Amended AMI Budget and Charges Application 2012 – 2015

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Executive summary

United Energy (UE) is committed to implementing the Victorian Government's Advanced Meter Infrastructure (AMI) policy. UE supports the policy decision to replace existing accumulation meters with a new AMI meter at each customer site within our network area.

UE has established a joint program with Jemena Electricity Networks (JEN) under the management of Jemena Asset Management (JAM). The joint program involves cost sharing arrangements that deliver benefits to UE and our customers in the form of lower costs and risks. UE could not achieve these benefits with a stand-alone program and therefore UE pays a commercial margin to JAM to obtain these benefits. The establishment of this program and the payment of margins to achieve the synergies of the joint program is consistent with a commercial standard and reasonable under the circumstances.

The AER's task is to compare UE's conduct against that standard to see if there was a substantial departure. In contrast, the AER seeks to quantify a single 'commercial standard' of expenditure. It does so by simply adopting the estimate of expenditure prepared by Impaq Consulting on the basis of a 'bottom-up build' of costs. This is a misapplication of the Cost Recovery Order in Council (CROIC). The Impaq Consulting estimate is not, and does not purport to be, an assessment of what a reasonable business would have done in UE's circumstances.

This amended budget application, together with the supporting paper prepared by JAM, reiterates and updates many of the matters addressed in UE's first budget application, dated 27 February 2009 and second budget application in 27 February 2011. In particular, the vast majority of UE's AMI costs are subject to the discipline of competitive tenders managed by the joint program. This competitive process, together with the economies of scale achieved through the joint program, will continue to deliver significant benefits to UE's customers during the 2012-2015 budget period. In accordance with the CROIC, this budget application only includes expenditure that falls within the scope defined by the Victorian Government and is targeted to deliver the AMI functionality and service levels specifications applying to the AMI roll-out.

UE is confident that this amended budget application and the amended charges application comply fully with the requirements of the CROIC and should be approved by the AER.

1 Introduction

1.1 Background

United Energy (UE) is one of five electricity distribution businesses operating under licence within Victoria. UE manages network assets with a replacement value of approximately $3.7 billion, comprising 45 zone substations, approximately 208,000 poles, 11,500 distribution substations, 10,000 km of overhead power lines and 2,300 km of underground cables. UE's electricity distribution network provides services to approximately 630,000 end-use customers, located in an area of 1,472 km^2 in southeast Melbourne and the Mornington Peninsula. UE's distribution area is shown in Figure 1.1 below.

Figure 1.1: United Energy distribution area

In accordance with the CROIC UE is required to install AMI to all homes and businesses in UE's network area by 31 December 2013. As part of that process UE was required to submit a budget application on 27 February 2011 for the 2012-2015 period. Subsequent to that application UE provided an updated budget application to the Australian Energy Regulator (AER) on 30 May 2011.

That revised application details a revised roll-out schedule for the 2012-2015 period. Originally UE had planned to install approximately 50 per cent of AMI by 31 December 2011 and the remaining 50per cent by 31 December 2013. Due to difficulties currently being experienced by the program UE provided a revised roll-out schedule where 46 per cent of meters were forecast to be installed by 31 December 2011 and the remaining 54 per cent by 31 December 2013.

1.2 Summary of AER's Draft Decision

The AER has made significant reductions to UE's 2012 – 2015 forecast. It has reduced capital and operating expenditure by approximately 40 per cent. The table provides a summary of the reductions, brief comments and a cross reference to UE's response to the matters raised.

Table 1.1: AER reductions

Description	Comments	Cross Reference
Exchange rate	AER has forecast an exchange rate of $1.04 compared to UE's forecast of $0.85.	Section 4.2 and Appendix F
Related party margins	AER has forecast a related party margin of 4 per cent compared to UE's forecast of 6 per cent.	Section 4.4
Meter replacement volumes	The AER has incorrectly applied the meter volumes per the 27 Feb submission when the volumes used should have been the 30 May submission	Section 4.6 and Appendix A
New meter volumes	UE has been unable to demonstrate how these volumes reconcile to its 2010-2015 pricing application	Section 4.8 and Appendix A Section 10
NST	The AER has incorrectly concluded that NST is not a requirement of the AMI program	Appendix A Section 4
Unit rates (Trucks)	The AER has changed unit rates that have been competitively tendered	Section 4.7 and Appendix A Section 8
Items not considered	The AER's forecast has not correctly considered the installation of antennas	Section 4.6 and Appendix A Section 11
Second meter provider	Although the AER accepts the need for a second meter provider they have not allowed sufficient budget to implement.	Section 4.10
Two element metering	The AER has assumed that the moratorium on time of use pricing will end at the end of this year and therefore has not allowed considered the forecasts.	Section 4.3
Ongoing staffing levels	The AER has largely accepted the advice of Impaq Consulting to reduce the staffing levels in relation to the delivery of ongoing AMI services.	Section 5 and Appendix A (various)

1.3 Structure of this response

This Revised Budget Application is structured as follows:

Chapter 2: Describes the regulatory framework and addresses the so called lack of incentives within the framework
Chapter 3: Provides a summary of the amended budget and amended prices
Chapter 4: Details UE's amended capital expenditure forecasts
Chapter 5: Details UE's amended operating expenditure forecasts

Chapter 6: Details UE's approach to cost of capital
Chapter 7: Provides UE's forecast of depreciation
Chapter 8: Details UE's metering asset base
Chapter 9: Details the amended building block costs for 2012-2015
Chapter 10: Details the proposed amended prices for 2012-2015 and compliance to the CROIC pricing principles

Clause 5.3 of the CROIC states:

> An application must set out the information and identify the documents upon which the distributor relies. Provided that if a distributor relies on information it previously provided to the Commission for an application or a Pricing Proposal, it does not need to set out that information again in its application if the distributor identifies where that information may be found in that previous application or Pricing Proposal (as the case may be).

UE's first budget application submitted to the AER 27 Feb 2009 relied on the following submissions to the Essential Services Commission, which provided cost forecasts and supporting data:

- 24 September 2007: Response to ESC Consultation Paper No 1 (August 2007) – Framework and Approach.
- *31 December 2007:* Advanced Metering Infrastructure Pricing Proposal: Submission to the Essential Services Commission. The pricing proposal sets out prices for the provision of Advanced Metering Infrastructure (AMI) in UE's distribution network area[1].
- 25 January 2008: Data Templates. The information in the December 2007 pricing proposal was supplemented with data templates containing cost and volume information in the format prescribed by the ESC. Both the December 2007 pricing proposal and January 2008 templates detailed the forecast capital and operating costs of delivering AMI in line with the timelines, functionality and service levels mandated by the Victorian Government.
- 12 March 2008: AIMRO Program: Further Information on Costs – Submission Prepared for Essential Services Commission. This submission supplemented the December 2007 pricing proposal and the 25 January 2008 templates.
- 16 May 2008: Response to ESC data clarification questions. This submission provided specific responses to cost and data template questions.

[1] Clause 9.1(b) of the Cost Recovery OIC required Victorian Distributors to submit to the Commission their proposed prices for the provision of metering services, including AIMRO, for customers with annual electricity consumption of less than 160 MWh, by 31 December 2007.

- 18 June 2008: Updated pricing proposal and Joint AMI solution and cost substantiation and supporting materials. These submissions provided updated cost forecasts and substantiation based on request for tender results.

In addition to the above information, UE's first budget application explained the rationale for UE's decision to engage JAM to manage the joint program and to pay a 6% management fee. The Australian Competition Tribunal determined that the management fee is within the scope of activities defined by the CROIC[2]. In accordance with clause 5.3 of the CROIC, for the purposes of this amended budget application, UE relies on its first budget application and the supporting documents described above in relation to any consideration by the AER as to whether:

- UE acted prudently in engaging JAM and paying a management fee;
- UE will incur expenditure that involves a substantial departure from the commercial standard that a reasonable business would exercise in the circumstances; and
- the management fee payable by UE to JAM is within the scope of activities defined by the CROIC.

UE also relies on the second budget application submitted to the AER on 27 February 2011 and all responses provided to the AER in making their draft decision.

[2] Australian Competition Tribunal, Application by United Energy Distribution Pty Ltd [2009] ACompT 10 (23 December 2009), paragraph 55.

2 AMI Regulatory framework

2.1 AER's requirement under the CROIC

The Regulatory Principles in clause 4.1 of the CROIC provide that '[t]here shall be no incentive based control mechanism applied'. The choice of this language is instructive, as it replicates that in clause 6.2.6 of the National Electricity Rules[3]. Clause 4.1 negates the principles of those Rules by providing for the pass through of a distributor's actual AMI expenditure.

In the context of a major project requiring risky investment in new technology, this regulatory prescription is deliberate. AMI investment is quite different from investment in the assets used to provide distribution services. Accordingly, the CROIC requires the AER to approach its task under the CROIC differently to the task it has under the NER. In its draft determination the AER focuses on efficient operating and capital costs, as if it were operating under clauses 6.5.6 and 6.5.7 of the NER. In doing so, the AER approaches its task in the wrong way. This error infects the whole of the draft determination.

The AER fails to ask itself the correct question of the prudence of the investment. Prudence and efficiency are different things, and the CROIC provides a test for prudence.

The correct question is whether the incurring of the proposed expenditure involves a substantial departure from the commercial standard that a reasonable business would exercise in the circumstances. The relevant commercial standard is what a reasonable business would have done in UE's circumstances. That is a qualitative matter. The task is to compare UE's conduct against that standard to see if there was a substantial departure: again a qualitative matter. The framing of the test in this way reflects the nature of the investment; in an environment of uncertainty and risk the relevant assessment is the response of the business.

In contrast, the AER seeks to quantify a single 'commercial standard' of expenditure. It does so by simply adopting the estimate of expenditure prepared by Impaq Consulting on the basis of a 'bottom-up build' of costs. This is a misapplication of the CROIC. The Impaq Consulting estimate is not, and does not purport to be, an assessment of what a reasonable business would have done in UE's circumstances.

Impaq Consulting's expenditure estimates are based on its views of the activities and expenditure required to achieve compliance with UE's legal obligations or which Impaq Consulting otherwise considers to be necessary or important. Those expenditure estimates are calculated by Impaq Consulting based on its views as to the resourcing required for the activities and the amount assessed by Impaq Consulting as required or needed (e.g. level

[3] For *standard control services*, the control mechanism must be of the prospective CPI minus X form, or some incentive-based variant of the prospective CPI minus X form, in accordance with Part C.

and number of FTEs) and the unit cost(s) of that resourcing (e.g. salary rates, on-costs etc). Impaq Consulting 'builds' a view on the efficiency of expenditure, and the AER tests UE's proposed budget against that standard. The AER applies an efficiency test, as if it were operating under the National Electricity Rules (NER), and fails to apply a prudence test in the terms required by the CROIC.

