payment of high fees for receiving tender documentation, technical requirements that are unreasonably high given the nature of the tender, unreasonable liability requirements, or	Cannot find evidence that this occurred – no high fees, no unreasonable technical requirements, liability requirements reasonable (as set out in draft contracts).

any other requirements that impose unduly high expenses on potential tenderers	
that detailed and appropriate tender evaluation criteria have been developed and applied. The design of the tender and the evaluation criteria need to ensure that, as far as possible, competing bids are easily comparable.	Tender evaluation process was reviewed by RSM Bird Cameron, findings were that the process was carried out appropriately. The evaluation criteria were well established (although not provided to vendors) and were reviewed by probity auditor.
that any 'bundling' of different services into a single contract is appropriate and that the advantages of doing so (economies of scale, reduced administration costs) outweigh the costs (less competition)	Procurement strategy was to bundle the required services into 7 packages, according to service type, which appears reasonable. Some vendors providing more than one package of services. All possible combinations of packages considered, process subject to a reasonable testing. Only combinations that were proposed by vendors were considered acceptable.
that appropriate tender briefings have been conducted and tenderers have been provided with the opportunity to clarify aspects of the tender	RFT 07/3062: RFT briefing held on 18 December 2007, all respondents to attend, questions from respondents allowed, and answers distributed among all respondents. RFT: 07/3070: RFT Briefing held on 11 December 2007, questions taken from respondents. Also, RFT Clarification meetings held in January 2007.
that the DNSP has taken appropriate steps to verify the information provided in tender responses, including referee interviews, field trials, and other checks	Procurement Quality Audit Plan provides checklist for evaluation process, including details for Tender Reference validation. Field trials of tender technologies detailed during AER site visit. Probity audit report indicates that evaluation was carried out in accordance with the pre-defined processes and procedures.
that any post-tender negotiations with the successful tenderer are consistent with the tender and do not call into question the	End of negotiation reports provided for both RFTs– outlining the negotiation process and outcomes. Negotiations with successful tenderers supported tender evaluation decisions. Negotiations reviewed by probity auditor.

original selection decision	
that the outcome of major tenders have been considered and approved by the DNSPs' boards of directors	Evidence of Board approval provided.
that for large contracts, a probity audit of the tendering process has been conducted.	Probity audit was conducted.

Non-contract costs - expenditure incurred test

In considering whether the non-contract costs proposed by JEN and UED are more likely than not to not be incurred, the AER analysed the information submitted by JEN and UED and the likely implications of the DNSPs not incurring budget costs.

Future tendered costs

JEN and UED identified costs in their combined budget application that they intend to subject to future competitive tender processes. AAM stated that these costs make up approximately 60 per cent of JEN and UED's combined budget application for 2009–11, and are spread across the seven major expenditure categories for the roll-out.[82] These "future tendered costs" are estimates of the expected outcomes of competitive tender processes, based on tender responses and commercial industry practice.[83] The AER considers that this is a reasonable method of estimating these costs which are yet to be incurred by JEN and UED. Furthermore, given the DNSPs' intentions for these costs to be tendered, as stated in the combined budget application, the AER considers it is likely that they will be incurred.

On the basis of the information provided and in the context of the revised Order's requirements, the AER did not establish that it was more likely than not that these future tendered costs would not be incurred.

General non-contract costs

In addition to future tendered costs, AAM submitted that approximately 9 per cent of JEN and UED's combined budget application, are either committed non-contract costs, or are costs that will not be subject to a future tender process.[84] Non-tendered costs include expenditure on:

- employees
- program resources, including specialists
- claims, complaints and Energy and Water Ombudsman (EWOV) processes
- accommodation
- program expenses including specialist advisors.[85]

JEN and UED submitted that these costs are needed to procure a resource or capability where specialist requirements (that are unavailable in a market) are required for the AMI program.[86]

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82 Alinta Asset Management, op. cit., (budget application) p. 22. The AER notes that there are some discrepancies between the combined initial AMI budget application, prepared by AAM, and the confidential budget templates submitted by JEN and UED. In making its determination on budget costs within each cost category, the AER has relied on the information submitted in the confidential budget templates. As a result, the estimates of future contract costs and general non-contract costs (derived from the AAM initial AMI budget application report), do not align with the total proposed costs.

83 ibid., p. 71.

84 ibid., p. 22.

85 ibid., p. 80.

Implications for not incurring costs

The AER considers the implications for JEN and UED of failing to incur these proposed non-contract costs may result in the DNSPs' not meeting their AMI roll-out obligations. The AER considers that this places an incentive on the DNSPs to ensure that all necessary components of the roll-out (including JEN and UED's non-tendered costs) are procured and implemented.

Self insurance costs—UED

Energeia considered the information provided by JEN and UED in light of the expenditure incurred test, and concluded that most non-contract cost forecasts were accurate and robust and therefore expected to be incurred. However, Energeia did identify some uncertainty as to whether some of UED's proposed self insurance and capital raising costs were expected to be incurred.[87]

UED submitted that costs for additional AMI related professional services were required above the costs incurred through the joint JEN and UED AMI roll-out program (managed by AAM). UED's proposed governance and insurance costs include legal and management fees, costs of preparing regulatory reports (including its budget and charges applications), independent advice fees and self insurance.[88] The AER considers that, aside from self insurance, these additional costs outside the joint AMI roll-out program are likely to be incurred.

The AER considered the self insurance costs proposed by UED, estimated as $200 000 per annum over the initial budget period, in light of the other contractual liability arrangements in the joint AMI program, and the self insurance costs already provided for in the ESCV's 2006 Electricity Distribution Price Review (EDPR). The AER notes that UED did not provide any information supporting its proposal for self-insurance costs, including events for which UED is seeking to be insured, nor how insurance rates were calculated.

As part of its consideration of JEN and UED's budget applications under the competitive tender test, the AER reviewed signed contracts for the joint AMI roll-out, including an overarching contract between JEN, UED and AAM. This contract requires AAM to maintain a number of forms of insurance, including workers compensation, professional indemnity, product liability and public liability insurance.[89] The AER notes that all other AMI contracts it reviewed contained similar vendor insurance requirements. The majority of submitted budget non-contract costs detailed within the combined JEN and UED budget application are expected to become contract costs during the initial budget period (i.e. future contract costs).

The AER notes that the EDPR made provision for the Victorian DNSPs to recover self insurance costs as part of their provision of general network services:

> The Commission has therefore decided to add into the base operating and maintenance expenditure an amount for uninsured losses (self insurance) for

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86 ibid., p. 79.
87 Energeia, op. cit., p. 31.
88 UED, *AMI Budget Application 2009-11 to the Australian Energy Regulator*, 27 February 2009, p. 19.
89 Blake Dawson, IT Systems Integration Agreement, signed 10 December 2008, p. 44.

> each of the distributors based on the difference in the movement in the relevant provision in 2004 and the average annual movement in the relevant provision between 2000 and 2004. This will ensure the distributors are provided with a reasonable level of funding for the frequent uninsured events that occur…[90]

Given the AMI contractual requirements for vendor insurance, the ESC's provision for self insurance in the EDPR for the current regulatory control period, lack of substantiation by UED, and Energeia's consideration that self insurance costs are unlikely to be incurred by UED, the AER has established that the proposed self insurance costs are unlikely to be incurred, and on this basis has removed these costs from UED's submitted budget.

Equity raising costs—UED

UED stated that costs associated with raising equity finance for the AMI roll-out will be incurred in the initial budget period. UED forecast that equity raising costs of $7.1 million would be incurred in 2010, and stated that as at 27 February 2009, no associated contracts had been competitively tendered.[91]

UED estimated equity raising costs of 4.56 per cent applied to a 'total equity facility amount of $155 million.'[92] The 'total equity facility amount' is equal to 83 per cent of UED's total proposed capex.

Clause 4.1(f)(vi) of the revised Order states that benchmarking of the value of debt as a proportion of the value of debt and equity is to be done consistently with the calculation of the WACC for the relevant year. As noted in section 3.2.5, the calculation of the WACC is based on an assumed debt equity ratio of 60:40.

UED's budget application proposed $247 000 of debt raising costs for the initial budget period, based on 60 per cent gearing, which the AER finds is consistent with the requirements of the revised Order.[93] That is, UED proposed debt raising costs for 60 per cent of its proposed capex for the initial budget period. UED's proposal for equity raising costs for 83 per cent of its total capex reflects an effective double recovery of capital raising costs for 43 per cent of its total proposed capex.

The AER has previously considered that the equity raising costs of a benchmark efficient network service provider could appropriately be determined with reference to the 'pecking order theory' of capital structure in determining appropriate equity raising costs.[94]

> According to the 2004 ACG report, firms finance subsequent capex in the least-cost manner. That is, financing is sourced from retained earnings when possible and that debt financing is preferred to equity financing (this relates to

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90 ESCV, *Electricity Distribution Price Review 2006–10—Final Decision Volume 1—Statement of Purpose and Reasons*, October 2006.

91 UED, op. cit., p. 20.

92 ibid., p. 20, footnote 10.

93 ibid., p. 15.

94 AER, *Draft decision—Powerlink Queensland Transmission Network Revenue Cap 2007–08 to 2011–12*, 8 December 2006, p. 111; AER, *Draft decision—TransGrid transmission determination 2009–10 to 2013–14,* 31 October 2008, p. 140.

> the 'pecking order theory' of capital structure).[95] External equity financing for subsequent capex should be considered only when a case is made that the retained earnings and additional borrowings are insufficient provided that the gearing ratio and other assumptions about financing decisions are consistent with regulatory benchmarks.[96]

The AER's draft decision for Powerlink stated:

> If Powerlink's retained earnings are not sufficient and external financing is required, the pecking order theory of capital structure states that firms choose debt over equity... Furthermore, the pecking order theory states that equity will be issued only when the debt capacity of a firm has been exhausted and financial distress threatens.[97]

In its 2006–10 EDPR, in response to CP's proposal for an external equity raising cost allowance for new capex, the ESCV did not provide the Victorian DNSPs with an equity raising cost allowance.[98] While it did not oppose the principle of providing an equity raising cost allowance for forecast capex under certain circumstances, the ESCV considered that given forecast capex requirements for CP, an entity financed according to benchmark assumptions would be unlikely to require external equity.[99]

In determining the portion of forecast capex that would require external equity financing under benchmark financing requirements (and consequently an equity raising cost allowance) in recent decisions, the AER has utilised a cash flow modelling approach. Where the forecast capex is not substantial in relation to the network service provider, this approach typically results in only a small portion or no portion of the forecast capex requiring external equity financing under benchmark financing arrangements.

While the AER does not have the necessary information to perform the same cash flow modelling analysis for UED, given the size of the proposed AMI capex for the initial budget period, the AER does not consider that a prudent operator with a proposed capex program in UED's circumstances would need to incur equity raising costs, under benchmark financing arrangements.

Clause 4.1(h) of the revised Order states that any equity raising costs shall be recovered as an operating and maintenance expense. The AER considers that while the revised Order states that AMI equity raising costs are to be subject to a cost pass through (as for the remainder of UED's proposed opex), given the close association of equity raising costs with the WACC, AER considers that these costs, if provided, should be consistent with the benchmark WACC assumptions prescribed in the revised Order.

UED's proposed equity raising cost of 4.56 per cent of total equity raised is far above the benchmark rate used in the recent AER final determinations for TransGrid and the

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95 Allen Consulting Group, *Debt and equity raising transaction costs: final report to the ACCC*, December 2004, pp. ix–xii.
96 AER, op. cit (Draft TransGrid transmission determination), p. 140.
97 AER, op. cit., (Draft Powerlink Transmission Revenue Cap), p. 111.
98 ESCV, op. cit., p. 383.
99 ibid., p. 316.

NSW DNSPs.[100] UED did not provide any information regarding its calculation of an equity raising cost rate. The AER's recent final decisions for TransGrid and the NSW DNSPs for the 2009–14 regulatory control period determined that an allowance of 2.75 per cent was an appropriate rate for external equity raising costs.[101] This rate was calculated based on a methodology developed by Allen Consulting Group and the recommendations of the AER's consultant, Associate Professor Handley.[102] The AER considers that, if equity raising costs were to be approved by the AER, this rate would also be appropriate for UED's AMI equity raising requirements for the initial budget period.

The AER also notes that JEN, CP, PC and SPA have not proposed equity raising cost allowances as part of their budget applications.

The AER considers it is unlikely that UED, under benchmark financing arrangements consistent with the prescribed WACC parameters, will incur equity raising costs for the initial budget period. The AER considers UED will be able to fund its proposed capex program using less expensive capital raising methods.

On this basis, the AER has established that the equity raising costs proposed by UED are unlikely to be incurred under benchmark financing arrangements. Accordingly, the AER has removed $7.1 million of these costs from UED's submitted budget.

Conclusion - expenditure incurred test

The AER established that it is more likely than not that the non-contract costs (both future contract costs and true non-contract costs) associated with self insurance and equity raising proposed in UED's budget application will not be incurred.

Non-contract costs - commercial standard test

As noted in section 1.3.1.4, the revised Order requires that, in conducting the commercial standard test, the AER shall take into account and give fundamental weight to the circumstances of the DNSP, or other person incurring or managing the expenditure at the time the commitment was made to incur or manage the expenditure or expenditure excess (as applicable).

As part of their combined budget application, JEN and UED submitted a report by KEMA Inc (KEMA) who undertook an independent technical assessment and cost validation due diligence report. The report considers that JEN's and UED's combined AMI roll-out program costs were efficient and appropriate for the program and that risks have been appropriately considered. The report stated that the AMI Program Management Office had developed a strong, well organised and planned program.

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100 AER, *Final decision: TransGrid transmission determination 2009–14 to 2013–14*, 28 April 2009, Appendix E, p. 236–237.

101 ibid., p. 237; AER, *Final decision: NSW distribution determination 2009–14 to 2013–14*, 28 April 2009 p. 194.

102 Allen Consulting Group, op. cit., p. 65; Handley, J. C., *A note on the costs of raising debt and equity capital*, 12 April 2009, p. 26.

The report made a number of recommendations for further risk mitigation, which have been since implemented by AAM and the DNSPs.[103]

While the KEMA report was completed in November 2008, prior to the revised Order, it makes general assessments of JEN and UED's AMI roll-out program as compared to reasonable commercial business standards. KEMA assessed JEN and UED's AMI roll-out program against similar standards and parameters as those set out in the revised Order and framework and approach paper relating to the commercial standard test. For these reasons, the AER considers that KEMA's findings are relevant for the purposes of its assessment under the commercial standard test.

The AER considers this report supports JEN and UED statements that their combined AMI roll-out program has been subject to a high level of governance, in line with the commercial standard that a reasonable business would employ.

As part of their combined budget application, the DNSPs also provided an Advanced Interval Metering Roll-out obligations map. While this was published prior to the revised Order, it clearly sets out each category of AMI costs according to regulatory obligations, drivers and risks. This document demonstrates a detailed level of planning for the overall AMI program, consistent with that of a reasonable commercial standard.[104]

The AER's consultant, Energeia, also reviewed the documentation provided by JEN and UED in relation to the commercial standard test. Energeia noted that an independent technical expert found AMI and IT solutions to be appropriate for the Victorian mandate, and found that there was not a high risk of out of scope costs within JEN's and UED's budget applications. However, Energeia also considered that further information on UED's equity raising costs and IT replacement costs may have been necessary to establish prudence.

As detailed above, the AER has established under the expenditure incurred test that UED's proposed equity raising costs are unlikely to be incurred, and has accordingly removed these costs from UED's submitted budget. The AER considered that the IT replacement cost issues raised by Energeia were relatively minor, and given the quality of supporting documentation provided by JEN and UED to assist the AER's review, it was able to establish that these costs had been appropriately justified as meeting a reasonable commercial standard.

The following sections discuss the AER's considerations under the commercial standard test to major cost types.

Future contract costs

JEN and UED's combined budget application stated that of the total non-contract costs as at 27 February 2009, the majority (approximately 90 per cent) was expected to be tendered according to the AMI Procurement Strategy by the end of the initial

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[103] KEMA, *The SmartNet Program – Victorian Advanced Meter Infrastructure Roll-out for United Energy Distribution and Jemena Electricity Networks - Technical Assessment and Cost Validation Due Diligence Report*, November 2008.

[104] JEN and UED, *AIMRO obligations map*, April 2008.

budget period.[105] These costs were estimated based on request for tender responses and negotiations with vendors which the AER considers appropriate in the circumstances of the DNSPs. The AER notes that CP, PC and SPA have also indicated their intentions to competitively tender a similar proportion of non-contract costs during the initial budget period.

General non-contract costs

The remaining non-contract AMI costs (approximately 10 per cent of non-contract costs) has not and will not be subject to contractual arrangements. As noted above these costs are for: employees; program resources, including specialists; claims, complaints and EWOV processes; accommodation; and program expenses including specialist advisors.[106]

Non tendered contract costs will be procured according to the following recruitment procedure:

- recruitment will only commence once the hiring manager has received approval from the Program Director
- each vacant position must have a minimum of three candidates interviewed for the role sourced through more than two vendors
- once a resource has been selected for the role, the hiring manager must demonstrate that they have attempted to negotiate an appropriate rate
- at least two reference checks must be completed for the preferred candidate and the referrals must both be positive
- the appropriate contract approval forms must be prepared by the hiring manager for approval by the Program Director and the AMI business Owner
- the Program Director must approve the hiring of each resource before the individual is appointed to a team.[107]

These general non-contract costs were estimated on the basis of current standing contracts, negotiations and market analysis. KEMA verified these costs and found them consistent with industry standards.[108]

In considering JEN and UED's submitted budget non-contract cost expenditure under the commercial standard test, the AER considered non-contract costs (including future contract costs) within each cost category identified by AAM.

The following sections discuss the estimated amount of non-contract costs within each expenditure category, the reasons the costs need to be incurred to roll-out AMI,

105 Alinta Asset Management, op. cit., (budget application) p. 22.
106 ibid., p. 80.
107 ibid., pp. 81-82.
108 KEMA, op. cit.

how costs were estimated and the AER's conclusions on each cost category under the commercial standard test.[109]

AMI technology

AAM stated that as at 27 February 2009, 64 per cent ($72.9 million) of JEN's and UED's meters, communications and WAN modems had not yet been competitively tendered. These costs are for the roll-out of AMI technology in 2011, and AAM indicated that the total of these costs were expected to be tendered by 31 December 2011.[110]

AMI technology activities include the procurement of:

- AMI meters—capable of advanced functions such as remote interval data reading, remote connect and disconnect, advanced load control and an interface to a home area network, as specified by DPI in the AMI minimum specifications and service level documents[111]

- local area network and network management system—for communication between the meters and data concentrators and repeaters

- wide area network—including the communications systems and infrastructure between the network management system in the back-office, and the data concentrators and point-to-point meters in the field.[112]

AAM stated that the approach to evaluating AMI technology options reflected the need to minimise exposure risks associated with the chosen technology path, by:

- designing a solution that is supported by multiple vendors for each component, and

- providing an escalating deployment program, where technology is tested and validated in increasing scales before the full-scale deployment commences.[113]

AAM noted that the communications technology landscape is rapidly changing, and that there are technologies on the horizon which currently do not provide an acceptable balance of cost and risk, but which may become viable during the four year roll-out.[114]

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109 In the following sections, the AER quotes the costs stated in the combined initial AMI budget application, as prepared by AAM. These costs do not align with the submitted budget templates, and are taken as approximate estimations of non-contract costs under each cost category. The AER has relied on the confidential budget templates in making its draft determination on the total opex and capex for JEN and UED's initial AMI budget period, and has referred to the AAM quoted costs as an estimation of costs under each category.

110 Alinta Asset Management, op. cit., (budget application) p. 83.

111 DPI, op. cit., (Minimum AMI functionality Specification) and DPI, op. cit., (Minimum Service Levels Specification).

112 Alinta Asset Management, op. cit (budget application), pp. 47-48.

113 ibid., p. 84.

114 ibid.

It also noted the currently limited number of AMI technology vendors which it observed contributed to a lack of competition in the market.[115] Accordingly, AAM elected to delay contracting for AMI technology until the final year of the initial budget period, to lower the risks of redundant technology and pricing risks associated with the emerging market for meters. The AER considers this is consistent with standard commercial practice.

The forecast costs for future tendered AMI technology activities were based on the outcomes of request for tender processes, which were appropriately evaluated and negotiated according to the AMI Procurement, evaluation and negotiation strategies. The AER considers that this is consistent with standard commercial practice, and that AAM appropriately considered AMI program delivery risks, market conditions and state of technology in forecasting its AMI technology non-contract costs for the initial budget period.

IT systems and infrastructure

AAM stated that 77 per cent ($64.7 million) of IT systems and infrastructure expenditure had not yet been competitively tendered, but would be by 31 December 2011. It stated that 1 per cent ($1.1 million) of IT systems and infrastructure costs was expected to be sourced through non-tendered contracts.[116]

IT systems and infrastructure activities include the procurement of information systems and automated data exchangers supporting the AMI technology assets. It involves the upgrade of the majority of systems applications and infrastructure involved in the management, processing and billing of meter data.[117] AAM submitted that these activities are required as JEN's and UED's existing IT systems are unable to meet the DNSPs' AMI regulatory obligations. For each IT system or infrastructure item AAM submitted reasoning behind the DNSPs' decisions to upgrade or replace existing infrastructure.[118]

AAM indicated that all major IT cost elements had been market tested via a formal request for tender, aside from where there was potential for an incumbent supplier or in-house provision of a service.[119] The evaluation and selection of vendors was carried out in accordance with the AMI Procurement Strategy, which the AER considers complies with reasonable commercial standards. AAM provided evidence of risk identification and mitigation strategies for IT system costs.[120] The majority of the IT costs were estimated based on the market responses to request for tender processes and negotiations, which the AER also considers is consistent with commercial standards. The AER also considers that AAM and the DNSPs appropriately accounted for risk and the nature of the roll-out obligations in forecasting IT systems and infrastructure non-contract costs. The AER considers that the proposed IT systems and infrastructure costs do not reflect a substantial departure from the commercial standard a reasonable business would apply in these circumstances.