Even if quantification were relevant, the AER does not substantiate why it considers Impaq Consulting's views to be the appropriate standard. Throughout section D.4, the AER makes criticisms of UE's forecasts and then says 'for these reasons' the appropriate commercial standard is Impaq Consulting's advice based on its bottom-up build. The criticisms may be a basis for a rejection of UE's forecasts (if that were the relevant approach) but they cannot form a basis of support for Impaq Consulting's views.

However more than that is required. The AER must establish why Impaq Consulting's views are the appropriate standard as a step to establishing that UE's conduct in incurring the expenditure does not meet that standard. To the contrary the AER fails to make any independent assessment of the quality and reliability of Impaq Consulting's estimates. The assessments, assumptions, views and estimates on which Impaq Consulting's cost 'build up' is based are often unexplained and/or unsubstantiated.

The AER has failed to recognise it has the responsibility to establish that incurring expenditure involves a substantial departure from the appropriate standard. It variously regards UE's proposed requirements as "highly unlikely", considers that those requirements "appear excessive" and considers that "UE has not demonstrated" the need. It is insufficient for the AER to speculate in such a way, and wrong for it to think it is for UE to demonstrate its requirements.

These misapplications of the CROIC result in the AER making a number of errors of law and/or fact in relation to UE's capital and operating expenditure forecasts.

2.2 Shortcomings in the AER Approach

The following quote is from a report commissioned by the Department of Primary Industry.[4]

> "The objective of the Victorian Government's Advanced Metering Infrastructure (AMI) Program is to transform the operation of the electricity industry to a smarter and more efficient digital environment by:
>
> - Rolling out new electricity smart meters and associated communications infrastructure to all residential and small business premises across Victoria by the end of 2013 (AMI Roll-out); and
> - Delivering new AMI enabled services to these customers (AMI Program).
>
> This transformation will lead to significant efficiency gains across the industry, as well as the avoidance of future costs. In addition, AMI will enable customers to make

[4] Benefit and costs of the AMI program, Oakley Greenwood, http://www.new.dpi.vic.gov.au/__data/assets/pdf_file/0003/45705/OGW-AMI-benefits-and-costs-report-.pdf

more informed decisions about their energy use and make it easier for them access new electricity pricing and services.

Increased competitive pressure in the retail market, combined with continued regulatory oversight will ensure that the benefits of the AMI Program are passed through to customers."

It is obvious from the above quote that this project is a large IT infrastructure project for the purposes of transforming the electricity industry and bringing it into the digital age. These types of large projects are inherently difficult and complex to implement. They require detailed project management, attention to detail and people that are dedicated to delivering a good outcome for Victorian consumers. These are all attributes of UE's program and its delivery partner Jemena Asset Management (JAM). This is clearly evidenced by the success of UE's delivery status to date. UE has the most advanced and operational AMI technology operating in the market to date.

Politically there is significant pressure on the project to continue and to reduce costs. UE supports the continuation of the project and faces significant internal pressures to reduce costs. Although costs are recovered in a cost pass through arrangement UE is required to manage within the constraints of its total business and the availability of scarce capital. The AMI project offers UE no prospect of increasing shareholder value, and therefore it will always be competing with internal funds against projects that provide UE with incentives rather than AMI where no incentive exists. However UE is mindful that the success of this project is critical to the company and the Victorian Government. The opportunity to be at the forefront of load management and deliver the benefits to Victorian customers is paramount.

The AMI project is not at a stage where a "quick-fix" can solve a political issues or those created by media which result in poor public perception of the program. UE has a comprehensive plan and detailed assumptions supporting its costs forecasts. It has examined these in detail and is confident that it has the right governance structure in place in deliver the AMI program efficiently, and to deliver benefits to customers. Reducing budgets to a level that is below current resourcing in order to drive costs to an unrealistically low level will simply lead to a delay in benefits and a possible project failure.

UE therefore urges the AER to review this Amended Budget in accordance with the CROIC and not to be influenced by the fact that project costs are higher than the Government originally expected. While UE strongly supports the AMI project, it is not responsible for the Government's decision to proceed with the project or the cost benefit analysis that supported that decision. In fact, the Victorian Auditor-General reached the following conclusions in relation to the original cost benefit analysis undertaken by CRA and Impaq Consulting Consulting[5]:

[5] Victorian Auditor-General, Towards a 'smart grid' –the roll-out of Advanced Metering Infrastructure, November 2009, page 22.

> "The cost-benefit analysis used to support the advice recommending that the government roll-out AMI had significant deficiencies. Its incremental approach to assessing the net benefits of the AMI project failed to provide a complete perspective of the AMI project on a consolidated basis.
>
> It also failed to take into account the implications of the implementation risks, particularly risks from unproven technology. These risks have now materialised and are starting to delay the roll-out of the AMI project.
>
> The cost-benefit study supporting the advice to roll-out AMI did not provide a comprehensive and realistic analysis of the AMI project. The merits of the economic case for the project are quite uncertain."

In addition to confirming the materialisation of AMI project roll-out risks, the Victorian Auditor-General also makes a number of criticisms of the AMI project cost benefit analysis. UE considers that the types of criticisms made by the Victorian Auditor-General are relevant to Impaq Consulting Consulting's report for the AER. In particular, UE considers that the Impaq Consulting Consulting report does not provide a realistic analysis of the project costs or implementation risks.

It is particularly noteworthy that the operating expenditure budgets proposed by Impaq Consulting Consulting are lower than UE's actual and projected expenditure for 2011. If clauses 6.5.6 of the NER were relevant to the AER's assessment of UE's budget application – which it is not – the AER would likely consider adopting a 'year 4' forecasting methodology.

Under a 'year 4' forecasting methodology, it is highly unlikely that the AER's would set forecast operating expenditure below the latest actual data. However, this is precisely the conclusion of Impaq Consulting Consulting's report. UE therefore considers that the draft determination adopts an aggressively low forecast, even within the context of a Chapter 6 price review.

These observations highlights the extent to which the AER's draft determination has departed from the requirements of the CROIC, which provides for the full recovery of prudent costs. They also illustrate that Impaq Consulting Consulting's operating expenditure projections do not satisfy the most rudimentary 'reasonableness test', because Impaq Consulting Consulting expects operating expenditure to reduce dramatically.

2.3 Concerns regarding cost incentives under the CROIC

The AER expressed concern that the AMI CROIC which determines the pricing and cost recovery arrangements for the roll-out of smart meters:

- does not provide distributors with incentives to minimise costs; and
- instead may provide incentives to increase expenditure or 'gold plate'.

The remainder of this section addresses these concerns.

2.3.1 Key points

The regulatory arrangements for the recovery of AMI costs are best described as cost pass through, subject to a budget threshold and prudency review. We agree that compared to traditional building block regulation, UE does not benefit if it reduces expenditure below the approved budget. However, UE still faces strong incentives to minimise expenditure. In particular:

- UE faces the risk of capital loss if its expenditure exceeds the budget by more than 10 per cent and the additional expenditure is found not to be prudent.
- The risk of capital loss can only be managed effectively if the entire project is subject to sound project management and governance arrangements.
- UE receives no financial benefit from incurring higher operating expenditure.
- At best, UE earns the regulated cost of capital on its capital expenditure assuming that there is no risk of capital loss. However, other network investment opportunities deliver the same or higher rates of return (through the service incentive scheme) with no asset stranding risk. From UE's perspective, while the AMI program delivers substantial community benefits, the rate of return does not compare favourably with other regulated network investments. As a capital constrained company, UE has no incentive to 'gold plate' AMI capital expenditure, especially as lower risk network investment opportunities are available.
- UE is also conscious of the negative customer impacts arising from higher AMI costs. The public concern regarding project costs creates further incentive (if any were needed) to minimise expenditure.
- UE's decision to manage the AMI project jointly with JAM is direct evidence that UE is seeking to minimise project costs and risks. The performance of the project to date in terms of costs and delivery further demonstrates that the project is being managed efficiently.

In any event, as discussed in section 2.1 above, the question of incentives is irrelevant for making a determination under the CROIC.

2.3.2 Detailed Discussion – CROIC incentives

The CROIC could be described as providing a 'cost pass through' arrangement in relation to AMI. However, such a description does not recognise the risks that distributors face in relation to cost recovery. In essence, distributors only have certainty regarding cost recovery if actual operating and capital expenditure does not exceed the approved budget by more than 10 per cent (CROIC clause 5I.2(a)(iii)). Any excess above 10 per cent cannot be recovered if the AER determines that it has not been incurred prudently (CROIC clause 5I.7).

In light of the above provisions, it is incorrect to conclude that the CROIC provides no incentives to reduce operating and capital expenditure. In fact, the CROIC provides an incentive to ensure that costs are incurred prudently in order to minimise stranded asset risk.

In theory, the incentive to manage stranded asset risk only arises if expenditure exceeds the budget by more than 10 per cent. Practically, however, project management for a

complex, major project such as AMI cannot be fine-tuned so that imprudent expenditure is tolerated up to, but not beyond, 11 per cent of the budget. The reality of managing the technology risks, process changes and logistical challenges inherent in the AMI project is that effective project control and governance arrangements must be in place across the entire project if the risk of cost stranding is to be minimised. Once these project control and governance arrangements are in place they apply to all expenditure for the entire project. These controls aim to deliver value for money for every dollar of expenditure.

It is also important to consider whether the CROIC provides incentives to incur expenditure unnecessarily. In considering this issue, it must be noted that any incentive to increase expenditure could only possibly apply to capital expenditure, not operating expenditure. This is because UE only earns a rate of return on capital expenditure and does not earn any profit from operating expenditure. In relation to capital expenditure, however, AMI does not provide the best network investment opportunity for UE's shareholders. Ordinary network investments earn a regulated rate of return with no stranded asset risk, and the potential for additional returns through the service performance incentive scheme. As UE is capital constrained (like all commercial enterprises), it is not credible to suggest that UE's shareholders would sanction 'gold plating' in the AMI project in order to earn the regulated Weighted Average Cost of Capital (WACC).

More generally, UE's broader commercial interests are served by successfully delivering the AMI roll-out without unnecessarily increasing costs to customers. UE is well aware of the negative publicity surrounding the AMI roll-out – a program that was sanctioned by the Victorian Government. The cost benefit analysis that led the Victorian Government to go ahead with the AMI roll-out substantially underestimated the project costs. This background creates media and political pressure to minimise project costs (although, for the reasons already noted, UE does not need any additional incentives to minimise expenditure).