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115 ibid., p. 90.
116 ibid., p. 91.
117 ibid., p. 50.
118 ibid., pp. 52-54.
119 ibid., p. 94.
120 ibid., pp. 96-98.

Acceptance testing

Acceptance testing is classified as capex under the DNSPs' combined budget application. AAM stated that of the total acceptance testing costs allocated in the budget application, 92 per cent ($7.1 million) are classified as non-contract costs as at 27 February 2009. Of these costs, $5.6 million is expected to be tendered by the end of 2011 (future contract costs), while the remaining acceptance testing costs will remain non-contract costs or non-tendered contract costs.[121]

Acceptance testing activities aim to confirm the capacity and capability of the selected AMI technologies, IT systems and infrastructure, installation services and business processes, in order to successfully enable the interval meter data to be managed and to integrate AMI into the existing business processes.[122] The combined budget application stated that acceptance testing is necessary to ensure the performance of the AMI solution is consistent with the DNSPs' metering and regulatory obligations and requirements. In particular, it stated that acceptance testing of the scale proposed is necessary to obtain accreditation and re-accreditation by NEMMCO as a meter data provider and meter data agent.[123] AAM indicated that a risk analysis relevant to the impact of testing was carried out, noting that acceptance testing is part of a key risk mitigation strategy for the overall AMI program.[124]

AAM submitted that all future tendered contract costs ($5.6 million) will be procured in accordance with the AMI Procurement Strategy, while non-contract costs have been or will be procured where specialist requirements unavailable in a market are needed, or where they are being incurred as part of the normal policy and practices of the DNSPs.[125] Acceptance testing costs were estimated based on the outcomes of initial AMI request for tender processes, existing contracts and market analysis.

The AER considers the decision to incur acceptance testing costs is a reasonable commercial decision, given the benefits testing will provide to the AMI roll-out and the risks faced by the DNSPs' of not meeting their obligations under the revised Order. The AER considers the acceptance testing cost estimates were generated via reasonable commercial practices. The AER considers that AAM has reasonably taken into account the state of the AMI technology and DNSPs' regulatory requirements, risks and market conditions in forecasting acceptance testing costs for the initial budget period.

Installation services

JEN's and UED's AMI installation services costs are classified as capex and will all be subject to competitive tendering processes during the initial budget period. AAM stated that 45 per cent ($17.9 million) of costs have been tendered to date, and the remaining $22.1 million will be tendered according to the AMI Procurement Strategy.[126]

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121 ibid., p. 99.
122 ibid., p. 57.
123 ibid., p. 58.
124 ibid., p. 102.
125 ibid., p. 79.
126 ibid., pp. 103-104.

Installation services activities involve managing and facilitating the AMI roll-out. For JEN and UED, this involves the installation of around 982 600 meters and 280 data concentrators, as well as a significant amount of communications infrastructure.[127]

AAM conducted comprehensive analysis of the relevant market, risks and AMI installation requirements, and found that a single installation service vendor should be responsible for this component of the roll-out program.[128] The AER considers that installation services costs are reasonably required to enable the DNSPs to meet their AMI roll-out obligations, and the current non-contract costs have been estimated using reasonable commercial standards. Non-contract costs associated with installation services will be subject to the same competitive tendering process as installation services contract costs, and the AER considers that in incurring these costs does not involve a substantial departure from the commercial standard that a reasonable business would exercise in the circumstances of JEN and UED.

Program management

AAM stated that of the committed costs for JEN's and UED's AMI program management ($9.7 million), 38 per cent ($3.7 million) are non-contract costs. Of the future program management costs ($24.2 million, currently non-contract costs), AAM expects 51 per cent ($12.3 million) will be competitively tendered according to the AMI Procurement Strategy, while the remaining costs will be sourced through non-tendered contracts.[129]

AAM stated that the program management costs are necessary to manage the AMI program risks and ensure the performance of the roll-out. Program management activities include the management, monitoring and reporting of program performance to ensure the program operates efficiently.[130] Non-contract program management costs have been estimated based on existing contracts with current JEN and UED employees.

In considering the nature of the AMI roll-out and the DNSPs' regulatory obligations, the AER considers that the program management expenses proposed to be incurred do not involve a substantial departure from the commercial standard a reasonable business would exercise in these circumstances. The AER also considers it reasonable that AAM has sought to procure AMI program management services from existing JEN and UED employees and contractors, given the value internal resources will bring to the management of the AMI roll-out.

As noted in section 2.2.2.2, the AER identified that JEN and UED pay management fees to AAM, which is a related party.[131] The AER notes that the DNSPs' commissioned an independent review of the AAM contracts, which found that the fees paid to AAM for AMI program management activities were reasonable and justified.[132] The AER found this independent review to be reasonable. However, the

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127 ibid., p. 59.
128 ibid., pp. 104-105.
129 ibid., p. 109.
130 ibid., p. 61.
131 JEN, *Advance Infrastructure Roll-out Budget Application from Jemena Energy Networks (VIC) Ltd*, 27 February 2009, p. 17.
132 KEMA, op. cit., p. 12-1.

AER notes that the revised Order does not permit it to undertake an efficient cost review of AMI related party margins.

The AER will conduct an investigation into related party contracts of the DNSPs' more generally as part of its Victorian distribution review for 2011–15 under the National Electricity Rules. The AER's findings as part of this distribution review may inform its assessment of related party management fees within the DNSPs' second AMI budget period applications for 2012–15.

Business and industry transition

Expenditure within the business and industry transition category of JEN's and UED's submitted budgets is capital expenditure (all operating expenditure is included in the operational costs category). AAM stated that to date, 21 per cent ($2.2 million) of this expenditure has been competitively tendered, while an additional 65 per cent ($6.9 million) is expected to be tendered according to the AMI Procurement Strategy by the end of 2011.[133] AAM stated that the remaining non-contract costs ($1.4 million) have been or will be either internally provided, provided by an identified vendor with required specialist skills and procured in line with JEN's and UED's existing resourcing procedures.[134]

Business and industry transition expenditure relates to the decommissioning of existing meters, procurement and updating of business processes to facilitate the AMI roll-out and processes to support the current and new systems in parallel, ensuring a smooth transition to AMI.[135] AAM has identified that JEN and UED need to replace field based technologies to allow interval data collection, as the DNSPs are currently unable to communicate with small customers' (less than 160 MWh) meters.[136]

AAM engaged an independent consultant to provide assessments of JEN's and UED's need to replace existing customer information system (CIS) and consumption data management (CDM) applications to facilitate AMI. The consultant found that due to a current lack of capacity within their existing systems, it is necessary for JEN and UED to replace the CIS and CDM systems to support the greater volume of meter data.[137] The replacement of these systems also requires a number of new applications, including meter data management, connection point management and network revenue management systems.[138]

Industry transition costs include ensuring the DNSPs have representation at industry working groups, committees and decision making forums, keeping informed of risks and issues stemming from the wider AMI industry so that early identification of problems may ensure mitigation strategies are developed.[139]

Business and industry transitional costs have been estimated based on existing employee contracts and the outcomes of initial AMI request for tender processes. The AER considers that given the pioneering nature of the Victorian AMI roll-out,

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133 Alinta Asset Management, op. cit., p. 111.
134 ibid., p. 79.
135 ibid., p. 112.
136 ibid., p. 62.
137 Accenture, *CIS Replacement Option Review*, 25 February 2009, p. 5.
138 Alinta Asset Management, op. cit., p. 62.
139 ibid., p. 63.

allowing for these transitional costs is reasonable, and reflects a commercial standard that a business would exercise.

AAM has followed a reasonable process in determining which business applications JEN and UED will need to replace or upgrade to facilitate the AMI roll-out. AAM has thoroughly considered the technology requirements for AMI, program risks and the DNSPs' regulatory obligations. Accordingly, the AER has not established that incurring the non-contract costs associated with business and industry transition involves a substantial departure from the commercial standard that a reasonable business would apply in the circumstances.

Operations

The operations category of JEN and UED's combined budget application comprises of ongoing, non-AMI operations costs, as well as some AMI IT support, maintenance and communications services. AAM stated that, as at 27 February 2009, 38 per cent ($23.6 million) of all AMI operations costs had been tendered according to the AMI Procurement Strategy. AAM indicated that an additional 42 per cent ($26.1 million) will be tendered according to this process by the end of 2011, while the remaining 19 per cent ($11.9 million) will be incurred through existing contracts, employees and contracts for specialists for which there is no market.[140]

Non-AMI operations include those associated with the DNSPs' current responsibilities for the provision, operation and maintenance of accumulation meters, which will continue during the AMI roll-out. Responsibilities include manual meter reading, meter maintenance and meter purchases to meet network and retailer requirements for new connections, faults, obsolete equipment, additions and alterations. It also includes meter installation services and IT support. These activities will be conducted by long-standing JEN and UED employees and contractors. [141]

AMI IT support, maintenance and communications within the operations cost category includes transitioning of field and back office functions of prescribed metering services to AMI, IT support and maintenance for the new upgraded IT systems and communications services.[142]

Operations costs were forecast by AAM using a cost impact analysis, accounting for key industry dates, roll-out profile, IT releases, avoided costs and efficiency improvements. The submitted budgets provide for an increase in operational costs during the AMI roll-out, and a slight increase in operational costs following its completion.[143] Considering the nature of the AMI roll-out and the regulatory obligations under which the DNSPs operate, the AER considers that the operational costs proposed within JEN's and UED's submitted budgets reflect a commercial standard that a reasonable business would exercise in their circumstances.

2.2.3 AER conclusions

For the reasons set out in section 2.1.2.1 and 2.1.2.2, in relation to the expenditure proposed in JEN's and UED's submitted budgets, the AER has:

[140] ibid., p. 118, 79.
[141] ibid., pp. 64-65, 119.
[142] ibid., pp. 66-67.
[143] ibid., pp. 118-119.

- not established that the expenditure is for activities outside scope at the time of commitment to that expenditure and at the time of this draft determination
- not established that the contract costs (as defined in the revised Order and set out in JEN and UED's combined budget application) are associated with contracts that were not let in accordance with competitive tender processes
- established that it is more likely than not that the costs proposed by UED for self insurance and equity raising will not be incurred
- not established that it was more likely than not that JEN's and UED's submitted budget non-contract costs, aside from UED's proposed self insurance and equity raising costs, will not be incurred
- not established that the DNSPs' submitted budget non-contract costs involve a substantial departure from the commercial standard that a reasonable business would exercise in the circumstances.

2.2.4 Draft determination

The AER's draft determination accepts JEN's submitted budget.

The AER's draft determination rejects UED's submitted budget. The new submitted budget the AER has determined to approve for UED is set out in Table 2.15.

Table 2.15: AER draft determination- new submitted budget for UED ($'000s, real 2008)

	2009	2010	2011
UED proposed capex	65,403	51,373	69,780
UED proposed opex	7,253	20,766	19,980
UED proposed self insurance costs	-	200	200
UED proposed equity raising costs	-	7,068	-
AER draft determination – UED capex	65,403	51,373	69,780
AER draft determination – UED opex	7,253	13,498	19,780

Source: UED, budget templates (confidential), and AER analysis.
Note: Totals may not add due to rounding.

2.3 SP AusNet

2.3.1 Initial AMI budget application 2009–11

2.3.1.1 Roll-out program

SP AusNet (SPA) defined its AMI roll-out program according to six categories of work:

1. Metering—including the procurement, installation, salvage, operation and maintenance of metering assets.[144]
2. Meter reading and meter data services—back office processes for customer installations, route management, scheduling, uploading and downloading of reading information to reading devices, reading meters, meter data processing and management, and transfer of meter data to retailers and market systems.[145]
3. Communications—development, implementation, management and ongoing operation and support of communication facilities between individual customer installations and SPA's network infrastructure, and information and control services.[146]
4. Information and control services—network management system to connect the overall metering information systems; business systems including asset management, workforce scheduling and mobility, connection point management, outage management, network management, meter data management, performance and regulatory reporting, revenue management, geospatial information, program support and IT infrastructure.[147]
5. Customer services—development of a customer communications and service strategy; providing details on delivery, technology, training and resourcing to all stakeholders; resourcing and training requirements for customer services teams; upgrading of customer service technology.[148]
6. Project management and training—project administration, coordination, financial management and reporting requirements, resourcing, training and change management.[149]

Program costs

SPA proposed total costs for the AMI program over 2009–11 of $313 million, of which $226.7 is capex, and $86.4 million is opex.[150]

As at 27 February 2009, SPA's submitted budget included forecast costs as set out in Table 2.16.

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144 SPA, *Advanced Metering Infrastructure Initial Budget Application,* 27 February 2009 (revised 3 March 2009), p. 24.
145 ibid., pp. 25-26.
146 ibid., pp. 26-28.
147 ibid., pp. 28-29, 33.
148 ibid., p. 30.
149 ibid., p. 30.
150 ibid., budget templates (confidential).

Table 2.16: SPA Initial AMI budget application costs ($'000s, real 2008)

	2009	2010	2011	Total
Capex	68,472	51,837	105,120	225,429
Opex	29,874	28,997	27,501	86,372
Total	98,346	80,834	132,621	311,801

Source: SPA, *Advanced Metering Infrastructure Initial Budget Application,* 27 February 2009 (revised 3 March 2009), budget templates (confidential).
Note: Totals may not add due to rounding.

As set out in section 1.3.1 above, the AER's assessment of the DNSPs' budget applications is split according to contract and non-contract costs. Table 2.17 sets out SPA's submitted budget costs accordingly.

Table 2.17: AER cost breakdown for assessment—SPA ($'000s, real 2008)

Cost category for AER assessment	2009	2010	2011
Contract costs*	11,656	3,624	1,857
Non-contract costs	86,690	77,210	130,764

Source: SPA, *Advanced Metering Infrastructure Initial Budget Application,* 27 February 2009 (revised 3 March 2009), budget template (confidential)
* Includes contracts entered into prior to 27 February 2009, as required within clause 5C.11(a) of the revised Order.
Note: Totals may not add due to rounding.

2.3.2 AER considerations

2.3.2.1 Scope test

Proposed expenditure, activities being undertaken and scope

The AER assessed SPA's proposed AMI activities under each cost category defined within its budget application. The AER considered the degree to which SPA made specific reference to Schedule 2 of the revised Order in its budget application, and in its justification of proposed program costs. In its budget application, SPA provided a scope relationship map which aligned each cost element to the corresponding clause within schedule 2 of the revised Order.[151]

In assessing the proposed activities under the scope test, where the AER considered that a cost category defined within the budget application was not specifically demonstrated to fit within scope, the AER examined the relevant sections of the revised Order to determine whether the activity could be established as outside scope.

In conducting this test, the AER paid close attention to the activities outside scope as defined in the revised Order. Where an activity was not specifically referred to in the lists of activities in and outside scope within schedule 2, the AER exercised its

[151] ibid., pp. 31-36.

discretion in relating the costs to activities within and outside scope. The AER considered SPA's regulatory obligations relating to the AMI roll-out and its reasons for including each cost category in the budget application.

A key area where the AER had concerns was SPA's WiMAX solution, which is discussed in the next section. Other areas of concern which were identified by the AER's consultant are discussed in the following section.

WiMAX communications solution

In analysing the Victorian DNSPs' budget applications, the AER found that SPA's elected communications solution, WiMAX, involved a higher cost per customer than the AMI communications solutions selected by the other DNSPs (mesh radio), and accordingly considered that it warranted commensurate analysis. Specifically, on a per customer basis, SPA's proposed communications technology is more than twice the cost of the nearest other DNSP's communications technology.[152]

The AER was concerned that WiMAX's significant bandwidth requirements may have indicated that the communications technology would provide communications services beyond the AMI minimum functionality specifications and accordingly may be considered outside scope under clause S2.8(iv) of the revised Order.

The AER notes that the AMI specification documents clearly set minimum targets for the AMI roll-out and do not preclude SPA from submitting cost recovery for AMI activities and costs that are in excess of these minimum specifications. However, the AER's framework and approach paper stated that when proposing to invest in technology above the AMI minimum specifications, DNSPs would be required to demonstrate that there are resulting net benefits.[153]

Accordingly, the AER sought additional information from SPA to justify its proposed WiMAX communications solution. In response, the AER received a number of internal business case and strategy documents outlining its consideration of WiMAX costs and benefits with regard to the scope of activities outlined in the revised Order and prior AMI regulatory requirements.

In analysing SPA's proposed WiMAX communications solution under the scope test, the AER found that SPA's confidential internal business cases, in justification of selecting WiMAX over mesh radio and 3G communications solutions, gave significant weight to the potential for unregulated, including non-electricity related, business opportunities that WiMAX offers over and above the other communications solutions. Such unregulated business opportunities are associated with the significant level of licensed bandwidth within which WiMAX operates, and may include the provision of internet services, digital content broadcasting including radio and interactive advertising, as well as services related to 'smart grid' technology.

The AER found that in considering the potential AMI communications solutions, SPA had considered the unregulated services potential in weighing up costs and benefits of each option. In particular, the AER found evidence that:

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[152] Energeia, *Review of Victorian DNSP's Advanced Metering Infrastructure Budget Applications 2009–11*, July 2009, p, 24.

[153] AER, *Framework and Approach Paper—Advanced Metering Infrastructure review 2009–11*, January 2009, p. 29.

> 'the underlying premise in which (the) decision was made (to endorse WiMAX using a leased 3G service as infill technology) was due to the solution fit to the broader business strategy within regulated and unregulated business domains.'[154]

The AER considered this against clause S2.8(iv) of the revised Order, which states that activities outside scope include using AMI technology to provide communications services beyond those in the most up to date DPI minimum Specifications.

The AER requested further information from SPA to support statements within its budget application that its proposed WiMAX communications solution was not outside scope, as defined in the revised Order. SPA stated that in evaluating its communications options, it recognised the future potential of WiMAX but that it has not developed any plans to use the AMI WiMAX infrastructure for unregulated services. SPA stressed that the WiMAX network had been designed to provide services within scope, as defined in the revised Order.[155]

SPA reiterated its rationale for selecting the WiMAX communications solution:

- AMI service level compliance—WiMAX ensures SPA will meet the minimum service levels established by the DPI specification with the greatest level of reliability (as compared to other communications solutions)

- Spectrum use—WiMAX includes a flexible and dedicated spectrum channel for use with AMI, which allows SPA to commit to AMI Service Level Specifications over a 7-15 year investment horizon. Mesh radio solutions use unlicensed spectrum.

- Solution security—the WiMAX solution provides strong 'last mile' and backhaul security that complies with global security standards, as compared to mesh radio solutions which are proprietary and provide limited visibility into their application of security mechanisms

- Standards and vendor choice—the WiMAX solution does not lock SPA into a particular meter or communications vendor for a 7-15 year time horizon, unlike mesh radio solutions which have limited communications vendor choices

- Build cost certainty—WiMAX utilises well established radio frequency communications planning tools, detailed maps and databases to plan and predict solution coverage, ensuring higher budget certainty than mesh which adopts an 'experienced' based approach based on findings from the United States

- Vendor support—WiMAX is supported by many vendors with experience in the design and deployment of wireless networks, while mesh radio is designed and supported by niche providers of a limited scale, as compared to the Victorian AMI roll-out

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154 SP AusNet, *AMI Communications Program-Mesh radio design review-March 09*, 7 January 2009, p. 11.

155 SPA, *AMI Initial Budget Application 2009-11 SP AusNet response to AER questions of 20 June 2009 on WiMAX*, 3 July 2009.

- Meter adoption—WiMAX is now being promoted as a solution by 3 key meter vendors, meaning communications parts are available through numerous providers, promoting competition.[156]

SPA also indicated that over the long term, it expects the costs associated with WiMAX to be comparable with those of mesh radio and other communications solutions. SPA indicated that a mesh radio communications solution would require thousands of concentrators and repeaters for every 5000 meters, in turn requiring greater on-going support and operating expenditure once AMI is rolled out, as compared to a WiMAX communications solution.[157]

The AER's consultant, Energeia, reviewed the additional information provided by SPA in support of its WiMAX communications solution. Energeia concluded that:

- SPA's communications technology options analysis was based on the criteria within the revised Order and activities that do not appear to be out of scope

- while some of the technical criteria were above the minimum specifications defined by DPI, these were largely required to support the overall AMI system performance levels, and to lower the related costs

- a wide range of alternative AMI communications solutions was considered by SPA

- WiMAX was not over specified to support activities outside scope, and bandwidth requirements were necessary to allow the technology to fit to the AMI communications profile

- the total cost of ownership of WiMAX is not significantly more than a mesh radio solution, based on the findings of independent experts

- the decision to select WiMAX was appropriately considered and approved.[158]

Following advice from Energeia, in particular relating to bandwidth requirements, and further analysis of the documentation provided by SPA, the AER considered that it was unable to establish that SPA had used AMI technology to provide additional communications services beyond the scope of activities and specifications under the revised Order.

The AER considers that SPA has undertaken a thorough options analysis for its AMI communications solution, which was optimised to meet the minimum specifications. The AER considers that it is incidental that SPA's choice of communications technology has resulted in a potential to deliver activities which are outside scope, and notes that implementing such activities will require significant further investment by SPA.

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156 ibid., p.3.

157 SPA, *SP AusNet Advanced Metering Infrastructure Program—Presentation to the AER*, 29 June 2009, slide 9.

158 Energeia, op. cit., pp. 35.

Two element meters

The AER reviewed SPA's proposal to seek cost recovery for two–element meters concurrently with its consideration of PC's similar proposal (see section 2.1.2.1). As noted in relation to PC, the AER considers that two–element meters may be considered outside scope under clause S2.7(iii) of the revised Order, as the AMI minimum functionality specification does not include two–element meters. The AER's framework and approach paper stated that when proposing to invest in AMI infrastructure above the AMI minimum specifications, DNSPs would be required to demonstrate in their budget applications that there are resulting net benefits to customers and market participants.

SPA proposed to install 72,363 two–element meters across its network in 2010 and 2011, at a total cost of $21 million. During its review, the AER requested SPA provide a cost-benefit analysis of the decision to install two–element meters in place of single element meters.

In its response, SPA noted the benefits of two–element meters, including information on load and the ability to move customers onto more cost reflective tariffs, innovative pricing and improved customer complaints handling. SPA submitted that benefits for customers include:

- a better understanding of energy use
- the two–element meter will enable the customer to continue to receive bills that split energy consumption between their general consumption (e.g. lights) and controlled load consumption (e.g. hot water systems, pool pumps and slab heating)
- customers will be able to make informed investment choices about electric hot water as compared to gas hot water systems.[159]

SPA also claimed that retailers would benefit from receiving information about their customers' energy consumption profiles, enabling them to offer innovative tariffs aligned with customers' usage.[160]

The AER notes that, as outlined in section 2.1.2.1, these benefits can also be realised through time of use tariffs, which will replace existing network tariffs as a consequence of the AMI roll-out of interval meters.

On request, SPA provided further information to the AER demonstrating that the total additional cost of rolling out single element AMI meters (instead of two–element meters) for controlled load customers over 2010-11was $26.54 million, based on unit rates for:

- the cost of single element meters
- costs of special meter reads

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[159] SPA, *AMI Initial Budget Application 2009–11—SP AusNet Response to AER questions*, 16 June 2009.

[160] ibid.

- cost to revisit a site, to install a single element meter, and
- costs associated with tariff reassignment.[161]

By comparison, SPA showed that the cost to roll-out two–element AMI meters to controlled load customers (instead of single-element meters) over the same period was $21 million.[162]

The AER's consultant, Energeia, reviewed the quantified costs and benefits associated with two–element meters, and found them to be reasonable. However, Energeia noted that the cost differential between single and two–element meters, $27, appeared relatively low. Given its industry knowledge of the risks involved in rationalising tariffs during an interval meter roll-out, Energeia concluded that SPA's proposed expenditure for two–element meters was likely to be reasonable and prudent.[163]

As noted in section 2.1.2.1 above, the AER understands that transitional costs would arise in moving direct load customers onto an interim tariff if supplied with a new single element meter, given that communications and supporting IT technology might not be established at that time. The AER considers that SPA has demonstrated that these costs outweigh those of installing a second element for these customers, thus retaining the existing tariff structures for the interim period. As for PC, the AER notes that once supporting technology is installed, customers would only need to be moved once onto a cost reflective time of use tariff, thus the prime justification for installing two–element meters would fall away.

Based on the information provided by SPA and also on Energeia's advice, the AER concludes that SPA has demonstrated a transitional net benefit associated with two–element meters and has approved the associated costs as part of its draft determination on SPA's submitted budget.

The AER notes that it expects the main benefit associated with installing a two–element meter will cease once AMI communications technology is rolled out. Accordingly, the AER notes that in the second budget period (2012–15) two–element meters are unlikely to be required by SPA.

Direct load control

SPA proposed a utility managed load control relay be inserted into all AMI meters as part of its roll-out.

The AMI minimum functionality specifications incorporate different load control technologies within AMI meters to that proposed by SPA. The AER considers that SPA has proposed a direct load contactor which is above the AMI minimum specifications, and accordingly outside scope under clause S2.7(iii).

The minimum specifications include supply contactors, which will enable, among other things, a DNSP to connect or disconnect a customer's supply. A controlled load contractor with relay, as proposed by SPA, is not part of the specifications. This

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161 ibid. For further information, see section 2.1.2.1 above relating to PC's two–element meter proposal.

162 ibid.

163 Energeia, op. cit. p. 34.

additional function would allow SPA to control hot water units and other controlled load appliances.

The AMI minimum functionality specification requires that a Zigbee transponder be included in every AMI meter. In addition, the minimum specification requires that all AMI meters include a Home Area Network interface, which facilitates direct load control of appliances via AMI infrastructure. The AER considers that this functionality will provide a basis for direct load control.[164]

Therefore, the AER considers that the AMI minimum specifications allow for direct load control via the Zigbee protocols and the Home Area Network interface.

The AER notes that in 2007, in the context of the AMI Functionality Working Group, AGL proposed that an additional load control relay be included in AMI meter timers. AGL proposed that all AMI meters (for example, which do not require a dedicated contractor for hot water) include a load control contactor that allows them to be used to switch specific customer appliances under DNSP control. The outcomes of the relevant AMI Functionality Working Group (FWG) meeting are reflected in the following extract of the meeting minutes:

> 'The AGL proposal (having an additional contactor in all meters as a minimum) was not recommended, mainly because the alternative means of providing load control for other loads can be done more cheaply. This was agreed by FWG members'[165]

The AER notes that SPA was party to this meeting and therefore was in agreement with the FWG members.

Contrary to the FWG decision, SPA has proposed costs the inclusion of an additional load control contactor in its budget application. The AER requested further information from SPA to justify its proposal on net benefit grounds, as was foreshadowed in the AER's framework and approach paper.[166]

In response, SPA stated:

> Our metering solution looked at the technical challenge of providing load control directly from the meter as opposed to the only other option of providing load control in an AMI environment, via the HAN (Home Area Network), which is not due to be activated until 2013.
>
> Due to the scope of the HAN not being defined adequately withinthe (sic) AMI functionality specification and the fact that short of the requirement for a HAN to be operated as an Energy Services Portal as detailed in the Zigbee Alliance, our concern was the ability of the Network to potentially control "other" large load control groups without having clear and concise technical guidelines of how the HAN could be configured to do this.

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164 Customers who wish to have some appliances subject to direct load control will also need a Zigbee device. Typically, these can be via a new plug in application. This will allow non-load controlled appliances to be subject to load control, with customers electing to this feature. Retailers may offer this option as a value added AMI service.

165 AMI Functionality Working Group Minutes – 7 August 2007 and actions log, 7 August 2007, p. 10.

166 AER, Framework and approach paper, p. 29.

> Other than an internal 31.5 amp rated contactor, the only other method of providing load control would be via a 2 amp rated relay system integrated into the meter. This relay can then be activated to switch an external mounted load control contactor. Under current network obligations, this contactor would need to be installed and maintained by the Network (if load control for that customer already exists), or provided by the customer, as is the case for any "Greenfield" customer that requires this service as a "new connection".[167]

The AER considers that the Home Area Network and other devices provide a degree of customer choice through retailers, which SPA might potentially be removing through its proposed direct load control solution.

Given that the FWG deemed these options not suitable and not supported on a cost benefit analysis, the AER considers that SPA's proposal is outside scope as defined in clause S2.7(iii) of the revised Order, as it exceeds the AMI minimum specifications. The AER also considers that the costs associated with direct load control do not meet the commercial standard test, considered in section 2.3.2.2 below.

The AER requested information from SPA as to the costs proposed for its direct load control option. SPA stated that costs amount to $1.58 million for 2010 and $4.52 million for 2011. Accordingly, the AER has removed these costs from SPA's 2010 and 2011 submitted budget.

Other potential activities outside scope

In reviewing documentation provided by SPA, Energeia initially identified that the following activities proposed by SPA were potentially outside scope, as they went above the minimum specifications established by the DPI:

- additional IT systems to support multiple vendors
- facility for 100 per cent of meters to be read within 25 minutes
- facility for 100 per cent of connect/disconnects to be performed within ten minutes
- facility for 100 per cent of load control to be performed within one minute
- facility for 100 per cent of supply limiting to be performed within one minute
- scalable communication technology to support future AMI functionality and transaction growth
- network management system availability of 99.0 per cent.[168]

Following further investigation and analysis, Energeia concluded that the 'better than minimum performance requirements' activities:

- had not been included to support out of scope activities
- do not appear to significantly contribute to overall AMI costs

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[167] SPA, *Response to AER AMI Questions – dated 16 June 2009*, 22 June 2009, page 16.

[168] Energeia, op. cit., p. 16 and 32.

- were in many cases recommended by independent experts
- were developed and approved in the course of a significant due diligence process, and
- may effectively address under-performance in other AMI system components, such as IT.[169]

The AER considers that Energeia conducted a thorough review of SPA's proposed AMI solution specifications with regard to the minimum AMI specifications established by the DPI, and possessed the relevant industry knowledge and experience necessary to undertake this review.

AER conclusion

For the reasons set out above, in relation to SPA's submitted budget, the AER has:

- established the proposed costs associated with direct load control are for activities outside scope, and
- established the proposed costs associated with all other activities are not outside scope, particularly given the broad definition of 'AMI technology' within clause S2.6(b)(1)(i) of the revised Order.

Table 2.18 summarises the AER's analysis of SPA's AMI roll-out under the scope test.

[169] ibid., p. 35.

Table 2.18: Summary of AER considerations under the scope test - SPA

Proposed expenditure category	Activities undertaken	AER considerations
Metering	Non IT capex—metering and communications equipment purchase: meters	Within scope, as defined per: S2.6 (a)(i) procurement…of accumulation and manually read interval metering installations to support the billing of network tariffs, including accumulation meters and manually read meters, measurement transformers and associated equipment S2.6 (b)(1)(i) …provision of remotely read interval meters… 'AMI technology'…
	Non IT opex—other metering and communications costs: Meter maintenance	Within scope, as defined per: S2.6 (b)(1)(i) provision and operation of remotely read interval meters…
	Non IT capex—AMI installation services: meters	Within scope, as defined per: S2.6 (b)(1)(i) …provision of remotely read interval meters required to be installed… 'AMI technology'… S2.6 (b)(2)(i)(A) provision and installation of AMI technology. This activity includes: planning, designing and managing the roll-out of AMI technology.
Meter reading and meter data services	Non IT opex—other metering and communications costs: meter reading	Within scope, as defined per: S2.6(a)(ii) provision of metering data services, including…manual meter reading, remote meter reading…

Communications	Non IT opex—other metering and communications costs: meter data management	Within scope, as defined per: S2.6 (b)(1)(i) provision and operation of remotely read interval meters…network management systems S2.6 (b)(2)(i)(B) provision and installation of AMI technology. This activity includes…processing the required industry notifications, including the management of exceptions, reporting and performance management.
	Non IT opex—other metering and communications costs: backhaul communications	Within scope, as defined per: S2.6(b)(2)(vii)(B)(1) network management system (NMS) for management of data communication between the meters and business IT systems. The NMS is made up of meter management system (MMS) and communication network management system (CNMS)
	Non IT opex—other metering and communications costs: communication infrastructure maintenance	Within scope, as defined per: S2.6(b)(1)(i) provision and operation of…communications equipment, communications services…
	Non IT capex—metering and communications equipment purchase: Communication infrastructure	Within scope, as defined per: S2.6(b)(1)(i) provision and operation of…communications equipment, communications services… S2.6 (b)(2)(i)(A) provision and installation of AMI technology
	Non IT capex—AMI Installation services: communication infrastructure	Within scope, as defined per: S2.6(b)(1)(i) provision and operation of…communications equipment, communications services… S2.6 (b)(2)(i) provision and installation of AMI technology

Information and control services	Opex and capex—Functional technology response per functional element: asset management, workforce scheduling and mobility, connection point management, outage management, network management, meter data management, performance and regulatory reporting, revenue management, geospatial information, program support	Within scope, as defined per: S2.6(b)(1)(ii) information technology infrastructure and all information technology systems to comply with the Specifications S2.6(b)(1)(iii) business processes and information technology systems to manage the remotely read interval meter roll-out S2.6(b)(2)(vii)(A)(1) manage the roll-out of AMI technology, including the asset management system to manage the full asset life cycle for interval meters and communication network infrastructure; (2) mobile workforce system and infrastructure including hand held devices to enable co-ordination of field personnel for the communications infrastructure and interval meter roll-out S2.6(b)(2)(vii)(B)(1) network management system (NMS) for management of data communication between the meters and business IT systems. The NMS is made up of meter management system (MMS) and communication network management system (CNMS); (2) manage the operation of AMI technology, including outage management system S2.6(b)(2)(vii)(C)(1) deliver all required Regulated Services and achieve associated service obligations, including: metering and revenue system for meter data collection, meter data processing, service order management, revenue management, consumption data management, customer details management and connection point management; (2) enhancements to corporate systems required to support AMI technology S2.6(b)(2)(vii)(E) include any modifications to distribution IT Systems affected by the introduction of AMI technology S2.6(b)(2)(xi) program governance and management, including planning, program and project management

	Opex and capex—IT infrastructure: hardware, 'platform' software licenses and maintenance, hardware support and 'platform' software support, system integration/software customisation	Within scope, as defined per: S2.6(b)(1)(ii) information technology infrastructure and all information technology systems to comply with the Specifications S2.6(b)(1)(iii) business processes and information technology systems to manage the remotely read interval meter roll-out S2.6(b)(2)(vii) provision, operation and maintenance of IT applications, systems and infrastructure, including disaster recovery
	Non-IT capex—Metering and communications Equipment Purchase: WAN	Within scope, as defined per: S2.6(b)(2)(vii)(B)(1) network management system (NMS) for management of data communication between the meters and business IT systems. The NMS is made up of meter management system (MMS) and communication network management system (CNMS)
	Non-IT capex—AMI installation services: WAN	Within scope, as defined per: S2.6(b)(1)(i) provision and operation of…network management systems and other associated equipment
Customer services	Non IT opex—Other metering and communications costs: customer service	Within scope, as defined per: S2.6(b)(2)(iii) customer service associated with the AMI technology and management of: guaranteed service level payments, complaints and enquiries, meeting claims, Ombudsman complaints, call centre, customer communications and notifications and focus groups, surveys, retailer communications and process audits.
Project management and training	Non IT opex—project and administrative costs: technology trials, customer response trials, project management, training, AMI Program Office and AMI Industry Steering Committee costs, audit and quality assurance, AMI budget and charges applications, legal costs, equity raising	Within scope, as defined per: S2.6(b)(2)(iv) piloting, trialling and testing of AMI technology, including home area networks S2.6(b)(2)(vi) customer response trials S2.6(b)(2)(x) provision and implementation of change management, training and business continuity plans to enable business transition to the provision of AMI metering services S2.6(b)(2)(xi) program governance and management, including (A) participation in State and

	costs, finance and administration including treasury, management fees or overhead, extra accommodation costs	national industry activities relating to industry coordination, industry governance and developing related cross-industry material, (B) project management, (D) audits and quality assurance, (G) legal and regulatory, including budget and charges application processes S2.6(b)(2)(xii) program financing, including raising debt and/or equity finance, treasury and administration S2.6(b)(2)(xiii) executive and corporate office services

2.3.2.2 Prudent test

Contract costs—competitive tender test

SPA submitted its budget application on 27 February 2009, and accordingly contract costs for the purposes of the prudent test are those that are pursuant to contracts signed before that date. SPA did not submit a revised budget application.

SPA's budget application stated that it had not settled the arrangements of its AMI program, nor completed formal contract arrangements for the procurement or deployment of its proposed AMI solution.[170] However, SPA's budget application templates indicated that 6 per cent ($18.4 million) of its proposed initial budget period costs are classified as committed contract costs under the revised Order. SPA subsequently indicated that the contract costs are associated with AMI technology trials.[171] SPA's committed contract costs fit within the following expenditure categories:

- IT operational and maintenance expenditure—software licenses and maintenance, program management and architecture, hardware support and 'platform' software support
- IT capex—system integration/software customisation, software licenses and maintenance, hardware, 'platform' software licenses and maintenance
- Non-IT operational and maintenance expenditure—meter data management.[172]

SPA provided request for tender documentation for the following processes:

- a request for tender conducted in 2007 seeking cost estimates across all areas of the AMI roll-out, including for an expert provider to assist in the assessment of potential communications solutions[173]
- an early 2008, broad request for tender covering SPA's AMI metering, communications, network management system and production trials requirements[174]
- an early 2009 request for tender covering the AMI communications solution and communications services, focussing on WiMAX as the preferred technology. This documentation included an unsigned, sample contract for the communications solution[175]

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170 SPA, op. cit., (budget application), pp. 31-36.
171 SPA, SP AusNet response to AER questions dated 16 June 2009, p. 3.
172 SPA, op. cit., (budget application), budget templates (confidential).
173 SPA, *Scope of Work—SPA technology analysis AMI communications,* 13 July 2007.
174 SPA, *RFT for the provision of Advanced Metering Infrastructure—Request for tender no. 2008/T15*, 25 March 2008.
175 SPA, *Advanced Metering Infrastructure Production Network RFT 2009/T04*, 17 March 2009.

- an early 2009 request for tender covering AMI meter installations services, which included a sample meter installation agreement.[176]

SPA also provided some tender evaluation reports for these processes, including a draft report by Deloitte containing its independent assessment of the vendor responses to the early 2008 request for tender.[177] It provided a high-level overview of its general procurement policy, however no evidence was provided to indicate that this policy was adhered to in the procurement of AMI contract costs.[178]

During the review, the AER requested that SPA provide all signed contracts associated with the AMI roll-out. SPA provided some signed contracts associated with the AMI trials, and reiterated that no AMI roll-out contracts had yet been signed. The signed contracts provided amounted to $2.1 million of expenditure for WiMAX technology trials. The AER understands that these costs are included within the Program management and training cost category within SPA's budget application. The AER did not receive contract information for the remaining $16.3 million of contract costs within SPA's budget application.

Energeia also assessed the tendering information submitted by SPA, and concluded that although the tendering process had not been concluded, the tendering process undertaken to date was relatively competitive.[179]

Clause 5C.10 of the revised Order states that in making a determination in which the AER establishes that a contract was not let in accordance with a competitive tender process, the AER must have regard to:

- the tender process for that contract
- whether there has been compliance with that process, and
- where the AER establishes that the request for tender unreasonably imposed conditions or requirements that prevented or discouraged the submission of any tender that was consistent with the selection criteria, that fact.

As the AER was able to verify the AMI trials contracts and associated request for tender processes, the AER applied the contract cost test to the $2.1 million of contract costs for which it received signed contracts. In applying this test, the AER reviewed all RFT associated information and documentation provided by SPA, which demonstrated that it is likely the contracts were let in accordance with a competitive tender process, and therefore that costs associated with these signed contracts are prudent. The AER's assessment of these contract costs under the competitive tender test, using the criteria set out in the framework and approach paper is summarised in Table 2.19.

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176 SPA, *Advanced Metering Infrastructure Meter Installation Services RFT 2009/T05*, 16 March 2009.

177 Deloitte, *SP AusNet AMI Program—RFT evaluation, Final report—supplementary information Draft*, June 2008.

178 SPA, *Logistics and procurement—Procurement policy*, 14 May 2008.

179 Energeia, op. cit., p. 33.

As the AER was unable to verify the remaining $16.3 million of contract costs within SPA's submitted budget, despite its requests for further information from SPA, the AER considers it has established that these remaining costs were not let in accordance with a competitive tender process. Accordingly, the AER will assess these costs under the non-contract cost tests, expenditure incurred and commercial standard tests.

Table 2.19: Summary of AER considerations under competitive tender test- SPA initial budget application

AER approach to competitive contract test, as set out in framework and approach	Considerations
that the initial request for tender documentation is made widely available to all parties that might be interested in tendering	RFTs released to wide market, then further information provided upon request from vendors. Information provided in RFT evaluation reports for RFT 2009/T015 and 2009/T04.
that, if adopted, any multi-stage tendering process is appropriate given the nature of the services sought and the number and prospects of potential bidders	No multi-stage tendering process adopted for contract costs.
that the issued tender documentation: *provides adequate information about the background to the AMI program and the DNSP* *details the tender process* *provides a detailed specification of the services sought* *adequately addresses matters such as risk sharing and contractual terms and conditions* *where appropriate, sets out the tender*	RFT docs: Documents provide some reasonable background to the project Reasonable detail on the tender process Good detail on the services sought Risk sharing arrangements settled early, draft contracts supplied to potential vendors RFT sets out tender evaluation criteria in limited detail, however a good level of detail is provided on the services sought, so vendor should be aware of services and criteria being sought.

evaluation criteria	
that adequate time has been allowed for bid preparation and between tender stages, taking into account the scope and complexity of information sought from tenderers	RFT 2008/T15 – RFT issued 25 March 2008, responses due by 18 April 2008. RFT 2009/T04 – RFT issued 17 March 2009, responses due 27 April 2009. RFT 2009/T05 – RFT issued 16 March 2009, responses due 14 April 2009. RFT 2007 – RFT issued 13 July 2007, date for responses not provided
that the request for tender does not unreasonably impose conditions that prevent or discourage the submission of any tender. For example, these might include the payment of high fees for receiving tender documentation, technical requirements that are unreasonably high given the nature of the tender, unreasonable liability requirements, or any other requirements that impose unduly high expenses on potential tenderers	Cannot find evidence that this occurred – no high fees, no unreasonable technical requirements, liability requirements reasonable (as set out in draft contracts for RFT 2009/T04 and T05).
that detailed and appropriate tender evaluation criteria have been developed and applied. The design of the tender and the evaluation criteria need to ensure that, as far as possible, competing bids are easily comparable.	2008: An independent tender evaluation process was carried out by Deloitte, with vendors scored according to an evaluation strategy (not provided). 2009: SPA conducted tender evaluation processes, similar scoring process to that applied by Deloitte was used to differentiate vendors. Process appears reasonable, high degree of scrutiny was applied.

that any 'bundling' of different services into a single contract is appropriate and that the advantages of doing so (economies of scale, reduced administration costs) outweigh the costs (less competition)	N/A – As yet no bundling of services, only contracts signed are for the AMI trials.
that appropriate tender briefings have been conducted and tenderers have been provided with the opportunity to clarify aspects of the tender	RFT 2008/T15 – Briefing session held on 28 March 2008. No details on questions to be answered. RFT 2009/T04 – Briefing session held on 25 March 2009. RFT 2009/T05 –Briefing session held on 25 March 2009. RFT 2007 – No details on tender briefing sessions provided.
that the DNSP has taken appropriate steps to verify the information provided in tender responses, including referee interviews, field trials, and other checks	Tender Evaluation Reports for RFT 2009/T04 and T05 indicate that referee checks were being conducted, however outcomes of these checks as yet unknown. Tender evaluation reports indicated that short-listed vendors were required to make presentations on their tenders, and SPA staff attended each vendor's site. Signed contracts are for technology field trials.
that any post-tender negotiations with the successful tenderer are consistent with the tender and do not call into question the original selection decision	No details on tender negotiation process were provided, although AER understands some negotiations are underway for current non-contract costs.
that the outcome of major tenders have been considered and approved by the DNSPs' boards of directors	No evidence of SPA Board approval for the signed contracts was provided, however signed contracts are small, for the AMI trials only.
that for large contracts, a probity audit of the tendering process has been conducted.	No probity audit was conducted, however no large contracts have been signed to date.