2.3.3 Evidence of effective project management

In addition to examining the CROIC incentives from a conceptual perspective, it is equally important to consider evidence relating to UE's actual approach to program management. UE has provided detailed information in its submission to the AER which demonstrates that the company has sought to deliver the AMI project efficiently. The factual evidence regarding UE's project governance arrangements and its performance to date are ultimately more important than a theoretical consideration of the incentives provided by the CROIC.

The AER will be aware that UE has established a joint program with Jemena Electricity Networks under the management of Jemena Asset Management (JAM). The joint program has been designed to reduce risk, ensure compliance with UE's regulatory obligations and to maximise synergies by delivering almost one million meters (as a more cost-effective alternative to the separate development by each distributor of stand-alone programs). If UE intended to 'gold plate' the capital expenditure program it would not have established a joint program.

Chapter 4 of UE's AMI Budget Application 2012-2015 (February 2011) provides details of the governance arrangements for the Joint Program. We do not want to repeat the submission here, but the following points are worth noting:

- The governance and contractual arrangements provide effective control over project costs and risks. Cost efficiency is an explicit objective of the Service Delivery Plan which forms a schedule to the agreement between UE and JAM for the AMI roll-out.
- The Services Delivery Plan provides the following project management tools, which are focused on delivering efficient outcomes:
    - Client relationship management, including governance arrangements, key interfaces and contacts;
    - Service performance management, including key performance indicator metrics;
    - Vendor management, which addresses various matters including procurement policy and sourcing strategies;
    - Quality management, which references JAM's quality policy and provides for a quality plan audit to ensure that JAM maintains its accreditations in accordance with its quality policy;
    - Business continuity planning, which sets out provisions relating to emergency management and disaster recovery arrangements; and
    - Risk management, which explains that JAM conducts risk analysis in a way that is consistent with UE's Risk Management Policy and Framework.
- The project management activities listed above provide internal controls that aim to ensure the efficient and timely delivery of the AMI roll-out program. The existence of these controls should allay any residual concerns regarding the incentive properties of the CROIC.

UE's submission also explains that a significant component of roll-out costs will be incurred through a series of major contracts let competitively with external suppliers.

The success of the joint program in terms of achieving key project milestones provides further evidence that the project is subject to effective management control.

2.3.4 Is the budget expenditure prudent?

Previous submissions describe the joint program and cost sharing arrangements in place between UE and JEN. It explains that these arrangements provide substantial benefits to UE in terms of project risk management and cost minimisation, especially in relation to:

- project plans and project management processes;
- target IT architectures;
- target business processes;
- information systems products/vendors, and procurement strategies; and
- deployment plans.

Prior to establishing the joint program and cost sharing arrangements, the UE board recognised that AIMRO was a significant risk for the business. AIMRO is an innovative project involving the development, installation and operation of cutting-edge metering and communications technology on a very large scale in a very short time. Board members had personal experiences of large new technology IT projects and the strong likelihood of overruns - in terms of time and budgets - in relation to such projects. The Board considered the risks associated with AIMRO to be serious and significant, and it wanted to be assured

that appropriate project management arrangements were in place.

Following the Victorian Government's decision to mandate AIMRO in July 2006, UE recognised that AIMRO was a new project based activity that it had never performed in house and so it did not have the immediate capability to deliver the project in house. UE examined its existing Operating Service Agreement (OSA) with JAM and considered whether alternative arrangements would better meet the requirements of the business regarding AIMRO. UE recognised that clause 13 of the OSA would provide JAM with a 6 per cent gross margin in addition to the incremental costs of delivering the AIMRO project. Whilst JAM would provide management expertise in return for the 6 per cent margin UE wanted to ensure that the payment of a margin reflected a reasonable commercial decision in the circumstances at that time.

Having considered the availability of other options and its legal position, UE concluded that the OSA arrangement, including the payment of a 6 per cent margin, would provide the best project outcomes on the condition that appropriate project management arrangements could be established with JAM. As explained in earlier submissions, suitable project management arrangements were established following extensive negotiations between UE and JAM, which provided UE with further confidence in relation to the effective and efficient management of project risks and costs. These negotiations led to the Service Requirements Agreement (SRA) whichwas initially signed on 1 October 2007 and then subsequently re-stated in December 2008.

Importantly from UE's perspective, the negotiation of the SRA resulted in UE maintaining a considerable degree of control over the program budget. In particular, UE has access to sufficient information in order to satisfy itself that the budget and all invoices are able to be substantiated fully. In effect, therefore, UE was able to negotiate an important concession or improvement compared to the then existing OSA provisions at the time. For these reasons, UE chose contractual arrangements as likely to lead to better outcomes than internal provision of services.

The governance arrangements for the joint program, its contractual obligations to make payments and UE's active role in reviewing cost estimates provides strong assurance that the expenditure outlined in this budget application is likely to be incurred. In terms of the revised CROIC provisions, UE fully reiterates that the amended budget are fully compliant with the revised CROIC.

2.3.5 A substantial departure from the commercial standard?

This amended budget application and previous applications have already explained that UE expects the joint program to deliver significant benefits compared to the best available alternatives. In particular, the joint program will deliver benefits from economies of scale by procuring services for two firms as opposed to one. Examples of the benefits that result from these arrangements include the avoidance of duplication of a large range of services and costs. For example the joint program can procure IT services for both UE and JEN from one vendor under a single contract.

As noted above when the Government announced its intention to mandate the roll-out of AIMRO in July 2006, UE was conscious of the risks associated with such a project,

particularly given that the project involves a very large program of expenditure encompassing new technology and changes to IT systems. In addition to these risks, UE was conscious that AIMRO is a project that pervades the entire business including back office activities, billing, asset management and network operations. The interface and transitional issues arising from the AIMRO project placed JAM in a unique position to identify and manage these risks effectively.

To adopt a contrary position and deliver the project in-house or via an alternative service provider or providers would have exposed UE and customers to substantial and unacceptable risks.

In the circumstances, that UE faced in 2006, including the contractual impositions of the OSA, the approach adopted by UE in relation to evaluating options for procurement of AIMRO services, and in negotiating the joint program arrangements are very much consistent with the commercial standard that a reasonable business would exercise. This budget application therefore contemplates that the AER will not be able to establish the requirements of clause 5C.3(b)(iv) of the revised CROIC, and therefore UE's expenditure must be approved pursuant to clause 5C.3.

The substantial majority of the joint project costs must be accepted by the AER without further analysis, whilst the remaining costs would be subject to the 'commercial standard' test required by clause 5C.3(iv). As a practical matter, under either approach, the AER's conclusions regarding the approval of the budget application should be unaffected. In particular, one of the key benefits from the joint program is that it provides substantial savings through an extensive and robust tendering process, the costs of which to UE are far lower than it would have incurred under the next best alternatives.

On the other hand, an examination of the competitively tendered contract costs under the joint program followed by a separate consideration of the non-tendered costs should also conclude that the total expenditure is prudent and must be approved pursuant to clause 5C.3 of the revised CROIC. Given the circumstances faced by UE in 2006, including its pre-existing contractual obligations, and recognising that the low costs achieved through competitive tendering under the joint program could not be achieved by UE without also incurring the 6 per cent gross margin, determining to proceed with the payment of that gross margin meets the commercial standard of the reasonable business.

It should be noted that UE previously sought independent expert advice from by Ferrier Hodgson Forensics Pty Ltd (Ferrier Hodgson Forensics) to examine the reasonableness of the 6 per cent gross margin[6]. Greg Meredith is a forensic accountant with Ferrier Hodgson Forensics.

Mr Meredith found that the range of gross margin that would be reasonable and efficient for JAM to receive for provision of its services in respect of the roll-out of advanced interval metering in the context of the UE/JAM Agreement is 5.0 per cent to 7.3 per cent. Mr Meredith noted that whilst the OSA and SRA refer to a "6 per cent gross margin", having

[6] See UE's Updated Pricing Proposal to the Essential Services Commission, 18th June 2008, pages 35-36.

reviewed budgets for the SmartNet program and invoices AAM has issued to UE, the 6 per cent is actually a "mark up" of costs not a "margin". A 6 per cent "mark-up" converts to a "margin" of 5.66 per cent (1-(1/1.06)). Hence, under the AIMRO SmartNet Program, UE is paying a gross margin of 5.66 per cent to JAM on incremental costs excluding corporate overheads.

Mr Meredith further explained that corporate overheads are mainly employees of JAM providing additional commercial and general management, regulatory support and specific electricity distribution asset management expertise. Any time spent by these JAM staff in relation to the provision of the AIMRO services are costs absorbed by JAM. This observation means that the net margin earned by JAM will be lower than 5.66 per cent. UE noted that Mr Meredith's comments provide further support that the SRA does not reflect a substantial departure from the commercial standard that a reasonable business would exercise.

3 Amended budget and charges forecast

3.1 Capital Expenditure

The table below provides a summary of UE's revised capital forecast compared to the AER's decision.

Table 3.1: Revised Capital Forecast (Real 2011 $M)

	2012	2013	2014	2015	Total
Proposed Budget	112.4	19.0	8.1	7.8	147.3
AER DD	66.9	14.2	5.4	3.9	90.4
Amended Budget Forecast	100.8	17.3	5.8	5.5	129.4

3.2 Operating and Maintenance Expenditure

The table below provides a summary of UE's revised operating and maintenance forecast compared to the AER's decision.

Table 3.2: Revised Operation and Maintenance Forecast (Real 2011 $M)

	2012	2013	2014	2015	Total
Proposed Budget	28.6	23.7	22.0	22.2	96.5
AER DD	18.8	15.2	13.2	13.4	60.6
Amended Budget Forecast	29.6	24.5	21.8	22.0	97.9

3.3 Amended Revenue Requirements

The table below provides a summary of UE's revised revenue requirements for the 2012 - 2015 budget period.

Table 3.3: Amended Revenue Requirements (Real 2011 $M)

	2012	2013	2014	2015
Return on Capital	15.3	16.5	13.9	11.9
Depreciation	37.8	42.8	37.6	35.6
Operating & Maintenance costs	29.6	24.5	21.8	22.0
Tax Liability	0	0	0	0
Total revenue requirement	**82.7**	**83.9**	**73.5**	**69.4**

3.4 Amended Meter Charges

The table below provides a summary of UE's revised metering charges for the 2012 -2015 budget period.

Table 3.4: Revised Metering Charges (Nominal)

Meter	2012	2013	2014	2015
Single phase single meter	$106.35	$122.78	$141.74	$163.63
Single phase single meter with contract	$108.54	$125.31	$144.66	$167.01
Three phase direct connected meter	$119.94	$138.46	$159.85	$184.54
Three phase current transformer connected meter	$127.94	$147.70	$170.51	$196.85

4 Capital Expenditure

This chapter sets out the reconciliation between UE's proposed budget and the AER's draft decision for capital expenditure. The chapter also provides details of UE's amended capital budget. Further support can be found in Appendix A: Jemena Asset Management, Response to the AER Determination on the Victorian Advanced Metering Infrastructure Review, 26 August 2011 of this submission.