Non-contract costs – expenditure incurred test

In considering whether the non-contract costs proposed by SPA are more likely than not to not be incurred, the AER analysed the information submitted and the likely implications for SPA should it not incur the proposed costs in its submitted budget.

Of SPA's total proposed costs ($313 million), SPA classified 94 per cent ($294.7 million) as non-contract costs. As noted in the previous section, the AER established that $16.3 million of SPA's proposed contract costs were not substantiated as contractual, and accordingly the AER cannot establish whether these costs followed from a competitive tender process. As such, the AER will consider these costs under the expenditure incurred and commercial standard tests for non-contract costs.

SPA's total non-contract costs for the purposes of the expenditure incurred test amount to $310.9 million, which is 99 per cent of SPA's total submitted budget.

Information submitted by SPA in support of its submitted budget did not indicate which proposed non-contract costs would be subject to future competitive tender processes, however the AER understands that a considerable proportion of the costs will be subject to a tender process in the future.

The AER considered each expenditure category of SPA's budget application with regard to whether any costs are unlikely to be incurred as part of the AMI roll-out. It considered the implications for SPA of not incurring costs, with regard to its regulatory obligations, including the revised Order. The AER notes that failing to incur the proposed non-contract costs may result in SPA failing to meet its AMI roll-out obligations. The AER considers that this places a degree of risk on SPA to ensure that all necessary components of the roll-out are procured and implemented.

Energeia assessed SPA's non-contract costs under the expenditure incurred test, noting the two approaches that SPA used to estimate costs were:

- based on tendering outcomes where possible, or
- based on existing work practices and cost structures where the services or technologies are familiar to SPA.

Energeia stated that both approaches are reasonably accurate and robust.[180]

The AER sought information from the DPI as to the likely purpose and progress of AMI customer response trials, for which SPA proposed $1.5 million of expenditure over the initial budget period. DPI indicated that the customer response trials, which were mandated as a necessary element of the AMI roll-out had been delayed, and are unlikely to be required in 2009, or 2010. The AER also sought SPA's view on the customer response trials, and SPA identified that the costs proposed for AMI customer response trials are unlikely to be incurred within the timeframes for the initial budget period.[181]

[180] Energeia, op. cit., p. 33.
[181] SPA, SP AusNet response to AER questions dated 16 June 2009, p. 14.

The AER has therefore established under clause 5C 3(b)(iii) of the revised Order that the costs associated with customer response trials will not be incurred by SPA over the initial budget period. Therefore, the AER has removed the cost of these trials from its submitted budget.

In conclusion, aside from the costs associated with AMI customer response trials, the AER could not establish it is more likely than not that SPA's non-contract costs will not be incurred.

Non-contract costs – commercial standard test

SPA did not submit any independent probity reports on the forecast costs within its budget application. All SPA's non-contract costs were estimated based on the responses to its early request for tender processes, which the AER considers is appropriate in the circumstances.

With regard to the commercial standard test for SPA, Energeia noted that SPA's approach to developing business requirements, assessing technical options and developing technical specifications and tendering documentation demonstrated that SPA's AMI roll-out program had generally met a reasonable commercial standard.[182]

In considering SPA's budget application non-contract cost expenditure under the commercial standard test, the AER considered non-contract costs within each cost category, as defined by SPA. The following sections discuss the amount of non-contract costs within each expenditure category, the reasons the costs need to be incurred to roll-out AMI and the AER's conclusions on each cost category under the commercial standard test.

Metering

SPA's budget application proposed $128 million for the procurement, installation, salvage, operation and maintenance of approximately 682 863 AMI meters. SPA stated that all of the associated non-contract costs will be subject to a competitive tender process.[183]

The procurement and installation of AMI meters is essential to allow SPA to meet its regulatory obligations under the revised Order. SPA stated its plans to maximise the efficiency of the meter roll-out, for example by:

- minimising the number of visits required to each individual site
- rolling out to major customer centres first, concentrating resources and reducing travel times to allow greater skills concentration in the early stages of the roll-out program
- undertaking a preliminary site visit to determine and prepare for difficult installation sites.[184]

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182 Energeia, op. cit., p. 33.
183 SPA, op. cit (budget application), p. 24.
184 SPA, *Advanced Metering Infrastructure Revised Pricing Proposal*, 8 September 2008, attachment 3.2 Meter Installation Justification Process, p. 7.

SPA also provided justification for its meter maintenance costs, emphasising the importance of maintenance to comply with its regulatory obligations under the Customer Metering Code and the AMI Functionality and Service Level Requirements. SPA indicated its intentions to conduct additional sample testing of AMI meters to meet these requirements.[185]

Meter salvage activities include the dismantling and recycling of meters. SPA acknowledged that the monetary compensation received for the recycled meter materials would be unlikely to outweigh the costs of dismantling and transporting the meters, however considered that meter salvage was a necessary activity to allow SPA to meet its internal environmental policy. SPA submitted that the recycling activities would reduce the impact to the environment of the AMI roll-out, and provide benefits to the community organisations employed to provide the salvage services.[186] The AER considers that SPA's proposed meter salvage activities reflect a reasonable commercial standard.

In considering the regulatory obligations and requirements faced by SPA in implementing its AMI roll-out and the nature of the AMI roll-out, the AER considers SPA's non-contract metering costs are necessary to meet these obligations, and therefore reflect a commercial standard that a reasonable business would exercise in the circumstances.

Meter reading and meter data services

SPA's forecast non-contract costs for meter reading and meter data services is $18.8 million over the initial budget period.

As well as meter reading, these activities include the back-office processes for customer installations, route management, scheduling, uploading and downloading of information to reading devices.[187] SPA indicated its intention to develop and implement a Meter Data Collection (MDC) system that will manage the interaction between the back office systems and field devices (such as meter reading devices). This system will operate during the AMI roll-out period for non-AMI meters, and for initial interval meter reading.[188] The AER considers SPA's proposed meter reading activities are necessary for it to meet its regulatory obligations under the revised Order.

Meter data services include data processing and management and the transfer of meter data to retailers and market systems.[189] In the early years of the AMI roll-out, under the AMI Service Levels Specification, SPA is required to ensure meter data collected is processed and delivered to the market within two business days of the read. In the later years of the AMI project, the meter data must be delivered to the market by 6am the day following the meter read. Meter data services include the processes to ensure

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185 SPA, *Advanced Metering Infrastructure Revised Pricing Proposal*, 8 September 2008, attachment 3.3 Meter Maintenance Justification Process, p. 6.

186 SPA, *Advanced Metering Infrastructure Revised Pricing Proposal*, 8 September 2008, attachment 3.5 Meter Salvage Justification Process, pp. 7-9.

187 SPA, op. cit., (budget application), p. 25.

188 SPA, *Advanced Metering Infrastructure Revised Pricing Proposal*, 8 September 2008, attachment 3.4 Meter Reading Justification Process, p. 7.

189 SPA, op. cit., (budget application), p. 25.

these service levels are met, as well as exception handling processes for meter data that fails validation tests due to errors in the meter reading.[190]

The AER considers that SPA's proposed meter reading and meter data services costs are necessary to enable it to meet its regulatory obligations, and are therefore reflective of a commercial standard that a reasonable business would exercise in the circumstances.

Communications

SPA's proposed communications costs for the initial budget period amount to $22.2 million. These costs account for the communications infrastructure between the AMI meters, network management systems and business support systems.[191] SPA listed the key activities involved in the communications cost category:

- development of business, regulatory and other requirements relevant to the implementation of AMI, including preliminary testing
- design of a comprehensive solution architecture document that will guide the project's operational implementation
- development of end to end process solutions for the detailed design phase
- detailed planning of location and site requirements for base stations
- calibration of all tools to be used in detailed design phase (e.g. radio reception modellers)
- selection, data uploading and mapping of detailed design requirements by specific geographical areas using mapping tools
- plan, manage and audit the field roll-out and commissioning of communications infrastructure
- uploading configuration data to the Network Management System
- establishment, resourcing (including training) and on-going operation of a 24/7 Network Operations Centre.[192]

As detailed in section 2.3.2.1, SPA elected to implement a WiMAX based communications solution for approximately 85 per cent of its network, supported by a 3G communications solution for the remaining 15 per cent.[193] Upon AER request, SPA provided documentation of its communications decision making process, in particular relating to its decision to implement WiMAX as compared to other technologies, such as the mesh radio solutions adopted by the other Victorian DNSPs. The documentation indicated that SPA undertook a comprehensive analysis of

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190 SPA, *Advanced Metering Infrastructure Revised Pricing Proposal*, 8 September 2008, attachment 3.6 Exception Handling—Process description, p. 6.

191 SPA, *Advanced Metering Infrastructure Revised Pricing Proposal*, 8 September 2008, attachment 4.1 Communications infrastructure justification process, p. 4.

192 ibid., pp. 4-5.

193 SPA, op. cit., (budget application), p. 27.

communications infrastructure tender responses and independent technical advice, and made a decision to implement WiMAX based on the findings of a long-term cost benefit analysis. As noted above, the AER understands that SPA's consideration of AMI communications technologies explicitly accounted for each solution's potential to provide additional communications services beyond AMI, including unregulated services. The AER considers this is a standard consideration which reflects what a commercial business would undertake in the circumstances.

Energeia also reviewed the additional documentation and concluded that SPA's options analysis considered a wide range of communications solution alternatives and ultimately selected WiMAX as the primary solution based on a similar total cost of ownership as other communications technology choices. Energeia's report notes that the relatively higher capital cost associated with WiMAX (as compared to a mesh radio solution) is expected to be offset by relatively lower operating costs in the longer term.

The AER considers that SPA's decision to select WiMAX was appropriate in the circumstances, given the state of the technology relevant to the provision of AMI communication services and the information available to SPA at the time of its decision. The AER considers that SPA's forecast communications costs are reflective of a commercial standard that a reasonable business would undertake in the circumstances. The AER also considers that, while it has other non-electricity related communications potential, the WiMAX communications technology, as proposed to be deployed by SPA, is primarily to allow it to provide regulated AMI services.

Information and control services

SPA's total forecast of information and control services costs for the initial budget period is $96.6 million. Information and control services activities are divided between SPA's network management system and business systems.[194]

SPA submitted that, as its communications solution is made up of both WiMAX and 3G vendors, each with independent business systems, a network management system is necessary to govern and interconnect these communications systems with SPA's business processes, including metering revenue and outage management systems.[195] The network management system will include:

- a meter management system—for device management, data acquisition and meter control
- a communications network management system—to manage the meter network from a data communications perspective, to allow the meter management system and meters to interact and collaborate
- a network operations centre and operational support systems—for meter management, network management inventory management, engineering, planning and repair functions for the communications network

[194] ibid., pp. 28-29.
[195] ibid., p. 19.

- a network operations centre service desk—the single point of contact supporting the other network management systems, which will be aware of all identified incidents and commence resolutions.[196]

SPA submitted that new business systems are required to support its existing IT and back-office systems in delivering the required AMI functionality and service levels, in light of the increased meter data volumes and functionality complexity.[197]

SPA's September 2008 Revised Pricing Proposal indicated that it is pursuing an outsourced design and build and in-house operations approach to procuring and implementing the information and control services within the AMI roll-out. With the assistance of specialist advisors and vendors, SPA developed a network management system design for the AMI roll-out. It stated that its preferred network management system design was based on system models deployed within the carrier and telecommunications sector.[198]

The AER considers it appropriate for SPA to seek specialist advice on network management and business systems to facilitate the AMI roll-out, and considers that basing its design on those within the telecommunications industry is likely to result in a reasonably efficient outcome. Considering the nature of the AMI roll-out and the state of the necessary technologies and changes to SPA's business systems to facilitate the AMI roll-out, the AER considers SPA's proposed information and control services costs reflect a reasonable commercial standard.

Customer services

SPA proposed costs of $5.2 million for customer services activities in the initial budget period. Customer services costs relate to inquiries, complaints and claims arising from the AMI roll-out. SPA proposed to develop a customer services team, to be staffed with internal SPA employees.[199]

SPA's customer services costs include:

- upgrades to interactive voice recording that manages the inbound calls
- increased resource requirements to cater for the increased volume of inquiries, complaints and claims
- training for dedicated AMI customer service staff
- development of a communication and engagement strategy to educate and inform customers about the AMI project.[200]

The AER understands that some of the initial AMI customer education programs will be supported by information provided to customers by DPI, and that SPA's customer

196 ibid., pp. 19-20.
197 ibid., p. 29.
198 SPA, *Advanced Metering Infrastructure Revised Pricing Proposal*, 8 September 2008, attachment 4.2 Network management systems justification, p. 7.
199 SPA, *Advanced Metering Infrastructure Revised Pricing Proposal*, 8 September 2008, attachment 6. Customer services justification process, p. 4.
200 ibid., p. 5.

services costs may be offset by this additional information program. However, the AER acknowledges that the increased customer information will likely result in an increased volume of inquiries and complaints made to SPA.

SPA has estimated the costs of customer services based on current call volumes and associated costs and has made reasonable assumptions as to how this will be affected by the AMI roll-out. SPA is anticipating small increases in its guaranteed service level payments corresponding to missed appointments, and a greater number of customer complaints to the Office of the Energy and Water Ombudsman of Victoria associated with the AMI roll-out.[201] The AER notes that CP, PC, JEN and UED have also proposed activities for dealing with customer complaints and enquiries related to the AMI roll-out.

Given the nature of the mandated AMI roll-out and the likely impact on customers, the AER considers SPA's planned customer services costs reflect a commercial standard that a reasonable business would incur in the circumstances.

Project management and training

SPA forecast initial budget period costs of $42.1 million for project management and training activities. The AER assessed $2.1 million of this expenditure under the competitive tender test in section 2.3.2.2, and found these costs to have been competitively tendered. Accordingly, the AER applied the commercial standard test to the remaining $40 million of program management and training costs.

This cost category covers the following range of activities required for the AMI roll-out:

- SPA's AMI program office
- program office costs, attributed to industry shared costs for the Victorian DNSPs
- project management
- metering—including defining the requirements, participating in DPI metering trials, technology development, assessing the market for the meters, recommending meter vendors, managing the metering procurement, developing business cases for Board approval and managing the metering roll-out plan
- communications—including defining the communications requirements, technology development, assessing the suitability of different communications options, recommending communications vendors, managing the procurement of communications equipment, developing business cases for Board approval and managing the communications roll-out plan
- technology trials[202]

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201 ibid., p. 13.

202 The AER notes that not all of SPA's costs associated with the AMI technology trials were considered to be competitively tendered contract costs. The remaining $4 million of technology trials expenditure is considered to be a non-contract cost.

- Network Operations Centre costs, which will be established to deal with minor faults in the AMI communications infrastructure.[203]

SPA provided some commercial justification for the costs associated with project management in its September 2008 Revised Pricing Proposal. Project management and training include costs associated with equity raising, finance and administration, management fees, overheads and accommodation costs. It also includes some costs associated with industry change management, such as the AMI Industry Steering Committee and other stakeholder meetings.[204] The AER considers that given the pioneering nature of the Victorian AMI roll-out, allowing for these transitional costs is reasonable, and reflective of reasonable commercial standards.

The AER considers project management and training activities to be necessary in ensuring the AMI roll-out is efficiently managed and meets SPA's metering and other regulatory obligations. Given the risks inherent in the AMI roll-out for SPA and AER considers these costs to be reflective of a commercial standard practice in the circumstances.

2.3.3 AER conclusions

For the reasons set out in sections 2.3.2.1 and 2.3.2.2, in relation to the expenditure proposed in SPA's submitted budget, the AER has:

- not established that the proposed expenditure is for activities outside scope at the time of commitment to that expenditure and at the time of this draft determination

- established that $16.3 million of the proposed contract costs (as defined in the revised Order and set out in SPA's submitted budget) were associated with contracts that were not let in accordance with competitive tender processes

- established that it is more likely than not that $1.5 million of the non-contract costs, associated with customer response trials, will not be incurred

- not established that it is more likely than not that the remaining proposed non-contract costs will not be incurred nor do they involve a substantial departure from the commercial standard that a reasonable business would exercise in the circumstances.

2.3.4 Draft determination

The AER's draft determination rejects SPA's submitted budget. In accordance with its conclusions and reasons discussed above, the new submitted budget the AER has determined to approve is set out in Table 2.20.

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[203] SPA, *Advanced Metering Infrastructure Revised Pricing Proposal*, 8 September 2008, attachment 2. Project management and training justification, p. 4.

[204] SPA, op. cit (budget application), p. 33.

Table 2.20: AER draft determination— new submitted budget for SPA ($'000s, real 2008)

	2009	2010	2011
SPA proposed capex	68,472	51,837	105,120
SPA proposed opex	29,874	28,997	27,501
SPA proposed direct load control costs	0	1,576	4,519
SPA proposed customer response trial costs	872	385	269
AER draft determination – SPA capex	68,472	50,261	100,602
AER draft determination – SPA opex	29,002	28,612	27,232

Source: SPA, *Advanced Metering Infrastructure Initial Budget Application,* 27 February 2009 (revised 3 March 2009), budget template (confidential)
Note: Totals may not add due to rounding.

3 Revenue Requirements

The AER is required under the revised Order to determine AMI charges for the period 2010–11. The charges are to be set such that all that the costs associated with the AMI roll-out equal actual and expected revenues in NPV terms over the entire roll-out period.

This section assesses the DNSPs' proposed costs for 2009 to 2011 under a building block approach which includes actual costs and revenues for 2006–08 and forecasts for 2009–11. Forecast costs are based on the expenditures assessed by the AER in section 2. The conversion of costs into metering charges is discussed in section 4.

This section discusses:

- the requirements in relation to the building block costs under the revised Order
- the DNSPs' proposed building block costs and required revenues and the AER's assessment of each
- the AER's determination on the DNSPs' revenue requirements

3.1 Regulatory requirements

Under clause 4.1(b) of the revised Order, the AER is required to determine a DNSP's AMI related costs using the building block approach. The building blocks for a year are:

- a return on capital relating to the metering asset base
- depreciation
- maintenance and operating expenditure associated with the AMI rollout
- a benchmark allowance for corporate income tax and
- any other building block required by the revised Order, being:
    - net costs (or revenue) associated with providing metering services (being interval meters) from 1 January 2006 to 31 December 2008
    - the amount by which DUOS taxation liability was reduced as a result of the ESCV's consolidation of DUOS taxation and metering services in the current price determination
    - the value of any efficiency carryover arising from the current price determination for interval meters relating to operating expenditure for meter data services, meter maintenance and meter replacement costs (customer service costs)
    - expenditure from 1 January 2006 to 31 December 2008 on interval meter trials conducted in accordance with the Industry Steering

Committee or as directed or agreed by the Department of Primary Industries (DPI)

- expenditure from 1 January 2006 to 31 December 2008 on installing, commissioning and maintaining telecommunications and IT systems required to support the AMI infrastructure
- other relevant expenditure incurred from 1 January 2006 to 31 December 2008 on project management and other preparation
- expenditure from 1 January 2006 to 31 December 2008 attributable to interest rate hedging costs and exchange rate hedging costs.

Details on how each building block component is to be calculated under the revised Order are discussed in section 3.2 below.

Clause 4.1(c) of the revised Order requires the building block costs to be based on actual expenditure, or if actual data are not available, forecast expenditure. Clauses 4.1K(i) and 5D.6 require actual revenue and expenditure to be derived from a DNSP's Regulatory Accounting Statements for the years 2006, 2007 and 2008.

As part of its assessment the AER developed a charges template model in consultation with the DNSPs which automatically calculates the building block revenue requirement with a given set of inputs. This model was to be populated by the DNSPs and submitted to the AER with their charges applications.

3.2 Proposed revenue requirements

The building block revenue requirements proposed by the DNSPs to roll-out AMI are shown in Tables 3.1 to 3.5.

The DNSPs submitted their 2010–11 initial charges applications to the AER on 1 June 2009. JEN and SPA provided further information relating to their initial charges applications to account for data reconciliations at the request of the AER. These are discussed below.

Table 3.1: CP proposed revenue requirements ($'000s, nominal)

	2009	2010	2011
Return on capital	3,370	5,603	9,473
Depreciation	3,754	7,718	10,974
Operating & maintenance costs	14,684	10,862	11,438
Tax liability	0	0	0
Offset of costs and revenues 2006–08	7,802	N/A	N/A
Total revenue requirement	29,611	24,183	31,885

Source: CP, *Advanced Metering Infrastructure Charges Application 2010-11*, 1 June 2009.

Table 3.2: JEN proposed revenue requirements ($'000s, nominal)

	2009	2010	2011
Return on capital	6,710	8,874	10,885
Depreciation	7,007	13,767	17,089
Operating & maintenance costs	4,116	9,408	14,867
Tax liability	0	0	0
Offset of costs and revenues 2006–08	8,677	N/A	N/A
Total revenue requirement	26,511	32,050	42,841

Source: JEN *AMI Initial Charges Application 2010-2011, 1 June 2009* incorporating further information provided on 7 July 2009.