4.1 Detailed Reconciliation

The table below provides details of UE's capital forecast for the 2012 -2015 period

Table 4.1: Revised Metering Charges(Real 2011 $M)

Description	Proposed Budget	AER Draft Decision	Difference	Amended Budget
Mass roll-out – meters	70.9	44.8	(26.2)	58.2
Mass roll-out – installation	27.9	18.7	(9.2)	27.1
New connections	14.7	4.2	(10.6)	6.9
AMI technology	11.2	10.9	(0.3)	11.1
IT	20.3	9.8	(10.5)	20.3
Back-office	2.2	2.1	(0.1)	5.7
Total	**147.3**	**90.4**	**(56.9)**	**129.4**

4.2 Exchange rate

UE's original AMI forecast included a US exchange rate $0.85, compared to the AER's draft decision of $1.04. UE accepts that the exchange rate is now more favourable than the budget application and has revised its forecast per the table below for the 2012-2015 period.

Table 4.2: Amended USD exchange rate

	2012	2013	2014	2015
US exchange rate	$1.05	$0.96	$0.92	$0.88

Exchange rates are inherently difficult to forecast and therefore UE provides Appendix F of this submission as the substantiation for the amended budget. It is not correct for the AER to simply apply the same forecast exchange rate for the entire budget period. The AER's forecast is based on a simple one month average of actual data rather than a forecast of market conditions for the 2012-2015 period. UE has forecast an exchange rate of $1.05 which is consistent with the AER's draft decision and the current rate at the time of

preparing this submission, however the rates for 2013-2015 are substantially different and reflect a forecast of conditions at the time the hedges are put into place for the purchase of meters.

UE is acutely aware that in recent months the exchange rates have become extremely volatile. In order to mitigate against any exchange rate risk UE is proposing (for 2012) to update the exchange rate forecast prior to the AER's final decision with the actual exchange rate it obtains for the 2012 purchases. At this stage UE has not placed any orders for 2012 and is waiting for the outcome of the Department of Treasury review of the AMI program. If the outcome of this review provides a clear and unambiguous statement to continue the program UE intends to place an order for the 2012 quantities prior to the AER's final decision so that it can mitigate against foreign exchange risk. UE will provide separate correspondence to the AER as this matter is finalised.

UE is also assuming that should the Department of Treasury's review recommend to the Government that the program continues, the current Government request to distributors to allow customers discretion to "opt out" of receiving a meter will cease. This Government request is causing confusion with customers and significantly impacting the roll-out's efficiency.

4.3 Two element meters

For the sake of clarity UE has always supported the installation of a single element meter. All of its systems and processes to date have all been built on this working assumption. The installation of single element meters is a key reason why UE's roll-out program has been so successful.

The AER has determined that two element meters are out of scope of the CROIC. It will only allow out of scope items if UE is able to demonstrate that there are associated net benefits to customer and market participants.

UE notes that the CROIC provides strict clauses to complete the roll-out within certain timeframes. UE is at a stage of the roll-out where in order to meet the mandated timeframes of the CROIC it must install two-element meters. It is for this reason that UE argues that the two-elements are within scope of the CROIC.

This situation has come about due to the moratorium of time of use tariffs. Although the AER's draft decision claims that the moratorium ends at the end of this calendar year, there has been no indication that the moratorium will end. UE is mindful that if the moratorium ends there will be significant stakeholder engagement required in order to implement a time of use tariffs. UE has not included this amount in its original proposal nor this amended budget. In the event that the AER determines that two element meters are out of scope, UE requires an additional $1m for additional stakeholder management. This is explained in further detail below.

4.4 Related party margins

The errors in the AER's approach to applying the CROIC discussed in section 2.1 are relevant here. The AER seeks to seeks to quantify a single 'commercial standard' for a

related party margin for use as the benchmark against which to assess the quantum of UE's margin.

In doing so it deconstructs a 'commercial standard' margin into constituent parts and focuses on irrelevant efficiency considerations rather than relevant prudence considerations. This theoretical and complex analysis fails to address the proper inquiry: did UE's decision to incur the margin involve a substantial departure from the commercial standard that a reasonable business would exercise in UE's circumstances? It's a consideration of UE's conduct in incurring the margin in all the circumstances that is relevant.

As discussed in section 2.3.3, the circumstances include that, UE has established a joint program with Jemena Electricity Networks under the management of Jemena Asset Management (JAM). The joint program has been designed to reduce risk, ensure compliance with UE's regulatory obligations and to maximise synergies by delivering almost one million meters (as a more cost-effective alternative to the separate development by each distributor of stand-alone programs).

4.5 Second meter provider

It is pleasing that the AER concurs with UE that it is a prudent commercial standard to have two meter providers, however disappointing that the draft decision in effect provides an insufficient allowance to be able to implement. In UE's view the AER has underestimated the complexity to introduce a second meter provider into the current systems and processes. Further details are found in section 4.10.3 below for IT related costs.

4.6 Mass roll-out - meters

The reconciliation between UE's original submission and the AER's draft decision is provided below

Table 4.3: Mass meter roll-out reconciliation (real 2011 $m)

Description	Reconciling amount
Meter numbers	5.2
Exchange rate	11.7
Related party margin	2.0
2 element meters	5.7
Antennas	0.8
Other	0.8
Total	**26.2**

4.6.1 Meter numbers

In accordance with the CROIC UE provided the AER with a budget application for the 2012 – 2015 period on 27 February 2011. That budget application included an underlying assumption that the company would complete 50 per cent of the meter roll-out by 2011 and the remaining 50 per cent by 2013. On 30th May 2011 UE provided the AER with a revised roll-out forecast. The revised forecast was to cater for a change to the forecast number of meters to be completed in 2011. The forecast was amended to take into account the slow-down in meters replaced due to the significant media exposure and subsequent negative public reaction to the roll-out.

The roll-out was revised so that 46 per cent were forecast to be installed by the end of 2011 with the remaining 54 per cent of meters to be installed by December 2013. The AER has failed to take into account the revised volumes provided by UE on 30 May 2011. A summary of the revised forecast is provide in the table below, with a detailed reconciliation of the AER's error contained in Appendix C Detailed UE AMI cost model.

Table 4.4: Meter roll-out volumes

	2012	2013	2014	2015	Total
27 Feb 2011	274,385	32,684	0	0	307,069
30 May resubmission	313,675	32,684	0	0	346,359
AER DD	274,385	32,684	0	0	307,069
Revised Submission	315,461	31,769	0	0	347,229

UE's program is currently behind schedule due in part to the number of customers refusing to have a meter installed until the government review is complete. At this stage there is no change to the current forecast of meters, however UE is monitoring the situation closely and will provide the AER with an amended budget application if it is unable to install the required meters this calendar year.

4.6.2 Antennas

UE provided detailed modelling supporting each line item of the cost forecasts. Within the meter roll-out category there was a specific line item for the purchase of antennas (noting that the installation is included in the meter installation line item). Antennas are an important part of the roll-out, in particular where meters are housed in metal boxes. For more detailed reasons see the 27 February 2011 submission – appendix A.

The AER's draft decision model completely removes the antenna cost forecast from the determination. This appears to be a modelling error rather than a conscious decision to not include the item. For example table 175 of the Impaq Consulting report specifically shows the LAN antenna unit rate but makes no allowance in the model for the item.

UE believes that his modelling error should be corrected for in the final decision. Appendix C shows the modelling error and the corrected amount.

4.7 Mass roll-out – installation

In accordance with the CROIC UE provided the AER with a budget application for the 2012 – 2015 period on 27 February 2011. That budget application included an underlying assumption that the company would complete 50 per cent of the meter roll-out by 2011 and the remaining 50 per cent by 2013. On 30th May 2011 UE provided the AER with a revised roll-out forecast. The revised forecast was to cater for a change to the forecast number of meters to be completed in 2011. The forecast was amended to take into account the slow-down in meters replaced due to the significant media exposure and subsequent public reaction to the roll-out.

The roll-out was revised so that 46 per cent were forecast to be installed by the end of 2011 with the remaining 54 per cent of meters to be installed by 2013. The AER has failed to take into account the revised volumes provided by UE on 30 May 2011. A summary of the revised forecast is provide in the table below, with a detailed reconciliation of the AER's error contained in Appendix C Detailed UE AMI cost model.

Table 4.5: Meter installation volumes

	2012	2013	2014	2015	Total
27 Feb 2011	274,385	32,684	0	0	307,069
30 May resubmission	313,675	32,684	0	0	346,359
AER DD	274,385	32,684	0	0	307,069
Revised Submission	315,461	31,769	0	0	347,229

In effect the AER modelling error for meters is replicated in this category

4.7.1 Truck support rates

The AMI program is a discreet program specifically structured to deliver the AMI services as defined by the CROIC. This program is shared with Jemena. The program has competitively tendered the truck rates within a contract that provides a number of services.

It is not appropriate to remove one service from a competitively tendered contract and compare that single service to another rate that has been established under another process, also for a number of different services. In addition clause 5C.3 of the CROIC states:

For the purposes of clause 5C.2(b), the expenditure is prudent and must be approved:

(a) Where that expenditure is a contract cost, unless the Commission established that he contract was not let in accordance with a competitive tender process….
(b) (iv) the expenditure will be incurred but incurring the expenditure involves a substantial departure from the commercial standard that a reasonable business would exercise in the circumstances.

The AER has not established either of these two points nor will it be able to. The contract has been competitively tendered (which includes a suite of services) and a normal commercial standard would be to tender a suite of services in order to obtain the best price overall for all the services tendered.

Therefore under the CROIC the AER is not able to change rates to be consistent with the outcomes of the electricity price review.

Chapter 7 of Appendix A: Jemena Asset Management, Response to the AER Determination on the Victorian Advanced Metering Infrastructure Review, 26 August 2011provides further details in relation to truck support rates.

4.8 New connection meter volumes

The AER has determined that the meter volumes for new connections are too high and do not reconcile to the recent electricity price review. UE accepts this and has provided a revised forecast as per the table below.

Table 4.6: Meter new connection volumes

	2012	2013	2014	2015	Total
27 Feb 2011	17,158	15,037	13,524	13,524	59,243
30 May resubmission	17,158	15,037	13,524	13,524	59,243
AER DD	6,275	5,625	4,988	4,758	21,696
Revised Submission	13,942	6,289	5,171	4,948	30,350

4.9 AMI technology

The AER has accepted the forecasts for this category with the exception of related party margins. UE's forecast remains unchanged from previous submissions.