Table 3.3: PC proposed revenue requirements ($'000s, nominal)

	2009	2010	2011
Return on capital	6,229	11,187	20,871
Depreciation	7,140	14,852	22,387
Operating & maintenance costs	30,975	22,167	25,075
Tax liability	0	0	0
Offset of costs and revenues 2006–08	27,728	N/A	N/A
Total revenue requirement	72,072	48,205	68,333

Source: PC, *Advanced Metering Infrastructure Charges Application 2010-11*, 1 June 2009.

Table 3.4: SPA proposed revenue requirements ($'000s, nominal)

	2009	2010	2011
Return on capital	8,038	11,341	17,594
Depreciation	9,495	18,511	24,664
Operating & maintenance costs	31,362	31,221	30,368
Tax liability	0	0	0
Offset of costs and revenues 2006–08	-7,755	N/A	N/A
Total revenue requirement	41,139	61,074	72,626

Source: SPA, *Advanced Metering Infrastructure Initial Charges Application 1 June 2009*, incorporating further information provided on 29 June 2009.

Table 3.5: UED proposed revenue requirements ($'000s, nominal)

	2009	2010	2011
Return on capital	9,523	12,302	16,655
Depreciation	10,092	18,939	24,103
Operating & maintenance costs	7,615	22,358	22,063
Tax liability	0	0	0
Offset of costs and revenues 2006–08	-5,003	N/A	N/A
Total revenue requirement	22,227	53,599	62,822

Source: UED, *AMI Initial Charges Application,* 1 June 2009.

The details of each proposed building block component and the AER's analysis of these are discussed in sections 3.2.2 to 3.2.7. The following section discusses issues regarding historic expenditure data from the DNSPs' regulatory accounts which affects several building block components.

3.2.1 Discrepancies with regulatory accounts data

Clauses 4.1(k)(i) and 5D.6 of the revised Order require the AER to use the data in the DNSPs' audited 2006–08 regulatory accounting statements. Where data provided by the DNSPs are consistent with these accounts the AER has accepted them accordingly.

The AER questioned several areas where it identified variances and discrepancies between the data in the charges applications and that in regulatory accounts. In response:

- CP and PC advised IT operating and maintenance costs in 2006 and 2007 had been reallocated from the category 'regulated by price cap excluding metering' in the regulatory accounts to the 'metering – regulated by price cap' category in their initial charges application. This was on the basis of IT operating and maintenance services provided to both CP and PC by the related entity CHED services using a common IT platform and CHED Services had allocated its costs similarly.[205] This was not accepted by the AER because it was not consistent with the 2006 and 2007 regulatory accounting statements.

- CP and PC wrote to the ESCV in May 2008 requesting changes to 2006 regulatory accounts, which they provided to the AER to justify data in their charges applications. Again, these variances were not accepted by the AER as they represented a departure from audited regulatory accounts information.

- JEN provided the AER with letters to substantiate amendments to their regulatory accounts data in its charges application[206] however the AER did not accept these as they were not audited amendments. JEN 2008 costs were not consistent with

[205] CP and PC, Further Queries on Charges Application, 2 July 2009.
[206] JEN, email to the AER, 16 June 2009 and 6 July 2009.

regulatory accounts due to the allocations of a portion of capital expenditure being incorrectly attributed to "work in progress" in the asset records on the company. The AER must rely on regulatory accounts for its AMI review. Given that JEN's regulatory accounting statements provided to date do not match reconciliations provided separately to the AER, the AER has not accepted the reconciliations

- SPA stated that its charges application data had reclassified amounts (from capital expenditure to operating expenditure) that appeared in its 2006 and 2007 regulatory accounting statements in order to reflect consistency with the 2008 regulatory accounting statements. The AER did not accept changes to the 2006 and 2007 regulatory accounting statements and subsequently SPA amended its charges application to be consistent with its 2006 and 2007 regulatory accounting statements.[207]

- UED provided preliminary regulatory accounting statement information for the calendar year 2008 to the AER in May 2009. It subsequently provided revised audited regulatory accounts to the AER in June 2009. These revised accounts were used by the AER to assess their initial charges application.[208]

As noted above, the revised Order states that audited regulatory account statements are the basis for accepting 2006–08 cost and revenues. Therefore, the AER:

- only accepted adjustments to 2006–08 costs and revenues that were consistent with UED's audited regulatory accounting statements. With respect to the initial charges application, this resulted in minor adjustments to UED's capital expenditure, which in turn affected the building block revenues associated with capital expenditure and depreciation

- did not accept the revisions proposed by the other DNSPs and has instead used the information as it appears in their regulatory accounting statements.

The largest impacts of only accepting regulatory accounting statements occur for JEN, in relation to capital expenditure in 2008 (an increase of $8.4 million), which in turn affected the metering asset base and the depreciation building block ($2.1 million over 2009–11). The impacts on other DNSPs were relatively minor.

3.2.2 Metering asset base

The metering asset base is required to calculate the return on capital and depreciation building blocks and the revised Order specifies how it is to be calculated at the beginning of each year.

Clause 5.D2 of the revised Order provides that in determining the initial charges for 2010 and 2011 the opening value of the metering asset base at 1 January 2009 for each DNSP must be calculated as follows:

$$\text{Opening Metering Asset Base}_{SD} = \text{Opening Metering Asset Base}_{2006} + \text{Capital Expenditure}_{2006\text{-}SD} — \text{Depreciation}_{2006\text{-}SD} — \text{Disposals}_{2006\text{-}SD}$$

[207] SPA, email to the AER, 16 June 2009.
[208] UED, 2008 Regulatory Accounting Statement, 30 June 2009.

Where:

Opening Metering Asset Base$_{SD}$ is the opening value of the metering asset base at 1 January 2009.

Opening Metering Asset Base$_{2006}$ is the opening regulatory asset base set out in Table 13.35 of Volume 1 of the current price determination. (This table shows that the value of the opening metering asset base for each DNSP for 2006 was zero)

Capital Expenditure$_{2006\text{-}SD}$ is the actual capital expenditure between 1 January 2006 and 31 December 2008 inclusive

Depreciation$_{2006\text{-}SD}$ is the actual depreciation between 1 January 2006 and 31 December 2008 inclusive

Disposals$_{2006\text{-}SD}$ is actual disposals between 1 January 2006 and 31 December 2008 inclusive

The opening metering asset base at 1 January 2009 proposed by all DNSPs is provided in Tables 3.6 to 3.10. Based on expenditure data from the DNSPs' submitted budgets for 2009–11, the roll forward of the metering asset base from 2009 for all DNSPs is also shown. This represents the forecast of the metering asset base for the 2009–11 period.

'Capital expenditure' refers to that actually incurred from 2006–08 in relation to the interval meter roll out (IMRO). 'Pre start date AMI capital expenditure' refers to AMI capital expenditures incurred during 2006–08, which are also rolled into the metering asset base from 2009.

Table 3.6: CP proposed metering asset base, 2006–11 ($'000s, real 2008)

	2006	2007	2008	2009	2010	2011
Opening metering asset base	0	4,481	6,255	7,881	36,155	70,485
Pre start date AMI capital costs	N/A	N/A	N/A	9,436	N/A	N/A
Capital expenditure	4,683	2,259	2,276	23,683	42,829	46,976
Depreciation	202	485	650	4,845	8,499	12,132
Disposals	0	0	0	0	0	0
Closing metering asset base	4,481	6,255	7,881	36,155	70,485	105,328

Source: CP, *Advanced Metering Infrastructure Charges Application 2010-11*, 1 June 2009.
Note: Capital expenditure is net of customer contributions.
Pre-start AMI capital costs include a WACC adjustment for the time value of money.

Table 3.7: JEN proposed metering asset base, 2006–11 ($'000s, real 2008)

	2006	2007	2008	2009	2010	2011
Opening metering asset base	0	5,507	9,280	13,076	75,934	92,980
Pre start date AMI capital costs	N/A	N/A	N/A	17,452	N/A	N/A
Capital expenditure	5,592	4,000	4,136	54,607	31,940	34,044
Depreciation	86	227	340	9,201	14,895	17,997
Disposals	0	0	0	0	0	0
Closing metering asset base	5,507	9,280	13,076	75,934	92,980	109,027

Source: JEN *AMI Initial Charges Application 2010-2011,1 June 2009,* incorporating further information provided on 7 July 2009.
Note: Capital expenditure is net of customer contributions.
Pre-start AMI capital costs include a WACC adjustment for the time value of money.

Table 3.8: PC proposed metering asset base, 2006–11 ($'000s, real 2008)

	2006	2007	2008	2009	2010	2011
Opening metering asset base	0	7,562	13,951	18,070	65,457	147,466
Pre start date AMI capital costs	N/A	N/A	N/A	15,301	N/A	N/A
Capital expenditure	7,903	7,382	5,648	41,232	98,460	117,520
Depreciation	340	993	1,530	9,146	16,451	25,107
Disposals	0	0	0	0	0	0
Closing metering asset base	7,562	13,951	18,070	65,457	147,466	239,879

Source: PC, *Advanced Metering Infrastructure Charges Application 2010-11*, 1 June 2009.
Note: Capital expenditure is net of customer contributions.
Pre-start AMI capital costs include a WACC adjustment for the time value of money.

Table 3.9: SPA proposed metering asset base, 2006–11 ($'000s, real 2008)

	2006	2007	2008	2009	2010	2011
Opening metering asset base	0	7,584	13,698	21,039	91,962	123,911
Pre start date AMI capital costs	N/A	N/A	N/A	14,520	N/A	N/A
Capital expenditure	7,967	7,109	8,847	68,472	51,837	105,120
Depreciation	383	995	1,506	12,069	19,887	26,411
Disposals	0	0	0	0	0	0
Closing metering asset base	7,584	13,698	21,039	91,962	123,911	202,620

Source: SPA, *Advanced Metering Infrastructure Initial Charges Application 1 June 2009*, incorporating further information provided on 29 June 2009.
Note: Capital expenditure is net of customer contributions.
Pre-start AMI capital costs include a WACC adjustment for the time value of money.

Table 3.10: UED proposed metering asset base, 2006–11 ($'000s, real 2008)

	2006	2007	2008	2009	2010	2011
Opening metering asset base	0	6,367	11,230	14,372	101,643	132,503
Pre start date AMI capital costs	N/A	N/A	N/A	35,066	N/A	N/A
Capital expenditure	6,733	5,890	4,697	65,403	51,373	69,780
Depreciation	366	1,026	1,555	13,198	20,513	25,685
Disposals	0	0	0	0	0	0
Closing metering asset base	6,367	11,230	14,372	101,643	132,503	176,598

Source: UED, *AMI Initial Charges Application,* 1 June 2009.
Note: Capital expenditure is net of customer contributions.
Pre-start AMI capital costs include a WACC adjustment for the time value of money.

As noted in section 3.2.1 above, for the years 2006, 2007 and 2008, the AER used data from the DNSPs' regulatory accounting statements as required by the revised Order rather than data provided in their initial charges applications.

Proposed disposal values (nil for each business for all years) were accepted by the AER.

The AER's draft determination on the DNSPs' initial budget applications has also affected the capital expenditure for 2009–11 to be rolled into the metering asset base (see section 3.2.4 below). The AER draft determination on the metering asset base for all DNSPs over the period 2006–11 reflects these changes and is shown in Tables 3.11 to 3.15 below.

Table 3.11: AER draft determination on CP's metering asset base, 2006–11 ($'000s, real 2008)

	2006	2007	2008	2009	2010	2011
Opening metering asset base	0	3,754	5,578	7,254	35,654	70,109
Pre start date AMI capital costs	N/A	N/A	N/A	9,436	N/A	N/A
Capital expenditure	3,931	2,259	2,276	23,683	42,829	46,976
Depreciation	177	435	599	4,719	8,374	12,007
Disposals	0	0	0	0	0	0
Closing metering asset base	3,754	5,578	7,254	35,654	70,109	105,077

Note: Capital expenditure is net of customer contributions.
Pre-start AMI capital costs include a WACC adjustment for the time value of money.

Table 3.12: AER draft determination on JEN's metering asset base, 2006–11 ($'000s, real 2008)

	2006	2007	2008	2009	2010	2011
Opening metering asset base	0	5,507	9,280	9,570	73,129	90,876
Pre start date AMI capital costs	N/A	N/A	N/A	17,452	N/A	N/A
Capital expenditure	5,592	4,000	580	54,607	31,940	34,044
Depreciation	86	227	290	8,500	14,193	17,296
Disposals	0	0	0	0	0	0
Closing metering asset base	5,507	9,280	9,570	73,129	90,876	107,625

Note: Capital expenditure is net of customer contributions.
Pre-start AMI capital costs include a WACC adjustment for the time value of money.

Table 3.13: AER draft determination on PC's metering asset base, 2006–11 ($'000s, real 2008)

	2006	2007	2008	2009	2010	2011
Opening metering asset base	0	7,562	13,951	18,070	65,457	147,466
Pre start date AMI capital costs	N/A	N/A	N/A	15,301	N/A	N/A
Capital expenditure	7,903	7,382	5,648	41,232	98,460	117,520
Depreciation	340	993	1,530	9,146	16,451	25,107
Disposals	0	0	0	0	0	0
Closing metering asset base	7,562	13,951	18,070	65,457	147,466	239,879

Note: Capital expenditure is net of customer contributions.
Pre-start AMI capital costs include a WACC adjustment for the time value of money.

Table 3.14: AER draft determination on SPA's metering asset base, 2006–11 ($'000s, real 2008)

	2006	2007	2008	2009	2010	2011
Opening metering asset base	0	7,584	13,698	21,039	91,962	122,388
Pre start date AMI capital costs	N/A	N/A	N/A	14,520	N/A	N/A
Capital expenditure	7,967	7,109	8,847	68,472	50,261	100,602
Depreciation	383	995	1,506	12,069	19,835	26,155
Disposals	0	0	0	0	0	0
Closing metering asset base	7,584	13,698	21,039	91,962	122,388	196,835

Note: Capital expenditure is net of customer contributions.
Pre-start AMI capital costs include a WACC adjustment for the time value of money.

Table 3.15: AER draft determination on UED's metering assets base, 2006–11 ($'000s, real 2008)

	2006	2007	2008	2009	2010	2011
Opening metering asset base	0	6,367	11,230	14,312	101,595	132,467
Pre start date AMI capital costs	N/A	N/A	N/A	35,066	N/A	N/A
Capital expenditure	6,733	5,890	4,633	65,403	51,373	69,780
Depreciation	366	1,026	1,552	13,186	20,501	25,673
Disposals	0	0	0	0	0	0
Closing metering asset base	6,367	11,230	14,312	101,595	132,467	176,574

Note: Capital expenditure is net of customer contributions.
Pre-start AMI capital costs include a WACC adjustment for the time value of money.

3.2.3 Maintenance and operating expenditure for 2009–11

In their initial charges applications the DNSPs proposed maintenance and operating expenditure for 2009–11 as per their submitted budgets. These amounts are shown in Table 3.16.

Table 3.16: DNSPs' proposed maintenance and operation expenditure, ($'000s, real 2008)

	2009	2010	2011
CP	13,988	10,089	10,358
JEN	3,921	8,738	13,464
PC	29,505	20,588	22,708
SPA	29,874	28,997	27,501
UED	7,253	20,766	19,980

Sources: CP, *Advanced Metering Infrastructure Charges Application 2010-11*, 1 June 2009; JEN, *AMI Initial Charges Application 2010-2011*, 1 June 2009 incorporating further information provided on 7 July 2009; PC, *Advanced Metering Infrastructure Charges Application 2010-11*, 1 June 2009; SPA, *Advanced Metering Infrastructure Initial Charges Application 1 June 2009*, incorporating further information provided on 29 June 2009; UED, *AMI Initial Charges Application*, 1 June 2009.
Note: Reflects further information provided by SPA on 29 June 2009 and by JEN on 7 July 2009.

The AER's assessment of the DNSPs' maintenance and operating expenditure as part of their initial budget applications is outlined in section 2. The outcome of this assessment was to remove expenditure associated with customer response trials as proposed by CP, PC and SPA.[209] The AER also did not accept UED's proposed costs

[209] JEN and UED did not propose expenditure for customer response trials.

relating to equity raising and self insurance. Table 3.17 shows the AER's draft determination for the DNSPs' maintenance and operating expenditure.

Table 3.17: AER draft determination—DNSPs' maintenance and operation expenditure, ($'000s, real 2008)

	2009	2010	2011
CP	13,555	9,897	10,225
JEN	3,921	8,738	13,464
PC	28,495	20,142	22,397
SPA	29,002	28,612	27,232
UED	7,253	13,498	19,780

3.2.4 Capital expenditure 2009–11

The capital expenditure for 2009–11 forming part of the DNSPs' initial charges applications was the same as that proposed in their submitted budgets, and is listed in Table 3.16 below.

Table 3.18: DNSPs' proposed capital expenditure, ($'000s, real 2008)

	2009	2010	2011
CP	23,683	42,829	46,976
JEN	54,607	31,940	34,044
PC	41,232	98,460	117,520
SPA	68,472	51,837	105,120
UED	65,403	51,373	69,780

Source: CP, *Advanced Metering Infrastructure Charges Application 2010-11*, 1 June 2009; JEN, *AMI Initial Charges Application 2010-2011*, 1 June 2009 incorporating further information provided on 7 July 2009; PC, *Advanced Metering Infrastructure Charges Application 2010-11*, 1 June 2009; SPA, *Advanced Metering Infrastructure Initial Charges Application 1 June 2009*, incorporating further information provided on 29 June 2009; UED, *AMI Initial Charges Application*, 1 June 2009.

Note: Reflects further information provided by SPA on 29 June 2009 and by JEN on 7 July 2009. SPA advised that its 2009 metering capital expenditure had decreased from $10.1 million in its charges application to $8.8 million. Capital expenditure is net of customer contributions.

The AER's assessment of the capital expenditure proposed for 2009–11 is contained in section 2. The outcome of this assessment was to not accept SPA's proposed direct load control expenditure of $6.1 million as being out of scope and not justified on net benefit grounds. The AER accepted the proposed capital expenditure of CP, PC and JEN for 2009–11.

Table 3.19 summarises the AER's draft determination for the DNSPs' total capital expenditure over 2009–11.

Table 3.19: AER draft determination—total capital expenditure ($'000s, real 2008)

	2009	2010	2011
CP	23,683	42,829	46,976
JEN	54,607	31,940	34,044
PC	41,232	98,460	117,520
SPA	68,472	50,261	100,602
UED	65,403	51,373	69,780

Note: Capital expenditure is net of customer contributions.

3.2.5 Return on capital — weighted average cost of capital

Clauses 4.1(h) and 4.1(i) of the revised Order require the AER to provide a return on capital, using a WACC, in accordance with using the formula set out in clause 6.5.2(b) of the National Electricity Rules. That formula is:

$$WACC = k_e \quad + k_d$$

where:

$\mathbf{k_e}$ is the return on equity (determined using the Capital Asset Pricing Model) and is calculated as:

$$r_f + \beta_e \times MRP$$

where:

r_f is the nominal risk free rate for the regulatory control period determined in accordance with paragraph (c);

β_e is the equity beta; and

MRP is the market risk premium;

$\mathbf{k_d}$ is the return on debt and is calculated as:

$$r_f + DRP$$

where:

DRP is the debt risk premium for the *regulatory control period* determined in accordance with paragraph (e);

E/V is the value of equity as a proportion of the value of equity and debt, which is 1 - D/V; and

D/V is the value of debt as a proportion of the value of equity and debt.

The initial AMI WACC period

For the purposes of this draft determination the revised Order in turn requires that for the initial AMI WACC period:

- the equity beta is 1.00
- the debt to equity ratio is 60:40
- the market risk premium is 6.00 per cent

that is, in accordance with the EDPR and the market observables, being:

- the nominal risk-free rate of 4.63 per cent
- the debt risk premium of 3.09 per cent

are to be measured in accordance with the AER's statement of regulatory intern (SORI) over the last 10 business days of November 2008 and the first 5 days of December 2008.

The revised Order says the initial AMI WACC period is from 1 January 2009 to 31 December 2013.

The revised Order specifies debt raising costs for the initial AMI WACC period are 12.5 basis points and that equity raising costs are to be recovered as a maintenance and operating expense.

The values proposed by the DNSPs for the equity beta, the market risk premium, the debt/equity ratio, the nominal risk free rate and debt raising costs are in accordance with the requirements of the revised Order described above. The AER has accepted these proposed values. These values shown in Table 3.20 below.

Debt risk premium

Clause 6.5.2(e) of the NER (which is referred to in the revised Order's definition of 'WACC') requires the debt risk premium to be calculated from Commonwealth Government bonds with a credit rating of BBB+ and term to maturity of 10 years. The AER's SORI further determined the credit rating to apply is BBB+. The DNSPs jointly proposed a debt risk premium of 4.84 per cent, based on the Tabcorp 5 year BBB rated bond issue of April 2009.

The AER notes that the Tabcorp bond:

- was issued on 1 April 2009, four months after the period during which the revised Order requires the debt risk premium to be determined

- is a five year bond, whereas the revised Order requires the benchmark corporate bond rate to have a maturity of 10 years

- has a credit rating from Standard and Poors of BBB+, as required by the revised Order

- is a variable rate bond, whereas the debt risk premium is to be measured by reference to Commonwealth Government bonds, which are fixed coupon bonds.

The AER acknowledges that the DNSPs have recognised these discrepancies between the Tabcorp bond and the requirements of the revised Order and have proposed adjustments to the debt risk premium in order to address any inconsistencies. However, the AER considers that, where possible, the debt risk premium should be calculated during the averaging period from a benchmark corporate bond rate that meets the requirements of the revised Order should not be subsequently adjusted. Furthermore, the AER considers that the benchmark corporate bond rate should be based on the observed yields of all bonds suitable for inclusion rather than a single bond.