4.10 IT

The reconciliation between UE's original submission and the AER's draft decision is provided below

Table 4.7: IT reconciliation (real 2011 $m)

Description	Reconciling amount
Lifecycle replacement	1.3
Two element meters	1.6
Second meter provider	7.1
Other	0.5
Total	**10.5**

4.10.1 Lifecycle replacement

The AER has accepted the costs as reasonable however has determined the deferral of expenditure to a later period. It is normal business practice to forecast deferrals at the time they are due for replacement – this is a normal commercial standard. At the time of replacement the equipment will be six years old and is therefore scheduled for replacement.

In setting a budget it is the AER's draft decision that is outside of a normal commercial standard. If the actual deferral can be made then it will be, however for the purposes of setting a budget within the constraints of the CROIC UE has set a prudent budget consistent with industry standard to replace the equipment when it is due for replacement.

In addition UE will be required to purchase the equipment some months prior to the actual installation. Therefore even under a deferral program UE will be required to purchase the equipment in 2015.

4.10.2 Two element meters

See section 4.3 above

4.10.3 Second meter provider

The AER's draft decision provides approximately $1.3m allowance to introduce a second meter provider compared to UE's forecast cost of $8.4m

It is pleasing that the AER concurs with UE that it is a prudent commercial standard to have two meter providers, however disappointing that the draft decision is so low. In UE's view the AER has underestimated the complexity to introduce a second meter provider into the current systems and processes.

The AER and Impaq Consulting have incorrectly concluded that procuring and integrating a second meter supplier will have a minor impact and consequently incur limited additional costs. As a second meter supplier tender process has not been undertaken and the potential market offerings are unknown, it is premature to draw conclusions on the measures and spend required to integrate another meter vendor into production.

It should be recognised that the AMI minimum functional specification is a requirements document and not a standards document and as such dictates functionality requirement rather than standards for interoperability. From experience UE has found that meter vendors that have each interpreted and developed a specification according to their own methodology. It is well known that meter suppliers to the Victorian. AMI market have no interoperability capability and that each vendor requires a parallel integration project, development and delivery. The fact that they share a common physical layer for communications allows the meters to coexist but not to interoperate.

Kema have been engaged by JAM to consider aspects of the Draft Determination. Kema have considered the process of selecting and engaging alternative meter provider and support JAM's contention that the introduction of a second meter provider will represent a significant task incorporating a high degree of complexity.

> "However, the complexity increases when the interface between the NIC and the meter proper is considered. This interface will be unique to each meter supplier. The NIC must include the proper firmware for the meter to which it is attached. If the NIC firmware is updated, the network must be able to determine the meter attached to the NIC and download the correct firmware to each NIC. Further, the meters themselves include firmware that may require updating. This again requires that the network be able to determine the meter type at each node. We note that, to the best of our knowledge, standard NMSs and MDMSs do not cater to this system design.
>
> The final complication is realized when a mass update of the meter or NIC firmware is delivered. The delivery mechanism "seeds" the updated firmware across the network and the seeded nodes then update their neighbors. But consider a local network with 500 meters. If one meter near the periphery of the network is replaced with a meter of the second supplier, the delivery of a firmware update to that meter can be problematic. How can its upstream neighbors know to propagate an update for a different meter type? How can the NMS and MDMS track the update and be certain it has been received at all appropriate nodes?
>
> JAM is correct in expecting the establishment of a second meter supplier to be more than a trivial effort. We also note that the substantiation document identifies 98% of the estimated cost of this item to be procured through competitive tender."[7]

The AMI solution is integrated and vendor specific. Each component of the end to end AMI Solution requires rework to integrate each brand, model and type of meter adopted. In most cases such rework to accommodate another meter vendor will result in a full version release (major release) for each AMI solution component system including Network Management System, Meter Data Management System, Market Transaction Suite, Enterprise Service Bus (WebMethods), Connection Point Management / Billing System (SAP), Cognos Reporting, and possibly Business 2 Business Gateway as well.

The current UE AMI implementation has been fully tested and integrated exclusively with the Secure meter models. Whilst the current AMI system architecturally supports the integration of a second meter vender, the integration effort and acceptance testing of a second meter supplier has not been completed.

The scope of the UE second Meter Vendor Project allows for:

- Contract negotiation and execution with a second meter supplier
- Integration design for the new meter models,
- Acceptance testing of the new meter models,

[7] The SmartNet Program – Advanced Meter Infrastructure Rollout for United Energy Distribution and JEN Electricity Networks. Review of AER Draft Determination. August 2011 p 2-2.

- Integration of the new meter models into the UE back office systems, including network management systems, enterprise service bus, meter data management, asset management system, business intelligence reporting and logistics,
- Complete End to End (meter to market) regression testing, and
- Training for the new meter models (installation crews and back office).

The project is forecast to occur over six months and to be complete during 2012.

The project will be resourced using a combination of base resources from the SmartNet and Customer Service Strategy and Architecture group, AMI Acceptance Testing group and external contractors to augment the base capacity of these groups during the project.

AMI technology resources are forecast to be 30 per cent internal and 70 per cent external resources. The second Meter Vendor Project is not shared with JEN and full costs are UE alone. Given the reasons above, UE believes that its original budgeted forecast of the costs of incorporating a second meter vendor are prudent and should be approved as part of UE's budget.

4.11 MRO Back Office

The AER has accepted the forecasts for this category with the exception of related party margins. Since the original budget submission a number of factors have arisen that necessitates a revision to the forecasts.

Electrical Safety Victoria has conducted a safety review of the program which has had an impact on cost forecasts, specifically this amended budget now includes:

- Additional supervision of field resources, and
- Additional auditing requirements for installations.

These requirements provide additional assurance to the safety of the program.

These are explained in more detail in Appendix A: Jemena Asset Management, Response to the AER Determination on the Victorian Advanced Metering Infrastructure Review, 26 August 2011.

5 Operating Expenditure

This chapter sets out the reconciliation between UE's proposed budget and the AER's draft decision for operating expenditure. Further support can be found in appendix A of this submission

5.1 Detailed Reconciliation

The table below provides details of UE's operating forecast for the 2012 -2015 period

Table 5.1: Operating Forecasts for the 2012-2015 period

Description	Proposed Budget	AER Draft Decision	Difference	Amended Budget
Asset strategy and planning	7.0	0.8	-6.2	4.1
Asset operations	5.3	1.4	-3.9	6.5
Customer contact and back office	11.8	1.4	-10.4	11.7
AMI network operations	4.2	4.2	0	6.9
Meter data collection	1.3	1.4	0.1	2.2
AMI transitional business activities	2.5	2.5	0	2.7
Back haul communications	2.0	0.4	-1.6	1.0
Management	3.1	1.1	-2.0	3.1
Finance and HR	2.5	0.4	-1.9	2.7
Service delivery	3.8	2.1	-1.7	4.3
Stakeholder relations	0.8	0.0	-0.8	0.8
Premises	2.0	2.0	0	2.0
Base IT	4.0	4.0	0	4.0
Software licences	7.6	7.6	0	7.6
Hardware maintenance	3.6	3.6	0	3.7
Operating software	3.2	3.2	0	3.2
Infrastructure support	18.0	16.4	-1.6	17.8
Metering IT	13.4	7.0	-6.4	13.5
Other	0.0	0.9	0.9	0.2
Total	**96.1**	**60.6**	**35.5**	**98.1**

*Other is debt raising costs

5.2 Asset strategy and planning

The AER adopted the asset strategy and planning costs based on Impaq Consulting's recommended revision. In UE's view the AER has failed to demonstrate why the company's forecast are a substantial departure from the commercial standard that a reasonable business would exercise in the circumstances.

In addition the AER has failed to fully understand the scope and functions within this category and assuming the equivalent of only 1.5 telecommunication engineers are required to deliver AMI services within this function.

UE has revised its forecast slightly due entirely to the transfer of functions to a different category (asset operations) however it should be noted that a substantial number of the forecast costs are for positions that are already filled and have been filled for some time.

Further details can be found in Appendix A: Jemena Asset Management, Response to the AER Determination on the Victorian Advanced Metering Infrastructure Review, 26 August 2011Section 17

5.3 Asset operations

The AER considers that UE has not demonstrated that the resourcing for this activity to be of a commercial standard as the number of tests resulting from the forecast expenditure is materially higher than the minimum requirements of the Australian engineering standards AS1284 and UE's other regulatory obligations.

In UE's view the AER analysis is based on flawed batch sample test methodology. The AER's assumption:

- Does not account for the time required on site to remove the meter
- Does not account for the time to install the new/replacement meter
- Does not account for the updating of registers/systems etc.
- Fails to recognise the price of a NATA laboratory would charge for a test

Accordingly UE maintains is forecast for asset operations noting the transfer of costs from asset strategy. Further details can be found in Appendix A: Jemena Asset Management, Response to the AER Determination on the Victorian Advanced Metering Infrastructure Review, 26 August 2011 Section 18

5.4 Customer contact and back office

The AER adopted the customer contact and back office costs based on Impaq Consulting's recommended revision. In UE's view the AER has failed to demonstrate why the company's forecast are a substantial departure from the commercial standard that a reasonable business would exercise in the circumstances.

The AER has failed to consider that a substantial number of positions are already in place at the moment and will be in place until at least the closure of legacy systems. UE currently has two IT systems in place in order to deliver the AMI program. The old legacy system currently retires one meter at a time. This decision is the key reason why UE has been able

to install and put in market so many AMI meters and keep the IT capital cost down. Polluting new systems with old accumulation data is expensive in terms of money and time.

In addition UE has not duplicated costs with functions for standard control services. These have been clearly identified in the model and excluded from the cost forecasts.

Further details can be found in Appendix A: Jemena Asset Management, Response to the AER Determination on the Victorian Advanced Metering Infrastructure Review, 26 August 2011Section 19

5.5 AMI network operations

The AER's draft decision seeks to reduce UE's forecast on the basis that the forecast expenditure is materially higher than the minimum requirements of Australian engineering standard AS1284 and UE's other regulatory obligations.

In part UE accepts this and has amended the forecasts to reflect a revised forecast of testing volumes. However UE rejects the basis of the batching approach proposed in the draft decision. It is not a practical solution and is not representative of how the testing program is delivered.

As per section 5.2 UE has also taken the opportunity to correct a classification of resources from asset strategy and planning to AMI network operations.