The AER notes the DNSPs proposal that the benchmark Australian corporate bond rate should be consistent, in particular, with the yields of any new issues. The Victorian DNSPs also note that the Tabcorp bond is the only non-bank corporate bond to be issued since October 2007[210]. The AER, however, does not agree that particular focus should be placed on new bond issues. In accordance with 6.5.2(e) of the NER, the debt risk premium should be the:

> … margin between the annualised nominal risk free rate and the observed annualised Australian benchmark corporate bond rate for corporate bonds which have a maturity equal to that used to derive the nominal risk free rate and a credit rating from a recognised credit rating agency.

Clause 6.5.2(e) of the NER makes no distinction between new bond issues and existing bonds. Rather, the important characteristics of the benchmark corporate bond rate are the term to maturity and credit rating of the bond.[211] Consequently, when determining the benchmark corporate bond rate, whether a bond is a new 10 year bond or a 15 year bond with 10 years left to maturity should be irrelevant.

In previous regulatory determinations the AER has used the fair yield curves published by Bloomberg as the observed benchmark corporate bond rate. However, Bloomberg has ceased publishing a 10 year BBB fair yield due to the lack of long dated BBB rated bonds in the market. Consequently, in recent determinations the AER has used a benchmark corporate bond rate calculated from the Bloomberg 8 year BBB fair yield (being the longest dated BBB fair yield published by Bloomberg) plus the spread between the eight and 10 year A rated fair yield.

The AER notes, however, that the DNSPs have expressed concern that the fair yield values published by Bloomberg appear to be underpricing yields in the Australia

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[210] JEN, CP, PC, SPA, and UED, *Debt risk premium for use in the initial AMI WACC period*, 1 June 2009, p. 23.

[211] AER, *The Statement of regulatory intent on the revised WACC parameters* (released in May 2009) requires that the term to maturity be 10 years and credit rating BBB+.

corporate bond market[212]. The AER notes the analysis provided by the DNSPs shows the Bloomberg BBB fair yield curve to be below:

- the CBASpectrum BBB+ fair yield curve
- the yield on BBB corporate bonds as published by the RBA
- US BBB/BBB+ corporate bonds swapped to Australian dollars
- selected bonds issued in the United States by Australian companies swapped to Australian dollars
- the Tabcorp bond issued in April 2009.

The AER considers that it is not unexpected that the fair yields published by Bloomberg were lower than the yields published by CBASpectrum and the RBA because Bloomberg excludes outlier bonds in the derivation of its fair yield values. The AER understands that CBASpectrum and the RBA did not exclude outliers in the calculation of their yields. During times of significant uncertainty and volatility, the market perceived credit rating of bonds is continually changing and a bond's credit rating may no longer reflect the market perceived credit rating. As a result of the global financial crisis many corporate bonds were no longer regarded by markets as being of investment grade, and pricing and yields changed to reflect this. During the averaging period, some bonds were reporting significantly higher yields indicating that investors no longer considered those bonds to be of investment grade. The AER considers that these bonds should not be included in any sample of bonds used to estimate an efficient benchmark corporate bond rate.

The AER does not consider it appropriate to compare the Bloomberg Australian fair yields against the yields of international bonds. Market conditions will vary between the Australian bond market and the US bond market and it is expected that deviations between the two will occur, even after the bonds are swapped to Australian dollars.

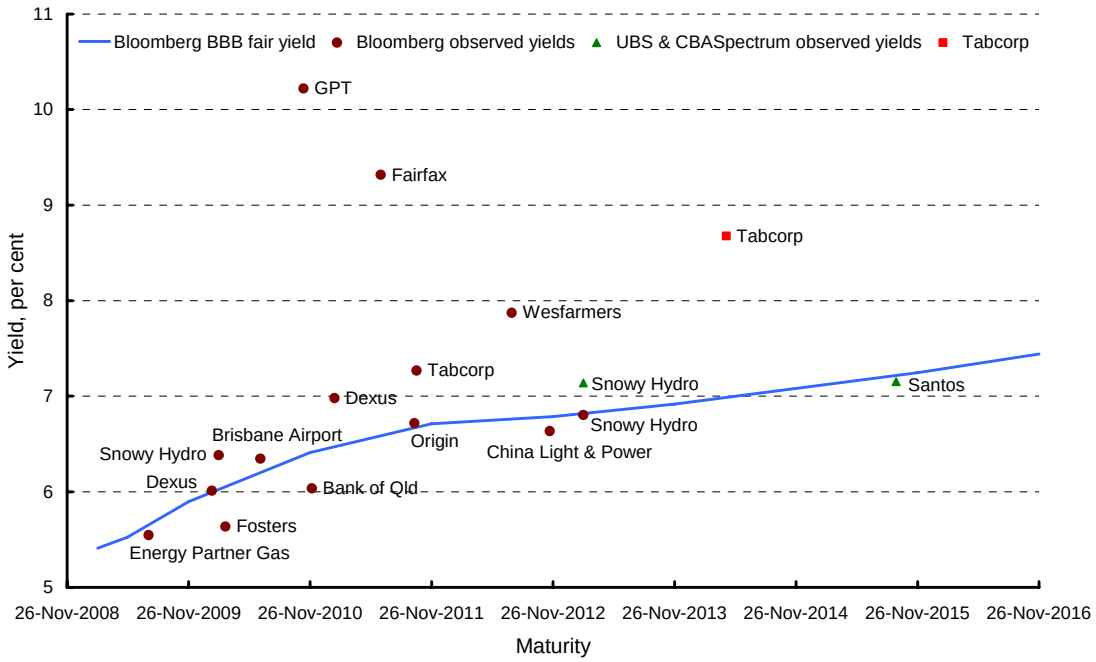
The AER considers that the relevant test of whether the Bloomberg fair yield curve is fit for purpose is how it compares to the observable yields of corporate bonds with a fixed coupon rate issued in the Australian market. The AER notes that the DNSPs did undertake this analysis but the AER considers that the conclusions that can be drawn from the analysis presented are limited. In particular, the analysis presented is only for one day of the averaging period, being 17 November 2008. The AER considers that a visual analysis of a single day's data is not sufficient to conclude that Bloomberg's fair yield curves are not suitable for determining the observed Australian benchmark corporate bond rate.

As noted by the DNSPs, Bloomberg published little data for the three longest dated bonds during the averaging period. However, the AER found that Bloomberg did publish a yield for the Snowy Hydro bond (maturing 25 February 2013) on two days

[212] JEN, CP, PC, SPA and UED, op. cit., pp. 10–17.

during the averaging period, namely, 20 November and 1 December 2008[213]. The average yield on these dates was 6.80 per cent, marginally less than the average of the interpolated Bloomberg BBB fair yield of 6.82 per cent over the averaging period, as shown in Figure 2.

Figure 2: Average yields over the period 17 November to 5 December 2008



Source: Bloomberg, UBS, CBASpectrum and AER analysis

The AER also compared the Bloomberg fair yield for the Snowy Hydro, GPT and Santos bonds with yields published by UBS and CBA Spectrum. The average yield of the Snowy Hydro bond over the averaging period from these two sources was 7.14 per cent.

The average yield of the GPT bond maturing on 22 August 2013, as published by UBS and CBASpectrum, was 13.8 per cent during the averaging period. Thus the available market evidence suggests that the market considered the risk of the GPT bond to be greater than its BBB S&P credit alone would suggest. The AER considers it appropriate for the GPT bond to be treated as an outlier and excluded from the sample of bond used to estimate the benchmark Australian corporate bond rate.

For the longest dated BBB bond, being the Santos bond maturing on 23 September 2015, the average yield published by UBS and CBASpectrum during the averaging period was 7.15 per cent. By comparison the average interpolated Bloomberg BBB fair yield over the averaging period was 7.22 per cent.

The AER considers that the available market evidence for the Snowy Hydro and Santos bonds, both of which are in the energy sector and have an S&P credit rating of BBB+, is consistent with the BBB fair yield curve published by Bloomberg.

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[213] The AER notes that the Victorian DNSPs, in their submission *Debt risk premium fur use in the initial AMI WACC period*, (page 35) only included the yield published for 20 November 2008. The reason for this discrepancy is unclear.

Consequently, having considered the observed yields over the entire averaging period, and the yields published by other data sources, the AER found no evidence that the Bloomberg BBB fair yield curve underpriced yields observable in the Australian corporate bond market.

The AER does not consider the analysis provided by the DNSPs demonstrates that the fair yield curves published by Bloomberg during the averaging period are not suitable for determining the debt risk premium.

Having considered all these factors the AER considers that it is not appropriate to use the Tabcorp bond issued in April 2009 for the benchmark corporate bond rate since it is only a single bond and it does not meet the requirements of the revised Order. Furthermore, the AER considers the fair yield curves published by Bloomberg are suitable for determining the debt risk premium. Given that it draws on a wider pool of market data, and not just a single bond, and it requires fewer adjustments, the AER considers it appropriate that Bloomberg fair yield curves be used as the benchmark corporate bond rate. Specifically, the benchmark corporate bond rate should be calculated over the period from 17 November 2008 to 5 December 2008 (as specified in the revised Order), inclusive, from the eight year BBB rated Bloomberg fair yield plus the spread between the eight and 10 year A rated Bloomberg fair yield.

AER draft determination - initial AMI WACC period

Accordingly, the AER draft determination is that the WACC parameters for the initial AMI WACC period of 1 January 2009 to 31 December 2013 are those in Table 3.20 below, together with the DNSPs' proposed WACC parameters.

Table 3.20: AER draft determination on WACC parameters for AMI period 1 January 2009 to 31 December 2013, per cent.

WACC Parameters	DNSPs' Proposals	Draft determination
Gearing (debt to equity ratio)	60	60
10 year risk free rate (nominal)	4.63	4.63
Market risk premium	6.00	6.00
Equity beta	1.00	1.00
Cost of equity	10.63	10.63
Cost of Debt (BBB+)	9.60	7.85
Debt risk premium	4.84	3.09
Debt raising cost	0.125	0.125
Nominal Vanilla WACC	10.01	8.96

Source: JEN, CP, PC, SPA, and UED, *Debt risk premium for use in the initial AMI WACC period*, 1 June 2009.

The AER has determined revenue requirements and charges using the WACC derived from the parameters in Table 3.20, rather than those proposed by the DNSPs in their charges applications. Note that the WACC used for making the time value adjustments to cost and revenue offsets for 2006-08 (discussed in section 3.2.8 below) is determined as per the EDPR 2006–10.

3.2.6 Depreciation

Regulatory depreciation is a component of the revenue requirement for regulated services and represents the annual rate at which accumulated capital is returned to investors. It is a function of the metering asset base and the period over which the assets are depreciated.

The revised Order stipulates that actual depreciation[214] should be used for the period 1 January 2006 to 31 December 2008.

Clause 4.1(g) of the revised Order also stipulates the asset life for remotely read meters and measurement transformers as 15 years and for telecommunications and information technology assets as 7 years over the 2009–11 period. The AER's framework and approach, consistent with revised Order, also permits DNSPs to accelerate depreciation of accumulation meters and manually read interval meters over 2010-13, such that their value is zero by 31 December 2013.

The DNSPs' charges adopted the depreciation methodology and lives as set out above, using straight line depreciation for AMI meters and accelerated depreciation for accumulation and manually read interval meters.

[214] This is depreciation associated with actual capital expenditure for these years, as per data sourced from the DNSPs' regulatory accounts.

AER has accepted the DNSPs' proposed depreciation methodology and standard lives. The AER notes, however, that the values of the depreciation building block have changed as a result of the AER's determination on other building block components and related inputs as noted elsewhere in this section.

3.2.7 Benchmark allowance for corporate income tax

Clause 4.1(b)(iv) of revised order provides that a benchmark allowance for corporate income tax is one of the required building blocks. Clause 4.1(f) requires the benchmarking of parameters used in the calculation of tax liabilities, including tax depreciation methods and rates, the debt to equity ratio, the return on debt and the value of imputation credits.

In accordance with clause 4.1(e)(ii), the AER carried forward the tax losses of the DNSPs associated with metering during 2006–08.

For the purposes of clause 4.1(f), the AER benchmarked declining balance depreciation as the tax depreciation method, with the rate set at 37.50 per cent for meters and transformers where unit cost is less than $1000 and 6 per cent for meters and transformers where unit cost is greater than $1000, 40 per cent for IT assets, 21.43 per cent for communications and 17.65 per cent for other.[215] The value of debt as a proportion of equity and debt was 60 per cent, the nominal cost of debt was 10.39 per cent in 2009 and 7.84 per cent for 2010 and 2011. The value of imputation credits was 0.65.

The AER included tax calculations in the charges model it sent to the DNSPs. In their 1 June 2009 charges applications, the DNSPs did not amend these calculations. The AER therefore has accepted the methodology and tax depreciation rates proposed by the DNSPs in their charges applications. The value of the tax liability building block proposed by each DNSP was zero and remains unchanged as a result of the AER's draft determination given the persistence of tax losses.

3.2.8 Offset of costs and revenues 2006–08

Clauses 5D.4(a) to 5D.4(g) of the revised Order require the AER to determine additional expenditure relating to the prescribed metering offset, DUOS tax liability, efficiency carryover for 2006–08 and pre-start date AMI costs. These offset items are summed and then converted into January 2009 dollars using a discount rate equal to the WACC as provided for in the EDPR 2006–10 (adjusted for inflation) and treated as a "total offset" building block item.

In their submissions, the DNSPs proposed net offsets that are outlined in Tables 3.21 to 3.25.

In undertaking an analysis of the prescribed meting offset, the AER undertook a review of regulatory accounts for 2006, 2007 and 2008 for each DNSP. From this analysis, subsequent sections discuss each revenue offset item in turn.

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[215] These rates and the methodology are consistent with ESCV, *Electricity Distribution Price Review 2006–10—Final Decision*, October 2006.

Table 3.21: CP proposed offset of costs and revenues 2006–08, ($'000s, nominal)

	2006	2007	2008	2009	2010	2011	2012	2013
Prescribed metering offset	-987	-3,446	-5,484	N/A	N/A	N/A	N/A	N/A
Duos tax offset	0	449	822	775	525	N/A	N/A	N/A
Efficiency carryover	291	1,385	1,122	1,178	1,208	1,239	921	-336
AMI O&M costs	430	3,375	4,430	N/A	N/A	N/A	N/A	N/A
Total	-266	1,764	889	1,953	1,733	1,239	921	-336
WACC time value of money adjustment factor	1.34	1.21	1.13	1.00	0.91	0.83	0.75	0.68
Total Offset	N/A	N/A	N/A	**7,802**	N/A	N/A	N/A	N/A

Source: CP, *Advanced Metering Infrastructure Charges Application 2010-11*, 1 June 2009.
N/A = Not applicable.

Table 3.22: JEN proposed offset of costs and revenues 2006–08, ($'000s, nominal)

	2006	2007	2008	2009	2010	2011	2012	2013
Prescribed metering offset	-967	-508	-1,048	N/A	N/A	N/A	N/A	N/A
Duos tax offset	118	455	531	558	418	N/A	N/A	N/A
Efficiency carryover	1,665	1,563	1,429	1,500	1,538	1,577	-379	-190
AMI O&M costs	0	0	0	N/A	N/A	N/A	N/A	N/A
Total	816	1,510	912	2,058	1,956	1,577	-379	-190
WACC time value of money adjustment factor	1.34	1.21	1.13	1.00	0.91	0.83	0.75	0.68
Total Offset	N/A	N/A	N/A	**8,677**	N/A	N/A	N/A	N/A

Source: JEN, *AMI Initial Charges Application 2010-2011*, 1 June 2009 incorporating further information provided on 7 July 2009.
N/A = Not applicable.

Table 3.23: PC proposed offset of costs and revenues 2006–08, ($'000s, nominal)

	2006	2007	2008	2009	2010	2011	2012	2013
Prescribed metering offset	-6,619	-9,927	-14,653	N/A	N/A	N/A	N/A	N/A
Duos tax offset	0	832	1,918	2,486	2,271	N/A	N/A	N/A
Efficiency carryover	5,125	5,652	5,783	6,071	6,226	6,386	404	30
AMI O&M costs	1,468	5,857	9,571	N/A	N/A	N/A	N/A	N/A
Total	-25	2,414	2,619	8,556	8,497	6,386	404	30
WACC time value of money adjustment factor	1.34	1.21	1.13	1.00	0.91	0.83	0.75	0.68
Total Offset	N/A	N/A	N/A	27,728	N/A	N/A	N/A	N/A

Source: PC, *Advanced Metering Infrastructure Charges Application 2010-11*, 1 June 2009,
N/A = Not applicable.

Table 3.24: SPA proposed offset of costs and revenues 2006–08, ($'000s, nominal)

	2006	**2007**	**2008**	**2009**	**2010**	**2011**	**212**	**2013**
Prescribed metering offset	-6,672	-5,540	-13,622	N/A	N/A	N/A	N/A	N/A
Duos tax offset	350	445	1,172	1,821	1,773	N/A	N/A	N/A
Efficiency carryover	1,529	1,662	290	304	312	320	-1,505	-1,630
AMI O&M costs	1,028	3,360	8,008	N/A	N/A	N/A	N/A	N/A
Total	-3,765	-72	-4,151	2,125	2,085	320	-1,505	-1,630
WACC time value of money adjustment	1.34	1.21	1.13	1.00	0.91	0.83	0.75	0.68

factor								
Total Offset	N/A	N/A	N/A	**-7,755**	N/A	N/A	N/A	N/A

Source: SPA, *Advanced Metering Infrastructure Initial Charges Application 1 June 2009*, incorporating further information provided on 29 June 2009.
N/A = Not applicable.

Table 3.25: UED proposed offset of costs and revenues 2006–08, ($'000s, nominal)

	2006	**2007**	**2008**	**2009**	**2010**	**2011**	**212**	**2013**
Prescribed metering offset	-2,559	-3,157	-4,252	N/A	N/A	N/A	N/A	N/A
Duos tax offset	0	268	986	1,527	1,433	N/A	N/A	N/A
Efficiency carryover	-217	242	76	79	81	84	346	-198
AMI O&M costs	0	990	1,010	N/A	N/A	N/A	N/A	N/A
Total	-2,777	-1,656	-2,180	1,607	1,515	84	346	-198
WACC time value of money adjustment factor	1.34	1.21	1.13	1.00	0.91	0.83	0.75	0.68
Total Offset	N/A	N/A	N/A	-5,003	N/A	N/A	N/A	N/A

Source: UED, *AMI Initial Charges Application*, 1 June 2009.
N/A = Not applicable.

3.2.8.1 Prescribed metering offset

Clause 5D.4(a) requires the AER to determine additional expenditure included in the building block costs incurred for prescribed metering services under the Current Price Determination from 1 January 2006 to the start date.

> the building block costs incurred offset by the revenue earned by a DNSP in respect of prescribed metering services (not being metering services to unmetered supply points to which clause 6 applies) under the Current Price Determination during the period from 1 January 2006 until the Start Date. For the purposes of this clause 5D.4(a), the weighted average cost of capital in the Current Price Determination shall be applied, adjusted for inflation.

This means that the DNSP's revenue requirement will be amended by an amount which reflects any over or under-recovery of revenue in relation to metering services provided between 1 January 2006 and 1 January 2009.

The AER has offset movements in provisions[216] against metering maintenance and operating expenditure. In regards to provisions for 2006–08, the AER derived a different figure for movement in provisions than that in SPA's charges application. Consistent with SPA's general approach to provisions, the AER reallocated provisions to indirect overheads. The other DNSPs did not have any provisions allocated to metering.

In respect of regulatory accounts, as discussed earlier, changes to regulatory accounts proposed by CP, JEN and PC were not accepted by the AER, on the grounds that these proposed changes were not audited accounts bur rather arbitrary distributor allocations.

Following the AER's inquiries (as noted above) UED submitted a revised version of audited regulatory accounting statements to the AER in June 2009 which the AER used in its analysis.

In respect of variations to prescribed metering revenues, all distributors stated that their charges applications included the costs and revenues for metering services to unmetered supplies.[217] UED stated that unmetered supplies were part of its charges application.[218] However analysis undertaken demonstrated that this was not the case. All other DNSPs' proposals included costs and revenues for unmetered supplies. The AER considers these are legitimate costs in accordance with clause 5D.4(a) of the revised Order and have therefore been included.

3.2.8.2 DUOS tax liability

Clause 5D.4(b) of the revised Order require the AER to make an adjustment for

> the amount by which the 'building block taxation liability was reduced as a result of the consolidation undertaken by the Commission of the taxation for both 'regulated by price cap and metering' for the period 1 January 2006 to 31 December 2010 as referred to at page 399 of the current Price Determination (Volume 1).

The charges model sent to the DNSPs calculated the DUOS tax liability based on benchmark assumptions contained in the EDPR 2006–10 as noted in clause 5D.4(b). The DNSPs did not amend these calculations or assumptions when proposing their AMI charges on 1 June 2009.

The AER has therefore accepted the DUOS tax liability proposed by each DNSP, which are consistent with the revised Order.

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[216] Provisions are an aspect of accrual accounting and are taken by distributors in order to recognise a future liability now. Examples include employee entitlements, environmental obligations and doubtful debts. They pay liabilities from the provisions accounts, increase the balance of the provision accounts through a charge to profit and make other adjustments in the provisions accounts (source: ESCV, op. cit., *Volume 1—Statement of Purpose and Reasons*, p. 167).

[217] Unmetered supplies refers to street lighting, watchman's lights and in some cases to traffic lights. Typically, the energy consumed by these applications is not metered but is rather based on published load table estimates.

[218] UED, *UED AMI Data 2006-08 – AER Questions*, email to AER, 16 June 2009.