Further details can be found in Appendix A: Jemena Asset Management, Response to the AER Determination on the Victorian Advanced Metering Infrastructure Review, 26 August 2011Section 7

5.6 Meter data collection

The AER has accepted UE's original forecast for meter data services. Since the original budget submission UE has obtained further details of the forecast and is proposing to amend them in this amended budget application.

The original budget was based on applying the same unit rate for meter data collection through-out the life of the program. Based on information received from the provider of services this approach is not valid and does not cover the fixed costs of delivering this service. It was incorrect of UE to assume that a meter data collection service would be delivered at the same rate for a declining meter population as it does for having over 650,000 meters. Accordingly the budget has been amended to reflect the latest information received from the service provider.

Further details can be found in Appendix A: Jemena Asset Management, Response to the AER Determination on the Victorian Advanced Metering Infrastructure Review, 26 August 2011 Section 5

5.7 AMI transitional business activities

The AER has accepted UE's forecast for this activity therefore no additional submission is required.

5.8 Back haul communications

The AER has not accepted that UE's contract for backhaul communications was let in accordance with a competitive tender. Even if that were true the AER has failed to demonstrate why the company's forecast are a substantial departure from the commercial standard that a reasonable business would exercise in the circumstances.

The current expenditure on backhaul communications is consistent with the contract that was competitively let in 2008 and more than that allowed by the AER in the draft decision. A review of the forecasts has uncovered a modelling error for UE. Accordingly the amended budget has been reduced, however is higher than the AER draft decision.

Further details can be found in Appendix A: Jemena Asset Management, Response to the AER Determination on the Victorian Advanced Metering Infrastructure Review, 26 August 2011 Section 20

5.9 Management

The AER adopted the management costs based on Impaq Consulting's recommended revision. In UE's view the AER has failed to demonstrate why the company's forecast are a substantial departure from the commercial standard that a reasonable business would exercise in the circumstances.

There are two specific categories of management included in this function. One management function for the management of the program and another management function for the functions of UE.

Program management consists of the resources required to manage the program on a day to day basis, including administrative staff. There are detailed governance structures in place, monthly reporting packs, management of overall delivery that has not been included in the detailed line items

UE Management consists mainly of "regulatory costs" required by the project. For example preparing submissions such as these, any revised budget application in the future, annual pricing applications, attendance at various government sponsored committees (e.g. AMI policy group) consultant costs, audit and legal costs required under the CROIC in order to be compliant.

It is incorrect to assume only one FTE manages the program without any consideration of the detailed requirements of the CROIC.

Further details can be found in Appendix A: Jemena Asset Management, Response to the AER Determination on the Victorian Advanced Metering Infrastructure Review, 26 August 2011 Section 21

5.10 Finance and HR

The AER considers that the assumptions that UE has used for its forecast for finance and HR costs for 2012-1025 does not meet the commercial standard test because the level of resourcing requirements are excessive compared to the number of transactions involved,

the corresponding reporting requirements for these transactions and the minimal level of financial advice required for already contracted expenditure.

The AER analysis lacks an understanding of the requirements of these functions. The project is a substantial business unit with significant reporting and human resource obligations. By the end of the project UE will have spent approximately $350m on the capital program and have an annual operating budget of $30m.

Programs of this size require significant reporting, human resource and financial arrangements. It is not as simple as assuming that all transactions will be automated and that resources are not required. You cannot automate employee retention programs, engaging personnel, health and safety assessments of office based employees, training programs, performance reviews and performance planning etc. Nor can you automate update of fixed assets, payment of invoices, production of reports, or forecasting of budgets. These functions all require significant human involvement and interface across all sections of the business. Again a significant portion of these people are in already engaged by the program in order to meet all the statutory and regulatory requirements.

Further details can be found in Appendix A: Jemena Asset Management, Response to the AER Determination on the Victorian Advanced Metering Infrastructure Review, 26 August 2011 Section 21

5.11 Service delivery

The AER has rejected UE's forecast for this category on the basis that this level of resourcing requirement is not justified at this stage of the program. In addition these roles could be merged into other categories.

The forecast provided by UE is consistent with current staffing levels. The AER has not considered the detailed functions of service delivery which includes significant interfaces between suppliers of equipment, scheduling of works, interfaces with installers. Managing this process is an important success factor for the smooth delivery of AMI.

Further details can be found in Appendix A: Jemena Asset Management, Response to the AER Determination on the Victorian Advanced Metering Infrastructure Review, 26 August 2011Section 22

5.12 Stakeholder engagement

The AER considers that this expenditure has been recovered under asset operations and management forecast for which an allowance has been provided for in the draft decision.

UE has not claimed expenditure for stakeholder relations under other categories. Whilst it is true that some management staff participate in some stakeholder functions, these are not double counted in UE's submission. Stakeholder engagement is a significant function in its own right, in particular under the current circumstances.

Significant effort is required to pro-actively manage and support industry and stakeholder relations. For example managing AMI related customer complaints (which have increased significantly since the original application), managing retail enquires, managing media enquiries and supporting various industry workshops.

Stakeholder management has four main categories:

- Industry development
- Retailer engagement
- Mass roll-out communications
- Complaints team

It is also worth noting that this forecast will increase if time of use tariffs are introduced in 2012. Significant education will be required in order to implement these tariffs as smoothly as possible. UE will submit updated forecasts when the Department of Treasury complete their review of the AMI program. UE expects an additional $1m will be required in 2012 to implement a government lead public affairs/communication strategy. This includes multi-channel advertising, direct customer mail-out and background briefings for key stakeholders.

Further details can be found in Appendix A: Jemena Asset Management, Response to the AER Determination on the Victorian Advanced Metering Infrastructure Review, 26 August 2011 Section 9

5.13 Premises

The AER has accepted UE's forecast for this activity therefore no additional submission is required.

5.14 Base IT

The AER has accepted UE's forecast for this activity therefore no additional submission is required.

5.15 Software licences

The AER has accepted UE's forecast for this activity therefore no additional submission is required.

5.16 Hardware maintenance

The AER has accepted UE's forecast for this activity therefore no additional submission is required.

5.17 Operating software

The AER has accepted UE's forecast for this activity therefore no additional submission is required.

5.18 AMI IT infrastructure support

The AER adopted Impaq Consulting's recommended revision. In summary the AER claims that the plans (and therefore the costs) for its new data centre is excessive and the forecast differs from Impaq Consulting's bottom up build. In UE's view the AER has failed to demonstrate why the company's forecast are a substantial departure from the commercial standard that a reasonable business would exercise in the circumstances.

Estimating data centre requirements is far more complex than the bottom up build proposed by Impaq Consulting. Impaq Consulting has failed to asses other key requirements such as power, cooling and weight in their bottom up build. The claim that there is spare space is incorrect. All existing racks are full with AMI applications.

Further details can be found in Appendix A: Jemena Asset Management, Response to the AER Determination on the Victorian Advanced Metering Infrastructure Review, 26 August 2011 Section 23

5.19 Metering IT

The AER has rejected UE's forecast costs for this activity. The AER states that the resourcing levels are too high, UE's justification of systems compliance is unreasonable and the revised order does not provide for ongoing systems upgrades and does not recognise expenditure to maintain the level of staffing to keep the expertise within the business.

The resourcing levels proposed by UE are consistent with current levels. This is not unusual given the current system status. Although the IT systems are largely installed the capacity of the systems and potential level of transactions will only be reached once the roll-out is complete. A normal commercial decision would be to ensure that the systems are fully operational before reducing resources. There are strict obligations that need to be met and until the system is at full operational capacity it is not prudent to reduce resources.

The AER's view that the CROIC does not provide for ongoing systems upgrades is incorrect. UE's forecast is for maintenance and operation IT systems that are required to comply with metering regulatory obligations which are within the scope of the CROIC. To suggest that UE can build a systems but not maintain a system is a strange outcome. This activity is clearly within scope as defined in schedule 2 of the CROIC.

Further details can be found in Appendix A: Jemena Asset Management, Response to the AER Determination on the Victorian Advanced Metering Infrastructure Review, 26 August 2011 Section 24

5.20 Other opex

UE has included all other opex costs within the categories above with the exception of debt raising costs. UE accepts the calculation methodology proposed by the AER.

6 Cost of Capital

6.1 Return on capital

6.1.1 Timetable documented by the AER

Clauses 4.1(h) to 4.1(j) of the revised CROIC prescribe the processes and timelines for determining the cost of capital to apply during the initial and subsequent AMI WACC periods. To facilitate the subsequent discussion, the clauses have been reproduced below.

From part 4, Regulatory Principles, section 4.1:

(h) The debt raising cost for the initial AMI WACC period shall be taken to be 12.5 basis points. Equity raising costs for the initial AMI WACC period shall be recovered as a maintenance and operating expense.

Note: Equity raising costs incurred before the Start Date are covered by clause 4.1(h).

(i) The input parameters used to calculate the WACC for the initial AMI WACC period must be calculated:

(i) with measurement of the market observables to occur on:
- the last 10 business days of November 2008; and
- the first 5 business days of December 2008, with the market observables to be determined on the basis of that measurement and otherwise in accordance with the Statement of Regulatory Intent issued by the AER pursuant to clause 6.5.4 of the National Electricity Rules; and

(ii) using the non-market observables from the Current Price Determination.

(j) The input parameters used to calculate the WACC for the subsequent AMI WACC period must be calculated with:

(i) measurement of the market observables to occur in a period in 2013 proposed by the distributor and agreed by the Commission (such agreement not to be unreasonably withheld); and

(ii) market observables and non-market observables determined in accordance with the Statement of Regulatory Intent issued by the AER pursuant to clause 6.5.4 of the National Electricity Rules and as if clause 6.5.4(g) of the National Electricity Rules applied.

The "initial AMI WACC period" commences on the "start date" of 1st January 2009, and ends on 31st December 2013. The "subsequent AMI WACC period" begins on 1st January 2014 and ends on the "end date" of 31st December 2015.

The term "market observable" means the nominal risk-free rate and debt risk premium.

The WACC that will apply in 2012 and 2013 was set by the AER in the context of the review of the AMI budget, and application for charges, for 2009 to 2011. In its final determination,

released in October 2009, the AER assessed a value for the nominal vanilla WACC which would apply to the Victorian distributors over the AMI period from 1st January 2009 to 31st December 2013. The calculated amount was 9.51%[8].