3.2.8.3 Efficiency carryover arising from the current price determination

Clause 5D.4(c) of the revised Order requires the AER to consider the Efficiency Carry Over (ECM) from the ESCV's manually read IMRO that was suspended in 2006. The revised Order requires the AER to reflect the ECM amounts when determining charges for 2010 and 2011. This requirement will be met by summing the efficiency carryover amounts for 2009 to 2013, adjusted to reflect the time value of money, and incorporating this amount in 2010 charges.

As outlined in the framework and approach paper, the AER will be calculating ECM amounts for actual expenditure from 2006 to 2008 consistent with the approach in the current price determination, while reflecting the requirements of the revised Order as described in this draft determination.

The AER is required by the revised Order to use historical data from audited regulatory accounts for calculating the ECM. However, these accounts are reported at the aggregate level only and not at the disaggregated level required to effectively assess the ECM. The framework and approach paper noted that it was incumbent upon the regulator to scrutinise the DNSPs' reported actual expenditure from 2006 to 2008 on ECM items in order to ensure that the figures provided are accurate. It stated that the regulator will need to be provided with evidence from the DNSPs that all the direct expenditure on metering data services, meter maintenance and meter replacement costs have been reported.

Overall the AER notes that DNSPs have an incentive to under report costs relative to benchmarks to maximise their ECM. Furthermore, the appropriate calculation of ECM amounts requires consistency in the cost allocation approach used in the development of benchmark expenditures and that used in the subsequent reporting of actual data against these benchmarks.

The AER considered all aspects of the efficiency carryover costs components proposed by the DNSPs. However only amounts in relation to the following types of metering operating expenditure for 2006–08 were reviewed in further detail, given observed discrepancies with the EDPR 2006–10 benchmarks:

- Maintenance costs – meter data services – IT related
- Operating costs - metering data services
- Customer service operating costs associated with meter replacement.

Maintenance costs - meter data services— IT related

These costs do not form part of the calculation of the ECM therefore any reallocation of costs to this category would improve a DNSP's ECM position. The AER requested the DNSPs to substantiate their allocation of these costs.

JEN reported costs for meter data services – IT related that were nine times larger than provided to it through the EDPR 2006–10 benchmarks. After the AER queried this item, JEN provided a written response on 6 July and provided further expenditure information on 7 July in line with its allocations. These cost allocations are not

outlined in JEN's regulatory accounts. JEN's charges application and the EDPR 2006–10 benchmarks for this cost item are shown in Table 3.26.

JEN offered the following reply to the AER regarding its cost allocation generally:

> JEN does not have access to such detailed data for 2006 and 2007, as the costs were incurred under AGL and subsequently Alinta structures, with information being recorded at an aggregated level, as per the regulatory accounts. The 2008 whole of business cost allocation therefore provides the best basis for breaking up total in 2006 and 2007 O&M expenditure allocated to prescribed metering services into the subcategories in the charges application template.
>
> Due to an oversight, while the 2008 breakdowns were developed consistently with the whole of business cost allocation, the figures for 2006 and 2007 were not. Hence the big difference in break downs between the 2008 figures and those for 2006 and 2007.… An updated breakdown of O&M expenditure (using a consistent approach across 2006, 2007 and 2008) is provided in the attached spreadsheet. The 2008 figures are based on JEN's whole of business cost allocation. The 2006 and 2007 break downs are derived by disaggregating the available 2006 and 2007 totals using allocators derived from the 2008 figures.[219]

This response is not considered sufficient for the AER to accept, in light of the vast difference between benchmark costs and unaudited reported costs reconciliation provided as part of JEN's revised data. The AER therefore substituted meter data services – IT related benchmark costs from the EDPR 2006–10 for JEN's actual costs for 2006–08 in its charges application. This resulted in an $8.4 million variance for this cost item which was reallocated to operating costs – meter data services. The AER's draft determination on JEN's meter data services – IT related costs are shown in Table 3.26.

Table 3.26: AER draft determination—JEN meter data services costs – IT related ($'000s, real 2008)

IMRO O&M costs excluded from ECM	2006	2007	2008	Total
Charges Submission	2,548	3,432	3,831	9,811
EDPR 2006–10 Benchmark	469	469	469	1,406
Variance	2,079	2,963	3,362	8,405
Draft determination	469	469	469	1,406

Source: JEN, *AMI Initial Charges Application 2010-2011*, 1 June 2009 incorporating further information provided on 7 July 2009; ESCV, op. cit..

CP and PC meter data services—IT related costs for 2006 and 2007 were not accepted by the AER because they did not conform to 2006 and 2007 regulatory accounting statements.

[219] JEN, *JEN Question on Benchmark v Actual - 2006–08 cost*, email to AER, 6 July 2009.

UED's costs in relation to meter data services—IT related were adjusted for customer service costs meter replacement. Further details are provided in the following sections.

Meter data services—operating costs

The adjustment to JEN's meter data services - operating costs is shown in Table 3.27. The AER has added the variance ($8.4 million) from Table 3.26 to JEN's charges submission in Table 3.27 to arrive at the draft determination on meter data services – operating costs.

As can be seen in Table 3.27, JEN's charges submission had substantially lower costs than that provided to them in the EDPR 2006–10 benchmark. These costs form part of the ECM calculation, so DNSPs have an incentive to under report costs to maximise their ECM. The draft determination on JEN's meter data services – operating costs is shown at the bottom of Table 3.27.

Table 3.27: AER draft determination—JEN meter data services – operating costs ($'000s, real 2008)

IMRO O&M costs included in ECM	2006	2007	2008	Total
Charges Submission	1,015	1,421	1,616	4,053
EDPR 2006–10 Benchmark (adjusted for actual quantities)	2,517	2,588	2,641	7,746
Variance	-1,502	-1,167	-1,024	-3,693
Draft determination	3,094	4,385	4,979	12,458

Source: JEN, *AMI Initial Charges Application 2010-2011*, 1 June 2009 incorporating further information provided on 7 July 2009.

The AER asked similar questions of CP and PC where the AER observed that CP's actual costs were declining in 2007 and 2008 and for PC were only half the benchmark allocation from the EDPR 2006–10 for the entire 2006–08 period. CP and PC replied:

> There are a number of reasons for the decline observed in meter data service costs over the period 2006–08:
>
> 2006 costs are reported inclusive of a margin levied by CHED Services which was permitted under the previous version of Electricity Industry Guideline No. 3;
>
> in the case of CP, the allocation of local overhead to meter data services was revised in the 2007 Regulatory Accounts resulting in a lower allocation to meter data services; and
>
> the costs reported have been audited and represent the payments made by CP and PC Australia to their respective contractors[220].

Regulatory accounts under Guideline No 3 require that related party margins be excluded from reported expenditure. The AER reviewed the earlier regulatory

[220] CP and PC, op. cit., 2 July 2009.

accounting guidelines which confirmed that DNSPs did not need to provide costs exclusive of related party margins prior to 31 December 2007 unless practicable to do so. This applies to CP and PC's 2006 costs. Data provided in regulatory accounts was accepted by the AER, as per the requirements of the revised Order. All other operating costs which formed part of CP and PC's charges application were not consistent with Guideline No. 3. The AER indicated to CP and PC that this would not be acceptable under the requirements of the revised Order.

CP and PC further advised the AER that they would provide audited information from Deloitte on 2006–08 costs and revenues, in the week beginning 6 July 2009, where there were inconsistencies with regulatory accounting statements data.[221] However, CP and PC did not provide this audited information by their proposed date and therefore the AER could not consider it for the draft determination. Any further information received will be considered in the final determination. The AER's determination to not accept data where it was inconsistent with regulatory accounting statements has resulted in minor changes to the ECM amount for CP and PC.

Customer service costs for meter replacement

Customer service costs for meter replacement are included in the ECM calculation therefore the DNSPs have an incentive to incur and otherwise report lower costs than the EDPR benchmark allowances.

The AER questioned JEN as to why its customer service costs were nil in 2006–08, despite meters being replaced during that period. In its response, JEN stated:

> …the "0" entries in the Customer Services (meter replacements) row are consistent with the EDPR determination that notes "…Final Decision on the unit costs for installing meters has included these costs for replacement meters only" and "the unit cost for customer service already included the costs associated with telephone enquires from customers". As a result of outsourcing arrangements for meter replacements, JEN capitalises the overhead costs of meter replacements. JEN's O&M expenditure for prescribed metering services in the regulatory accounts therefore does not include any O&M expenditure in relation to meter replacements.[222]

As noted above, appropriate calculation of ECM amounts requires that the effects of changes to capitalisation policies are removed when comparing actual expenditure against benchmarks. Accordingly, the AER has adjusted JEN's benchmarks for customer service – meter replacements costs to $0.

As with JEN, the AER asked SPA why it had reported no costs against customer service costs for 2006–08 even though meters were being replaced during that time.

SPA responded that its cost allocation methodology did not allocate specific amounts to specific types of customer serviced costs, such as customer appointment, site visits, customer communications and complaints handling. They advised such costs would

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221 ibid.

222 JEN, *Jemena Question on Benchmark v Actual - 2006-08 cost*, email to AER, 6 July 2009.

be allocated to either 'Metering Data Services' category for IMRO costs, 'Indirect costs' for AMI operating expenditure, or have been capitalised.[223]

The AER notes that SPA's budget application includes costs for these activities over 2009–11. It therefore seems unlikely that there would be no such costs for 2006–08. For the draft determination, AER allocated costs equivalent to benchmark unit costs from the EDPR 2006–10 multiplied by actual meter replacement quantities, and taken the resulting figure out of indirect overheads.

The AER also queried UED's customer service meter replacement costs which were also zero. UED replied:

> Our service provider has been unable to provide costs to that level of detail. Costs for the activities you have described may be incurred however are not able to be allocated to that level of detail.[224]

Given that UED cannot substantiate its costs, the AER has not accepted them. As a consequence, UED's ECM has been amended. For the draft determination, AER has allocated costs equivalent to benchmark unit costs from the EDPR 2006–10 multiplied by actual meter replacement quantities, and taken the resulting figure out of metering data services – IT related and put into customer service costs meter replacements.

AER Conclusion- ECM amounts

The AER's draft determination for the ECM amounts for each DNSP are detailed in Table 3.28 to 3.32 below, which reflect the adjustments to cost items discussed above. Relative to the DNSP's charges proposals, the largest reduction to the ECM amounts arising from the AER's draft determination was a reduction of $22 million for JEN. Smaller reductions have resulted for CP and PC (around $2 million each).

3.2.8.4 AMI pre-start date O&M expenditure

DNSPs are able to recover pre-start date (1 January 2006 to 31 December 2008) AMI costs incurred under clause 5D.4 of the revised Order.

Clauses 5D.4(d) to 5D.4(g) of the revised Order require the AER to make an adjustment for pre-start date AMI expenditure. These mainly relate to project management cost; costs associated with undertaking technology trials and customer response trials at the direction of DPI; installation and commissioning of information technology systems to support remote meter reading; project management; and interest rate and exchange rate hedging costs.

The AER sought explanations from DNSPs about the substantial size of AMI project management costs. These costs can be recovered under clause 5D.4(f) of the revised Order. The DNSPs responded with a breakdown, explaining that costs related technology procurement, business transformation, participating in the regulatory processes, tender management and evaluation, audit reviews, participation at industry steering committees and developing AMI forecasts and budgets.

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223 SPA, *AMI Initial Pricing application 2009-11— SP AusNet Response to AER questions of 30th June 2009 on 2006-08 costs*, email to AER, 3 July 2009.

224 UED, *UED Questions on Benchmark v Actual Costs 2006-08*, email to AER, 30 June 2009.

The AER has accepted these explanations and the quantum of costs allocated by the DNSPs, which are consistent with the revised Order clauses 5D.4(f) and form part of the DNSP's initial AMI budget applications 2009–11. However, in relation to CP and PC, pre-start date AMI costs were not accepted where they did not conform to the 2006 regulatory accounts (as noted above in regard to the calculation of ECM amounts).

No DNSP applied for interest rate hedging or exchange rate hedging costs under clause 5D.4(g) of the revised Order.

3.2.8.5 WACC adjustment for the time value of money

The revised order permits the DNSPs to receive the time value of money for 2006–08 expenditure when setting charges for 2010 and 2011. The DNSPs did not amend the time value of money methodology calculations included by the AER in the charges model. Therefore the AER has accepted the methodology for calculating the time value of money within the DNSPs charges applications.

The value of this adjustment in terms of the building block cost is noted in Tables 3.28 to 3.32 below and has changed from that proposed by the DNSPs due to the AER's adjustments as noted elsewhere in this determination.

3.2.8.6 Draft determination on offset of costs and revenues 2006–08

As a result of the analysis in section 3.2.8, Tables 3.28 to 3.32 show the AER's draft determination on the offset of costs and revenues for each DNSP for 2006–08, applied as a building block component in 2009.

Table 3.28: AER draft determination—CP offset of costs and revenues 2006–08 ($'000s, nominal)

	2006	2007	2008	2009	2010	2011	2012	2013
Prescribed metering offset	230	-4,474	-5,545	N/A	N/A	N/A	N/A	N/A
Duos tax offset	0	449	822	775	525	N/A	N/A	N/A
Efficiency carryover	-2,172	1,382	1,118	1,174	1,204	1,234	3,871	-337
AMI O&M costs	20	3,375	4,430	N/A	N/A	N/A	N/A	N/A
Total	-1,922	733	825	1,949	1,729	1,234	3,871	-337
WACC time value of money adjustment factor	1.32	1.20	1.12	1.00	0.92	0.84	0.77	0.71
Total Offset	N/A	N/A	N/A	**6,584**	N/A	N/A	N/A	N/A

Table 3.29: AER draft determination—JEN offset of costs and revenues 2006–08 ($'000s, nominal)

	2006	2007	2008	2009	2010	2011	2012	2013
Prescribed metering offset	-967	-508	-1,201	N/A	N/A	N/A	N/A	N/A
Duos tax offset	118	455	531	558	418	N/A	N/A	N/A
Efficiency carryover	-450	-1,484	-2,099	-2,204	-2,260	-2,318	-1,838	-683
AMI O&M costs	0	0	0	N/A	N/A	N/A	N/A	N/A
Total	-1,299	-1,537	-2,769	-1,646	-1,842	-2,318	-1,838	-683
WACC time value of money adjustment factor	1.32	1.20	1.12	1.00	0.92	0.84	0.77	0.71
Total Offset	N/A	N/A	N/A	**-13,853**	N/A	N/A	N/A	N/A

Table 3.30: AER draft determination—PC offset of costs and revenues 2006–08 ($'000s, nominal)

	2006	2007	2008	2009	2010	2011	2012	2013
Prescribed metering offset	-6,098	-10,848	-14,653	N/A	N/A	N/A	N/A	N/A
Duos tax offset	0	832	1,918	2,486	2,271	N/A	N/A	N/A
Efficiency carryover	3,383	5,634	5,769	6,056	6,211	6,371	2,478	35
AMI O&M costs	255	5,857	9,571	N/A	N/A	N/A	N/A	N/A
Total	-2,460	1,475	2,605	8,542	8,482	6,371	2,478	35
WACC time value of money adjustment factor	1.32	1.20	1.12	1.00	0.92	0.84	0.77	0.71
Total Offset	N/A	N/A	N/A	**25,055**	N/A	N/A	N/A	N/A

Table 3.31: AER draft determination—SPA offset of costs and revenues 2006–08 ($'000s, nominal)

	2006	2007	2008	2009	2010	2011	2012	2013
Prescribed metering offset	-6,397	-10,053	-12,563	N/A	N/A	N/A	N/A	N/A
Duos tax offset	350	445	1,172	1,821	1,773	N/A	N/A	N/A
Efficiency carryover	1,349	1,519	84	88	91	93	-1,522	-1,699
AMI O&M costs	1,028	3,360	8,008	N/A	N/A	N/A	N/A	N/A
Total	-3,671	-4,728	-3,298	1,909	1,863	93	-1,522	-1,699
WACC time value of money adjustment factor	1.32	1.20	1.12	1.00	0.92	0.84	0.77	0.71
Total Offset	N/A	N/A	N/A	**-12,913**	N/A	N/A	N/A	N/A

Table 3.32: AER draft determination—UED offset of costs and revenues 2006–08 ($'000s, nominal)

	2006	2007	2008	2009	2010	2011	2012	2013
Prescribed metering offset	-2,572	-3,166	-4,243	N/A	N/A	N/A	N/A	N/A
Duos tax offset	0	268	986	1,527	1,433	N/A	N/A	N/A
Efficiency carryover	-318	107	-56	-59	-60	-62	318	-192
AMI O&M costs	0	990	1,010	N/A	N/A	N/A	N/A	N/A
Total	-2,890	-1,801	-2,304	1,468	1,373	-62	318	-192
WACC time value of money adjustment factor	1.32	1.20	1.12	1.00	0.92	0.84	0.77	0.71
Total Offset	N/A	N/A	N/A	**-5,778**	N/A	N/A	N/A	N/A

3.3 Draft determination on Revenue Requirement

Based on the assessment undertaken by the AER of the DNSPs' building block elements above, the AER's draft determination on the revenue requirements for each DNSP are shown in Tables 3.33 to 3.37 below.

The reductions in the revenue requirement in the draft determination compared to the DNSPs' proposals reflect:

- the amendment to the offset of costs and revenues 2006–08
- the AER using the audited regulatory accounts provided to it in May and June 2009. As noted in section 1.3.7.1 the AER did not accept DNSPs' amendments to regulatory accounting data, which were in the form of written letters to the AER and not audited accounts
- not accepting DNSPs' cost allocation that impacted the efficiency carryover mechanism, specifically regarding allocation of customer service and meter data services – IT related costs
- Using a WACC of 8.96 per cent compared to the 10.01 per cent adopted by the DNSPs in their charges applications.

Table 3.33: AER draft determination—CP revenue requirement ($'000s, nominal)

	2009	2010	2011
Return on capital	3,018	4,974	8,449
Depreciation	3,651	7,595	10,844
Operating & maintenance costs	14,230	10,656	11,290
Tax liability	0	0	0
Offset of costs and revenues 2006–08	6,584	N/A	N/A
Total revenue requirement	27,483	23,225	30,584

Table 3.34:AER draft determination—JEN revenue requirement ($'000s, nominal)

	2009	2010	2011
Return on capital	5,774	7,713	9,574
Depreciation	6,429	13,078	16,363
Operating & maintenance costs	4,116	9,408	14,867
Tax liability	0	0	0
Offset of costs and revenues 2006–08	-13,853	N/A	N/A
Total revenue requirement	2,466	30,199	40,804

Table 3.35: AER draft determination—PC revenue requirement ($'000s, nominal)

	2009	2010	2011
Return on capital	5,698	10,013	18,682
Depreciation	7,140	14,852	22,387
Operating & maintenance costs	29,915	21,687	24,732
Tax liability	0	0	0
Offset of costs and revenues 2006–08	25,055	N/A	N/A
Total revenue requirement	67,807	46,551	65,800

Table 3.36:AER draft determination—SPA revenue requirement ($'000s, nominal)

	2009	2010	2011
Return on capital	7,352	10,080	15,396
Depreciation	9,495	18,475	24,482
Operating & maintenance costs	30,447	30,806	30,071
Tax liability	0	0	0
Offset of costs and revenues 2006–08	-12,913	N/A	N/A
Total revenue requirement	34,380	59,362	69,949

Table 3.37:AER draft determination—UED revenue requirement ($'000s, nominal)

	2009	2010	2011
Return on capital	8,704	11,007	14,905
Depreciation	10,083	18,927	24,091
Operating & maintenance costs	7,615	14,533	21,842
Tax liability	0	0	0
Offset of costs and revenues 2006–08	-5,778	N/A	N/A
Total revenue requirement	20,624	44,467	60,838

4 Charges for AMI services

The DNSPs' AMI charges recover the costs of meter provision and meter data services as a single charge. Prior to the AMI, separate charges were calculated for each of these services. Charges are either on a per meter basis, or a per NMI basis, depending on DNSPs' approaches and current charging practices.

Regulated metering charges for 2010 and 2011 are required by clause 5A.1 of the revised Order. Charges for 2009 are those approved by the ESCV in November 2008.

The DNSPs submitted their charges applications 2010–11 to the AER on 1 June 2009. As noted earlier in this draft determination, JEN and SPA provided further information to account for data reconciliations stemming from AER inquiries.

The AER notes that the DNSPs did not propose any exit and restoration fees for the initial AMI budget period. As a consequence of the exclusivity derogation provided to them by the Victorian Government and approved by the AEMC[225], exit and restoration fees are not payable during the initial AMI budget period. Furthermore, DNSPs did not propose any customer requested service fees.

The AER notes that the revised Order does not require a draft determination on the DNSPs' charges applications, however this has been combined with the AER's budget determination in order to provide stakeholders with information on potential price impacts and to facilitate further consultation generally. Accordingly, where it is noted in this section that the AER has determined charges, this has no status under the revised Order.

The AER notes that at this time, customer retail energy bills do not separately record the charges associated with metering services. Therefore, from 2010, customers will not be able to determine the new AMI charges in their electricity accounts.

This section assesses the proposed charges that result from the proposed revenue requirements in section 3 and sets out the AER's draft determination on those charges.

4.1 Approach to setting charges and pricing principles

The revised Order states that charges for meter provision and data reading in clause 4.1(n) may differ in respect of:

- single phase single element meter
- single phase single element meter with contactor

[225] On 29 January 2009, the AEMC gave notice under sections 102 and 103 of the National Electricity Law (NEL) making the National Electricity Amendment (Victorian Jurisdictional Derogation (Advanced Metering Infrastructure Roll Out)) Rule 2009 and related Rule determination. The Rule as made is reflective of the Victorian Government's Rule change proposal. The Rule commences operation on 1 July 2009. The AEMC was of the view that the Rule (reflective of the Victorian Government's proposal) meets the National Electricity Objective in that it provides for a certain, predictable and accelerated rollout of AMI, thereby meeting the Victorian Government's policy. An accelerated rollout of AMI would enable a number of efficiency benefits to be realised. These benefits would not be available to the same extent and as rapidly under a retailer mandated rollout of AMI.

- 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 DNSP and approved by the regulator

but may not differ depending upon whether the meter is an accumulation meter, a manually read interval meter or remotely read meter.

The main requirement governing the setting of charges for a particular year is set out in clause 4.1(o) of the revised Order. This clause provides that when determining charges for any year from 2010 to 2015 the regulator shall satisfy itself that the NPV of total costs up to that year (starting in 2009) is equal to the NPV of total revenue earned in that period.

Notwithstanding this, clause 4.1(p) permits the DNSP to propose reduced charges, where the NPV of revenues is less than NPV of costs in any given year. This will deliver a smoother price path for customers during the roll-out.

In its framework and approach the AER noted that it would accept 2010 charges where expected revenues are less than the required revenue (as determined by the AER) for that year. However, if DNSPs' proposed 2011 charges over recovered costs, the AER would reduce those charges accordingly to maintain NPV neutrality for the 2011 charges. The AER would only adjust charges where the NPV of revenue was found to exceed the NPV of costs.

The framework and approach also set out the following principles the AER would apply in assessing proposed charges:

- **Cost of service provision**: a DNSP's charge and terms and conditions for a prescribed metering service must be based on the costs incurred by the DNSP in providing the prescribed metering service, given the customer classes permitted by the revised Order. For example, the charges for serving the class of customers with single phase single element meters should reflect the costs of serving this class of customers.
- **Cost allocation**: in respect of the costs incurred by a DNSP in providing a prescribed metering service:
  - those costs must not include costs in respect of which the DNSP is remunerated under the DNSP's distribution tariff or excluded service charges or charges for metering services to unmetered supply points, and
  - those costs must only include an appropriate allocation of any shared or common costs incurred by the DNSP in providing the prescribed metering

service and in providing any other goods or services, whether in the conduct of a DNSP's business as a DNSP or any other business.

- **Simplicity**: charges and terms and conditions for prescribed metering services should be simple and easily comprehensible.

The framework and approach paper also noted that the AER would not apply rebalancing constraints on metering charges for 2009–11, as it considered these to be inconsistent with clause 4.1(o) and the above pricing principles, given the significant change that the AMI project represents for charges.

4.2 Charges Assessment by DNSP

In summary, the AER notes that differences between DNSPs metering charges reflect choice of communications technology, information technology and data processing requirements for AMI meters, cost allocation, diverse network characteristics and different customer numbers.

The AER notes that charges from 2012 will also reflect the DNSPs' subsequent AMI budget period expenditures to be incurred during 2012–15.

4.2.1 CP Proposal

CP proposed three different tariff categories for AMI:

- single phase
- three phase direct connected and
- three phase current transformer

CP's 2009 metering charges are shown in Table 4.1 and can be compared to proposed AMI charges in Table 4.2.

Table 4.1: CP 2009 metering charges, per annum, per NMI ($ nominal)

	Read monthly , p.a.	**Read quarterly, p.a.**
Single phase non-off peak	72.05	31.14
Single phase off-peak	80.37	39.46
Three phase direct connected	118.91	78.00
Three phase CT connected	146.34	105.43

Source: CP, *Advanced Metering Infrastructure Charges Application 2010-11*, 1 June 2009.

Table 4.2: CP proposed AMI charges, per annum, per NMI ($ nominal)

	2010	2011
Single phase	104.79	128.79
Three phase direct connected	136.98	168.36
Three phase CT connected	172.99	212.62

Source: CP, *Advanced Metering Infrastructure Charges Application 2010-11*, 1 June 2009.

Table 4.3 contains CP's proposed recovery of AMI costs over 2010–11, where an under-recovery occurs in 2010. This results in the increase in charges for 2011 seen in Table 4.2 above.

Table 4.3: CP proposed AMI cost recovery 2010–11 ($'000s, nominal)

	2009	2010	2011
Total costs	29,611	24,183	31,885
Total revenues	12,701	33,484	42,118
Discount factor	0.94	0.86	0.78
NPV proposed over (under) recovery		-7,968	0

Source: CP, *Advanced Metering Infrastructure Charges Application 2010-11*, 1 June 2009.

4.2.2 AER assessment of CP proposed charges

CP chose to under recover revenues by $7.97 million in NPV terms in 2010. The effect of this is to lower charges in 2010 but requires offsetting increases in charges to apply in 2011. This pricing methodology is consistent with clause 4.1(p) of the revised order and therefore is approved. The AER has accepted CP's proposed charges for 2010.

CP's revenues were reduced by $4.39 million as a result of draft determination. The AER has therefore reduced 2011 charges to align with draft determination revenues in NPV terms. As a result, for most customers, charges in 2011 are 12.3 per cent below those proposed.

Having made the appropriate amendments to the revenue requirements as discussed above, the AER's draft determination for CP's charges are set out in Table 4.4 below.

Table 4.4: AER draft determination—CP AMI charges, per annum, per NMI ($ nominal)

	2010	2011
Single phase	104.79	113.00
Three phase direct connected	136.98	147.72
Three phase CT connected	172.99	186.55

In relation to the cost of service provision pricing principle, CP's cost of service provision is as per the costs incurred in 2006–08 and forecast costs for 2009–11, as provided in their budget application. The AER has assessed these, made amendments where necessary and set out the draft determination charges. The charges for serving the class of customers proposed appear to reflect the costs of serving those customer classes. The draft determination charges therefore comply with the cost of service provision principle.

In respect of cost allocation, the AER assessed CP's allocations, such as for meter data services, to arrive at the draft determination. Meter provision costs included metering capital expenditure on meters, communications, meter maintenance and operating costs attributable to customer service costs. Meter data serviced costs comprised capital expended on IT and communications, costs for meter data management meter reading, backhaul and communication operations.

CP split costs equally between meter provision and meter data services for 2006–08 costs, trails costs, project management and overheads.

CP consolidated and simplified its metering charging structure into single phase, three phase direct connected and three phase current transformer. The split between single phase non-off peak and single phase off-peak, shown in Table 4.1 was deemed redundant under AMI. Further, CP has consolidated the meter reading and meter provision charge into one charge, thereby applying a one tariff per meter approach. CP will continue its practice of levying meter service charges on a per NMI basis.

These approaches to metering tariffs are considered consistent with the pricing principles from the AER's framework and approach paper. CP is therefore compliant with the pricing principles.

As per clause 4.1(k), the AER accepted CP's actual AMI metering revenues for 2009; and forecasts are based on the most recent forecast quantities as per clause 4.1 (l).

4.2.3 JEN Proposal

JEN's 2009 metering charge is shown in Table 4.5 noting that meter data services are charged on a per NMI basis, while meter provision is charged per meter. This means that the 2009 charges in that table cannot strictly be compared to JEN's proposed AMI charges in Table 4.6, which are charged on a per NMI basis only. However, the differences are minor, so a useful comparison can still be made.

Table 4.5: JEN 2009 metering charges, per annum ($ nominal)

	Read monthly , p.a.	Read quarterly, p.a.
Single phase non-off peak	73.37	27.02
Single phase off-peak	109.16	62.81
Three phase direct connected	135.41	89.06
Three phase CT connected	70.84	24.49

Source: JEN, *AMI Initial Charges Application 2010-2011*, 1 June 2009 incorporating further information provided on 7 July 2009.
Note: Meter data services are charged per NMI, while meter provision is charged per meter.

Table 4.6: JEN proposed AMI charges, per annum, per NMI ($ nominal)

	2010	2011
Single phase single element	134.63	136.70
Single phase single element with contactor	134.63	136.70
Three phase direct connected	165.46	167.99
Three phase CT connected	183.95	186.77

Source: JEN, *AMI Initial Charges Application 2010-2011*, 1 June 2009 incorporating further information provided on 7 July 2009.

Table 4.7 shows JEN's proposed recovery of AMI costs over 2010–11, with an under recovery expected in 2010.

Table 4.7: JEN proposed AMI cost recovery 2010–11 ($'000s, nominal)

	2009	2010	2011
Total costs	26,511	32,050	42,841
Total revenues	11,049	41,402	42,738
Discount factor	0.94	0.86	0.78
NPV proposed over (under) recovery		-6,559	-6,639

Source: JEN charges application, incorporating further information provided 7 July 2009.

4.2.4 AER assessment of JEN proposed charges

JEN's proposed charges would result in an under recovery of revenues of $6.6 million in NPV terms in both 2010 and 2011. This results in small price increases in 2011.

JEN chose this approach to minimise future price volatility on its customers and to maximise its cash flow during the roll out to help fund AMI targets from 2012-15.[226]

This pricing methodology is consistent with clause 4.1(p) of the revised order and therefore is approved to the AER.

However, the AER has reduced JEN's proposed revenue requirements by $27.9 million over the 2009–11 period, with the result that proposed charges are not compliant with the revised Order.

Therefore, to make JEN's charges compliant with the draft determination revenue requirements in NPV terms, the AER has reduced charges in 2010 and 2011. As a consequence, for most customers, draft determination charges in 2010 are 49.6 per cent below those proposed by JEN, while 2011 charges are 4.5 per cent below those proposed.

Having made amendments to the revenue requirements, and in accordance with clause 5D.1 of the revised Order, the AER's draft determination for JEN's charges is detailed in Table 4.8 below.

Table 4.8: AER draft determination—JEN AMI charges per annum, per NMI ($ nominal)

	2010	2011
Single phase single element	67.79	130.52
Single phase single element with contactor	67.79	130.52
Three phase direct connected	83.31	160.39
Three phase CT connected	92.62	178.32

In relation to the cost of service provision pricing principle, JEN's cost of service provision is driven primary by the capital costs of meters. The charges for serving the class of customers proposed appear to reflect the costs of serving those customer classes. The draft determination charges therefore comply with the cost of service provision principle.

In respect of cost allocation, the AER assessed JEN's allocations throughout its review such as for meter data services, to arrive at the draft determination. AER established that JEN included costs only for metering services and not costs incurred or revenues received as part of its distribution use of system revenue requirement provided under the EDPR 2006–10. No shared costs were included in JEN's proposed revenue.

Metering charges were simplified by amalgamating the meter reading and meter provision charge into a single charge, set according to meter type, JEN proposed a similar metering tariff for off-peak and non-off peak single phase customers on the

[226] JEN, *AMI Initial Charges Application for 2010-2011*, 1 June 2009, p. 27.

basis that these meters have the same functionality in measuring electricity consumption.

These approaches to metering tariffs are considered consistent with the pricing principles in the AER's framework and approach paper. JEN is therefore compliant with the pricing principles.

As per clause 4.1(k), the AER accepted JEN's actual AMI metering revenues for 2009; and forecasts are based on the most recent forecast quantities as per clause 4.1 (l).

4.2.5 PC Proposal

PC selected three different tariff categories for AMI:

- single phase
- three phase direct connected and
- three phase current transformer

PC's 2009 metering charges are shown in Table 4.9 and can be compared to its proposed AMI charges in Table 4.10.

Table 4.9: PC 2009 metering charges, per annum, per NMI ($ nominal)

	Read monthly , p.a.	Read quarterly, p.a.
Single phase non-off peak	83.21	34.95
Single phase off-peak	96.49	48.24
Three phase direct connected	139.05	90.79
Three phase CT connected	177.50	129.24

Source: PC AMI charges application, 1 June 2009.

Table 4.10: PC proposed AMI charges, per annum, per NMI ($ nominal)

	2010	2011
Single phase	96.67	125.17
Three phase direct connected	127.50	165.09
Three phase CT connected	168.94	218.74

Source: PC, *Advanced Metering Infrastructure Charges Application 2010-11*, 1 June 2009.

Table 4.11 shows PC's proposed recovery of AMI costs over 2010–11, where an under recovery is expected to occur in 2010. This results in higher charges for 2011, as shown in Table 4.10.

Table 4.11: PC proposed AMI cost recovery 2010–11 ($'000s, nominal)

	2009	2010	2011
Total costs	72,072	48,205	68,333
Total revenues	32,715	69,853	92,148
Discount factor	0.94	0.86	0.78
NPV proposed over (under) recovery		-18,544	0

Source: PC charges application, 1 June 2009.

4.2.6 AER assessment of PC proposed charges

PC chose to under recover revenues by $18.54 million in 2010 but to return to revenue neutrality in 2011. The effect of this is to reduce charges in 2010 but for higher charges to apply in 2011. This pricing methodology is consistent with clause 4.1(p) of the revised Order and therefore is approved. The AER has accepted charges for 2010.

PC's revenues were reduced by $8.45 million as a result of draft determination. The AER therefore reduced 2011 charges to align with draft determination revenues in NPV terms. As a result, for most customers, charges in 2011 are 10.9 per cent below those proposed.

Having made amendments to the revenue requirements, under clause 5D.1 of the revised Order, the AER's draft determination for PC charges are set out in Table 4.12.

Table 4.12: AER draft determination- PC AMI charges, per annum, per NMI ($ nominal)

	2010	2011
Single phase	96.67	111.48
Three phase direct connected	127.50	147.04
Three phase CT connected	168.94	194.82

In relation to the cost of service provision pricing principle, PC's cost of service provision is as per the costs incurred in 2006–08 and forecast costs for 2009–11, as provided in their budget application. The AER has assessed these, made amendments where necessary and set out the draft determination charges. The charges for serving the class of customers proposed appear to reflect the costs of serving those customer classes. The draft determination charges therefore comply with the cost of service provision principle.

In respect of cost allocation, the AER assessed PC's allocations throughout its review, as detailed earlier in this draft determination. Meter provision costs included metering capital expenditure on meters, communications, meter maintenance and operating costs attributable to customer service costs. Meter data serviced costs comprised

capital expended on IT and communications, costs for meter data management meter reading, backhaul and communication operations.

PC split costs equally between meter provision and meter data services for 2006–08 costs, trails costs, project management and overheads.

PC consolidated and simplified its metering charging structure into single phase, three phase direct connected and three phase current transformer. The split between single phase non-off peak and single phase off-peak, shown in Table 4.9 was deemed redundant under AMI. Further, PC has consolidated the meter reading and meter provision charge into one charge, thereby applying a one tariff per meter approach. The AER notes that it has approved two–element meters proposed as part of PC's budget application, and single element and two–element meter customers will pay the consolidated single phase metering charge.[227] PC will continue its practice of levying meter service charges on a per NMI basis.

These approaches to metering tariffs are considered consistent with the pricing principles from the AER's framework and approach paper. PC is therefore compliant with the pricing principles.

As per clause 4.1(k), the AER accepted PC's actual AMI metering revenues for 2009; and forecasts are based on the most recent forecast quantities as per clause 4.1 (l).

4.2.7 SPA Proposal

SPA provided a revised charges proposal to the AER on 29 June 2009, to correct for some errors they made in the initial charges application of 1 July 2009.

SPA's 2009 metering charges are shown in Table 4.13 and can be compared to SPA's proposed AMI charges in Table 4.14.

Table 4.13: SPA 2009 metering charges, per annum, per meter ($ nominal)

	Read monthly , p.a.	**Read quarterly, p.a.**
Single phase non-off peak	94.38	36.13
Single phase off-peak	101.35	43.10
Three phase direct connected	164.16	105.91
Three phase CT connected	161.09	102.84

Source: SPA, *Advanced Metering Infrastructure Initial Charges Application 1 June 2009*, incorporating further information provided on 29 June 2009.

[227] AER file note of phone conversation with PC representatives, 27 July 2009.

Table 4.14: SPA proposed charges, per annum, per meter ($ nominal)

	2010	2011
Single phase single element 1 contactor (1 load control)	76.96	110.18
Single phase, two–element 2 contactors (2 load controls)	87.92	125.87
Multi phase, one contactor (1 load control)	102.12	146.19
Multi phase, two contactor (2 load controls)	113.29	162.18
Multi phase CT connected	145.87	208.82

Source: SPA, *Advanced Metering Infrastructure Initial Charges Application 1 June 2009*, incorporating further information provided on 29 June 2009.

In Table 4.15, the AER has set out SPA's proposed recovery of AMI costs over 2010–11, where an under recovery occurs in 2010. This results in higher charges for 2011, as shown in Table 4.14.

Table 4.15: SPA proposed AMI cost recovery 2010–11 ($'000s, nominal)

	2009	2010	2011
Total costs	41,139	61,074	72,626
Total revenues	38,250	55,929	81,782
Discount factor	0.94	0.86	0.78
NPV proposed over (under) recovery		-7,130	0

Source: SPA, *Advanced Metering Infrastructure Initial Charges Application 1 June 2009*, incorporating further information provided on 29 June 2009.

4.2.8 AER Assessment of SPA proposed charges

SPA chose to under recover revenues by $7.1 million in 2010 and then apply revenue neutrality in 2011. The effect of this is to reduce charges in 2010 but for higher charges to apply in 2011. This pricing methodology is consistent with clause 4.1(p) of the revised order and therefore is approved to the AER.

The AER made amendments to SPA's charges application and the budget application, the effect of which was to reduce the revenue requirement by $11.15 million over the 2009-11 period. SPA's proposed charges therefore over recover revenues compared to costs are not accepted.

The AER has therefore reduced charges in 2010 and 2011 to align with draft determination revenues in NPV terms. As a result, for most customers, charges in 2010 are 1.4 per cent below those proposed, while 2011 charges are 14.5 per cent below those proposed.

Having made amendments to the revenue requirements, under clause 5D.1 of the revised Order, the AER's draft determination for SPA's charges are set out in Table 4.16.

Table 4.16: AER draft determination—SPA AMI charges, per annum, per meter ($ nominal)

	2010	2011
Single phase single element 1 contactor (1 load control)	75.88	94.23
Single phase, two–element 2 contactors (2 load controls)	86.69	107.66
Multi phase, one contactor (1 load control)	100.69	125.04
Multi phase, two contactor (2 load controls)	111.70	138.71
Multi phase CT connected	143.82	178.60

In relation to the cost of service provision pricing principle, SPA's costs are driven primary by the capital costs associated with the AMI roll-out SPA developed its metering tariffs on the basis of its expenditure forecasts and assumed total metering revenue for 2009, and forecast customer numbers. The charges for serving the class of customers proposed appear to reflect the costs of serving those customer classes. The draft determination charges therefore comply with the cost of service provision principle.

In respect of cost allocation, the AER assessed SPA's allocations throughout its review, as detailed earlier in this draft determination. The AER established that SPA included costs only for metering services and not costs incurred or revenues received as part of its distribution use of system revenue requirement provided under the EDPR 2006–10.

Metering charges were simplified by consolidating the meter reading and meter provision charge into one charge, thereby applying a one tariff per meter approach.

These approaches to metering tariffs are considered consistent with the pricing principles in the AER's framework and approach paper. SPA is therefore compliant with the pricing principles.

As per clause 4.1(k), the AER accepted SPA's actual AMI metering revenues for 2009; and forecasts are based on the most recent forecast quantities as per clause 4.1 (l).

4.2.9 UED Proposal

UED has consolidated the meter reading and meter provision charge into one charge thereby applying a one tariff per meter approach.

UED's 2009 metering charges are shown in Table 4.17 and can be compared to its proposed AMI charges in Table 4.18.

Table 4.17: UED 2009 metering charges, per annum, per meter ($ nominal)

	Read monthly , p.a.	Read quarterly, p.a.
Single phase non-off peak	68.00	22.32
Single phase off-peak	71.91	26.22
Three phase direct connected	82.49	36.81
Three phase CT connected	92.17	46.48

Source: UED, *AMI Initial Charges Application*, 1 June 2009.

Table 4.18: UED proposed AMI charges, per annum, per NMI ($ nominal)

	2010	2011
Single phase single element	88.44	95.12
Single phase single element with contactor	90.29	97.09
Three phase direct connected	99.78	107.28
Three phase CT connected	106.42	114.43

Source: UED, *AMI Initial Charges Application*, 1 June 2009.

In Table 4.19, the AER has shown UED's proposed recovery of AMI costs over 2010–11, where revenue neutrality is expected in 2010 and 2011.

Table 4.19: UED proposed AMI recovery 2010–11 ($'000s, nominal)

	2009	2010	2011
Total costs	22,227	53,599	62,822
Total revenues	18,182	58,048	62,821
Discount factor	0.94	0.86	0.78
NPV proposed over (under) recovery		0	0

Source: UED, *AMI Initial Charges Application*, 1 June 2009.

4.2.10 AER Assessment of UED proposed charges

UED applied revenue neutrality for both 2010 and 2011 charges. This pricing methodology is consistent with clause 4.1(p) of the revised order and therefore is approved.

UED's revenues were reduced by $12.72 million as a result of draft determination. The AER therefore reduced 2010 charges to align with draft determination revenues in NPV terms. As a result, for most customers, charges in 2010 are 18.8 per cent below those proposed, while 2011 charges are 3.2 per cent below those proposed.

Having amended UED's revenue requirement, the AER under clause 5D.1 of the revised Order, sets out the draft determination on AMI charges for UED in Table 4.20 below.

Table 4.20: AER draft determination—UED AMI charges, per annum, per NMI ($ nominal)

	2010	2011
Single phase single element	71.80	92.12
Single phase single element with contactor	73.30	94.02
Three phase direct connected	81.01	103.89
Three phase CT connected	86.40	110.82

In relation to the cost of service provision pricing principle, UED's cost of service provision is driven primary by the capital costs of meters.

In respect of cost allocation, the AER assessed UED's allocations throughout its review, as detailed earlier in this draft determination. The AER established that UED included costs only for metering services and not costs incurred or revenues received as part of its distribution use of system revenue requirement provided under the EDPR 2006–10. No shared costs were included in UED's proposed revenue. The charges for serving the class of customers proposed appear to reflect the costs of serving those customer classes. The draft determination charges therefore comply with the cost of service provision principle.

Metering charges were simplified by amalgamating the meter reading and meter provision charge into a single charge, set according to meter type.

These approaches to metering tariffs are considered consistent with the pricing principles from the AER's framework and approach paper. UED is therefore compliant with the pricing principles.