For the 2014-15 period, the WACC will be calculated in accordance with clause 4.1(j) of the revised Order. In February 2011, the AER wrote to each of the Victorian distributors and provided a timetable for the setting of the WACC for the 2014 to 2015 period. The approach put forward by the AER can be explained as follows:

- 28th February 2011. The Victorian distributors propose a placeholder WACC to the AER, and placeholder AMI charges for 2014-15 as part of their budget and charges applications for 2012-15. The AER will assess the submissions on WACC and on AMI charges in the lead-up to its final determination on 31st October 2011. The latter date is specified in the revised CROIC.
- 30th November 2012. This date does not feature in the revised CROIC. The distributors will submit a proposed averaging period, which is at some stage in 2013. The averaging period will apply to the WACC calculation for the 2014-15 AMI period. The WACC will, of course, be used in the setting of AMI charges.
- 10th January 2013. This date does not feature in the revised CROIC. The AER will write to the distributors to advise them of its decision on the proposed averaging period.
- 31st August 2013. The distributors will submit revised applications to the AER for charges to be applied in 2014. The lodgement of applications by the distributors would be in accordance with the timelines explained in section 5G of the revised CROIC; and
- 31st October 2013. The AER will release its final decision on AMI charges for 2014, and will incorporate the market observables measured in the approved averaging period. An October release date would be consistent with clause 5G.3 of the revised Order.

The AER has indicated that the completion of the review by 31st October 2013 will be contingent upon there being an adequate time interval following the averaging period to permit the AER to make a decision and then document it.

As stipulated in clause 4.1(j)(ii) of the revised CROIC, the market observables and non-market observables will be determined in accordance with the Statement of Regulatory Intent (SORI) issued by the AER pursuant to clause 6.5.4 of the National Electricity Rules (NER). The AER has affirmed that clause 6.5.4(g) of the NER will apply, which means that either the distributors and/or the AER will be able to put forward variations to the WACC values in the SORI, provided that the variations are well-founded. A departure from a value,

[8] Australian Energy Regulator, Final Determination, Victorian advanced metering infrastructure review, 2009-11 AMI budget and charges applications, October 2009; Table 4.6, page 61.

method, or credit rating level set in the SORI will only be permitted under the NER if persuasive evidence justifying the change can be adduced.

6.2 AER draft decision on WACC parameters for the AMI period, 1st January 2014 to 31st December 2015

The Victorian electricity distributors proposed the application of a placeholder WACC for the 2014-15 AMI period. The values of the component WACC variables would essentially be the same as those approved by the AER in its final determination for the AMI period from 1st January 2009 to 31st December 2013, with one significant difference, notably the value of the equity beta. The distributors have submitted that the equity beta should be 0.8, which is the value that was determined in the SORI. The resulting nominal WACC value which should serve as a placeholder for the AMI period from 1st January 2014 to 31st December 2015, is 9.19%.

The AER has responded in its draft AMI charges decision by setting a nominal, placeholder WACC value of 9.50% for the 2014-15 AMI period[9]. The AER has stated that the higher assessed value (9.50% as against 9.19% put forward by the distributors) can be attributed to increases in bond yields since 2009, and the AER is presumably referring to the yields on Commonwealth Government Securities. The AER has set a nominal risk free rate of 5.40%, which contrasts with the risk free rate of 4.63% which was proposed as a placeholder by the Victorian electricity distributors. The component values of the WACC parameters are presented below in Table 6.6.1.

Table 6.6.1: AER proposed placeholder WACC parameters for 2014-15 AMI period

WACC Parameter	AER Placeholder WACC
Gearing (debt to equity ratio)	60%
10-year risk free rate (nominal)	5.40%
Market risk premium	6.00%
Equity beta	0.80
Cost of equity	10.20%
Debt risk premium	3.64%
Cost of debt (for a BBB+ credit rating)	9.04%
Nominal Vanilla WACC	**9.50%**

Source: AER, Draft Determination, Victorian Advanced Metering Infrastructure Review, 2012-15 budget and charges applications, July 2011; Table E.3, page 208

[9] Australian Energy Regulator, Draft Determination, Victorian Advanced Metering Infrastructure Review, 2012-15 budget and charges applications, July 2011; Table E.3, page 208.

The AER has claimed that the South Australian Gas Access Arrangement and the Queensland Gas Access Arrangement represent the current view of WACC as propounded by the AER[10]. The placeholder WACC parameters are said to have been drawn from the final decision for Envestra, in the access arrangement for the South Australian gas network. The nominal vanilla WACC of 9.50% has been attributed to the most recent WACC decision by the AER[11].

However, there are differences between the final decision values reported for Envestra and the placeholder WACC parameters that have been published in the draft decision on AMI charges for the 2014-15 AMI period. The WACC results from the final decision by the AER on the South Australian gas network have been reproduced in Table 6.6.2.

Table 6.6.2: AER final decision on WACC parameters for SA gas network

WACC Parameter	AER Placeholder WACC
Gearing (debt to equity ratio)	60%
10-year risk free rate (nominal)	5.56%
Inflation forecast	2.55%
Market risk premium	6.00%
Equity beta	0.80
Cost of equity	10.36%
Debt risk premium	3.81%
Cost of debt (for a BBB+ credit rating)	9.37%
Nominal Vanilla WACC	**9.77%**

Source: AER, Final Decision, Envestra Limited, Access arrangement proposal for the SA gas network, 1st July 2011 to 30th June 2016, June 2011; Table 5.9, page 59.

The WACC value which was determined by the AER for the South Australian gas network, was also deemed to apply to the Queensland gas network owned by Envestra and to the APT Allgas network in Queensland. The nominal WACC value was reported to be 9.77%.

In the context of the draft decision on AMI budgets and charges for the 2014-15 AMI period, the AER appears to have misquoted its own source material. The AER has incorrectly ascribed the source of the WACC values to its final decisions on the Queensland and South Australian gas access arrangements. The nominal WACC value of 9.50% for the 2014-15

[10] Australian Energy Regulator, Draft Determination, Victorian Advanced Metering Infrastructure Review, 2012-15 budget and charges applications, July 2011; page 208.

[11] Ibid., page 209.

AMI period is inconsistent with the value of 9.77% which was reported in the South Australian decision. The AER should therefore provide clarification as to the particular WACC decision which has been referenced.

6.3 UE revised proposal for placeholder values of the WACC variables 2014 and 2015

UE would like to propose a new set of placeholder WACC variable values which are to take effect, notionally, over the 2014-15 AMI period. The revised WACC values are presented in Table 6.6.3.

The nominal risk-free rate is the main WACC parameter to have changed, subsequent to the initial application for AMI charges, which was lodged by UE on 28th February 2011[12]. The alteration to the risk free rate affects the assessed cost of debt, for a benchmark entity with a BBB+ credit rating, and consequently also has an impact on the overall nominal WACC. The post-tax nominal return on equity (before the utilisation of imputation credits) is also subject to amendment as a result of the upward movement in the nominal risk free rate.

As shown in the Table, the nominal pre-tax cost of debt has risen to 9.69%, while the post-tax nominal return on equity has been worked out to be 10.76%. The nominal vanilla WACC is 10.12%.

UE has taken the nominal risk-free rate of 5.56% from the AER final decision for the Envestra (SA) gas network[13]. As with other WACC parameters, the nominal risk-free rate is, at this stage, simply a placeholder variable. UE does not necessarily support the choice of dates for the averaging period, in relation to which the nominal risk free rate has been calculated. UE understands that the averaging period for the Envestra access arrangement review was nominated as 15 business days from 25th February 2011. UE is also aware that Envestra sought a revision to the averaging period in advance of the release, by the AER, of the final decision for the SA gas network[14]. Hence, although a value of 5.56% has been selected, UE is not seeking to give its imprimatur to the time interval that was chosen initially by Envestra SA.

[12] United Energy, AMI Charges Application for 2012–2015, 28th February 2011.

[13] AER, Final Decision, Envestra Limited, Access arrangement proposal for the SA gas network, 1st July 2011 to 30th June 2016, June 2011; Table 5.9, page 59.

[14] Ibid.; page 57.

Table 6.6.3: UE revised WACC parameter values

WACC Parameter	AER Placeholder WACC
Gearing (debt to equity ratio)	60%
10-year risk free rate (nominal)	5.56%
Inflation forecast	2.56%
Market risk premium	6.50%
Equity beta	0.80
Cost of equity	10.76%
Debt risk premium	4.125%
Cost of debt (for a BBB+ credit rating)	9.69%
Nominal Vanilla WACC	**10.12%**

Source: UE revised application for AMI charges, 26th August 2011. The nominal risk free rate has been taken from the AER final decision for the SA gas network, and is presented for illustrative purposes. UE does not necessarily endorse the choice of averaging period, in respect of which the nominal risk-free rate has been calculated.

The debt risk premium includes an allowance for debt raising costs of 12.5 basis points.

6.4 Discussion of conditions in domestic and international financial markets

In its final decision on the South Australian gas network, the AER failed to acknowledge the emerging downside risks to the domestic and international economies. However, the International Monetary Fund, (IMF), has warned of the likelihood of a mild slowdown of the global economic expansion, in a recent update to the World Economic Outlook (WEO) report which was released in June 2011[15]. The IMF summarised the prospects for world economic growth with reference to the fragility of the US economic recovery, and the likely negative impact on investment from renewed financial instability:

> Activity is slowing down temporarily, and downside risks have increased again. The global expansion remains unbalanced. Growth in many advanced economies is still weak, considering the depth of the recession. In addition, the mild slowdown observed in the second quarter of 2011 is not reassuring. Growth in most emerging and developing economies continues to be strong. Overall, the global economy expanded at an annualized rate of 4.3 per cent in the first quarter, and forecasts for 2011–12 are broadly unchanged, with offsetting changes across various economies. However, greater-than-anticipated weakness in U.S. activity and renewed financial

[15] International Monetary Fund, World Economic Outlook Update, An update of the key WEO projections; released 17th June, 2011.

> volatility from concerns about the depth of fiscal challenges in the euro area periphery pose greater downside risks. Risks also draw from persistent fiscal and financial sector imbalances in many advanced economies, while signs of overheating are becoming increasingly apparent in many emerging and developing economies. Strong adjustments—credible and balanced fiscal consolidation and financial sector repair and reform in many advanced economies, and prompter macroeconomic policy tightening and demand rebalancing in many emerging and developing economies—are critical for securing growth and job creation over the medium term.

The IMF discussed the turbulence in financial markets:

> After easing through much of the first half of 2011, global financial conditions have become more volatile since late May... This reflects market concerns about sovereign risks related to developments in the euro area periphery and the recent softening in activity and persistent housing market weakness observed in the United States. Symptoms include rising sovereign credit default swap spreads in certain euro area economies, retreating global stock prices, and falling long term bond yields in the major advanced economies. In addition, the June 2011 Global Financial Stability Report (GFSR) Market Update emphasizes the insufficient pace of progress on banking system repair, notably in Europe, as well as risks related to re-leveraging in various market segments.

The IMF has also emphasised the possibility of a further deterioration in investment conditions:

> The balance of risks points down more than at the time of the April 2011 World Economic Outlook. Downside risks due to heightened potential for spillovers from further deterioration in market confidence in the euro area periphery have risen since April (see the June 2011 GFSR Market Update[16]). Market concerns about possible setbacks to the U.S. recovery have also surfaced. If these risks materialize, they will reverberate across the rest of the world—possibly seriously impairing funding conditions for banks and corporations in advanced economies and undercutting capital flows to emerging economies. In addition, banks in advanced economies continue to face a wall of refinancing requirements, and a squeeze on banks' wholesale funding could reverse the recent normalization of lending standards. Near-term risks for sharper or more drawn-out negative spillovers from Japan to other economies cannot be ruled out either.

The AER has implied in its recent commentary that Australia is somehow inured to global economic weakness[17], however such a proposition would be incorrect because of the

[16] International Monetary Fund, Global Financial Stability Report, Market Update, June 2011.

[17] AER, Final Decision, Envestra Limited, Access arrangement proposal for the SA gas network, 1st July 2011 to 30th June 2016, June 2011; page 198.

dependence of Australia on foreign borrowing, and because of the interconnectedness of domestic and international capital markets.

The Reserve Bank of Australia (RBA) has also sounded a cautionary note, raising the possibility of further turmoil on financial markets, which would have adverse ramifications on the Australian economy [18].

> Despite the recent financial assistance package for Greece and the agreement to lift the debt ceiling in the United States, sovereign debt concerns continue to weigh on global sentiment and a disorderly resolution of the current problems would lead to a considerably worse outcome for the global economy than suggested by the central forecast.

The RBA has commented on the fluctuations in equity markets, declaring, in its monetary policy statement, that[19]:

> The Australian share market has fallen in line with overseas equity markets... Concerns over European sovereign debt and the pace of the global recovery have weighed heavily on investor sentiment, as have domestic factors such as the weakness in consumer discretionary spending. At the sectoral level, financial stocks have declined by more than the overall market, which is consistent with the underperformance of financial stocks globally….This decline has been associated with an increase in short selling of shares of the major banks. A number of insurance groups have also announced that they expect their margins to come under pressure as a result of prospective increases in reinsurance costs. Resource stocks have also declined and they are now 16 per cent below their two-year peak reached in April. The falls mostly reflect some levelling out in commodity prices and concerns that Chinese authorities may seek to slow growth amid rising inflationary pressures. Consumer discretionary stocks have significantly underperformed the broader market...Worse-than-expected sales as well as lower profit guidance by some major groups in the sector have underscored the difficult operating environment, including aggressive discounting, consumer caution and increased competition from online shopping.

The comments by the RBA about investor sentiment are consistent with the arguments advanced by the Victorian electricity distributors, that the current setting of the risk premium in equity markets is above its long-term average level.

[18] Reserve Bank of Australia, Statement on Monetary Policy, August 2011; chapter 1, page 7.

[19] Reserve Bank of Australia, Statement on Monetary Policy, August 2011; chapter 4, page 62.

6.5 Market risk premium

6.5.1 AER final decision on the Access Arrangement Proposals for the Queensland and South Australian gas networks

In the course of its reviews of the Queensland and South Australian gas networks, the Australian Energy Regulator determined that the market risk premium should be brought down from 6.5%, the value that had been applied in the aftermath of the global financial crisis, to 6.0%, the value which had originally been set in the SORI[20].

The AER provided the following rationale for its change of perspective on the MRP:

> Due to the uncertainty about the effects of the GFC on future market conditions the AER departed from the previously adopted forward looking MRP estimate of 6 per cent and increased it to 6.5 per cent. The significant uncertainty that characterised markets at the time of the WACC review has substantially diminished. The prevailing conditions in the market for funds have eased.

The remarks by the AER are clearly at odds with the considered judgement of the IMF and the RBA. As noted in section 6.4, the latter two agencies have warned of the possible economic effects of instability in financial markets.

The AER claimed to have undertaken a thorough appraisal of the evidence so as to inform itself objectively about the best estimate of the MRP. The following were amongst the sources considered:

Historical excess return estimates for three time periods, 1883–2010, 1937–2010 and 1958–2010. These estimates provide a range of 5.9–6.4 per cent if calculated on an arithmetic mean basis, and a range of 3.8–4.8 per cent if calculated on a geometric mean basis. These figures estimated the realised return that stocks have earned in excess of the 10-year government bond rate and may inform expectations of the excess return that could be earned in the future.

DGM based estimates of the MRP incorporating assumptions which the AER regarded as reasonable. The DGM approach provided an estimated range for the MRP of approximately 4.5–5.6 per cent.

Implied volatility from the prices of options on the ASX 200 index, which, the AER stated, had returned to pre-GFC levels. The AER therefore deduced that the MRP would be unlikely to be above pre-GFC levels.

Surveys of market practitioners prior to the GFC that supported 6 per cent as the most commonly adopted value for the MRP. These surveys also indicated that the average MRP adopted by market practitioners was approximately 6 per cent.

[20] Australian Energy Regulator, Electricity distribution network service providers. Statement of regulatory intent on the revised WACC parameters (distribution), 1st May 2009.

6.5.2 Revised proposal by UE

NERA Economic Consulting has examined a number of issues in relation to the market risk premium which were raised by the AER in its final decision on the Access Arrangement Proposal for the South Australian gas network[21]. In particular, NERA was asked to give consideration to the following matters which have recently been analysed by the Victorian gas distributors:

- Whether the historical evidence indicates that a long-term average market risk premium (MRP) of 6 per cent per annum inclusive of the value of imputation credits is appropriate.
- Whether an estimate of the MRP computed using historical data should be based on the arithmetic mean of a sample of returns to the market portfolio in excess of the 10-year bond yield, on the geometric mean of the same sample of returns, or on some weighted average of the two means.
- Whether the survey evidence summarised by the AER provides support for an MRP of 6 per cent per annum inclusive of the value of imputation credits; and
- Whether current conditions warrant an MRP for 2014 and 2015 at its long-term average or above or below its long-term average;

NERA has reported on a number of key findings which are documented in its submission to the AER in response to the draft determination on the Victorian Advanced Metering Infrastructure Review (2012-2015)[22].

An analysis of volatility has demonstrated that the Australian market portfolio was substantially less risky in the latter part of the 19th century and in the early 20th century than in the late 20th century and early part of the 21st century. NERA has drawn upon the data series published by Brailsford et al. in the appendix of a recent article on the historical equity risk premium[23]. An analysis of the reported information has demonstrated that the standard deviation of the return to the Australian market portfolio has been twice as high in the later period than in the earlier period. An empirical finding of this nature suggests that the practice of combining data from the earlier and later periods, without making an adjustment for risk, is essentially invalid. The MRP should not be derived from a simple concatenation of the pre-1958 and post-1957 data series. NERA has reported that if the earlier data is adjusted for the lower risk which prevailed in that period then the MRP that is obtained from the calculations will, in all likelihood, be significantly greater than 6.5 per cent per annum, after taking into account the value of imputation credits. If the earlier data is

[21] AER, Final Decision, Envestra Limited, Access arrangement proposal for the SA gas network, 1st July 2011 to 30th June 2016, June 2011; page 184.

[22] The Market Risk Premium. A report for Citipower, Jemena Electricity Networks, Powercor, SP AusNet, and United Energy, prepared by NERA Economic Consulting, 22nd August 2011.

[23] Brailsford, T., J. Handley and K. Maheswaran. The historical equity risk premium in Australia: Post-GFC and 128 years of data, Accounting and Finance, 2011.

discarded, then the resultant MRP will be 6.4 per cent, adjusted for an estimate of the value of imputation credits. The 6.4 per cent figure is closer to 6.5 per cent than to 6 per cent.

Furthermore:

- A WACC that is in part based on an estimate of the MRP that places a positive weight on the geometric mean of a sample of annual excess returns to the market portfolio will – so long as the other components of the WACC have been correctly computed – produce a downwardly biased estimate of the revenue that the market requires in any one year on the regulated asset base. In contrast, a WACC that is based solely on the arithmetic mean of a sample of annual excess returns to the market portfolio will – so long as the other components of the WACC have been correctly computed – produce an unbiased estimate of the revenue that the market requires in any one year.
- If the excess return to the market portfolio is serially independent – and the evidence against the hypothesis is weak – then an unbiased estimate of one of the discount factors used to smooth prices whilst leaving the NPV of post-tax revenue unchanged will require one to use an estimate of the MRP that exceeds the arithmetic mean of a sample of annual excess returns to the market portfolio and that places a negative weight on the geometric mean. A weighted average of the arithmetic and geometric means (of the sample of excess returns) can be employed, with a negative weight assigned to the geometric mean[24].
- An examination of the five survey papers that the AER reviews indicates – setting aside the issue of whether the estimates of the MRP that the surveys report exclude or include the value of imputation credits – that the AER's summary of the results of these surveys is not unreasonable. The mean of the MRP estimates contained in the five surveys is somewhat higher than 6 per cent per annum but the mode appears to be exactly 6 per cent;
- An examination of the five surveys, however, indicates that 83 per cent of the respondents who respond to the question of whether or not they make an adjustment for the value of imputation credits in fact make no adjustment. Adjusting the results of the surveys for the value that the AER assumes that the market places on imputation credits yields an imputation-adjusted MRP of precisely 6.5 per cent; and
- Current conditions suggest that the MRP is above its long-term average. The spread between BBB bond yields and AAA bond yields, while lower than during the worst of the Global Financial Crisis, is still well above its long-run average. Also the volatility of the return to the Australian market portfolio implied by option prices suggests that the risk of the market sits at a level that is above where it sat for much of the last decade. There is nothing in the current data to suggest, though, that one

[24] The discount factor is inversely related to the MRP, and so a higher MRP gives a lower discount factor.

should not expect the MRP to return to a level close to its historical mean by 2014. However, as the 2014 year approaches, the MRP will need to be re-assessed in light of the conditions that are prevailing at the time. The AER will need to give consideration to forward-looking methods of determining the MRP.

In a report prepared for the Victorian electricity distributors, Bishop and Officer have examined the current state of the MRP, and have referred to evidence which suggests that the forward-looking MRP is at a level which is above the historical average reading[25]. In particular:

- Debt risk premiums on the lower investment grade debt instruments, i.e. those closest to equity, are well above historical averages. Since both debt and equity are raised in open capital markets, then we would expect to observe a similar phenomenon in equity risk pricing; and
- Stock market volatility is also well above the long term average suggesting that the forward view of risk is unusually high.

Bishop and Officer (2011) have reported that, as at 12th August 2011, the level of volatility implied by the price of traded, call and put options on the S&P/ASX 200 index was approximately 24%, which compares with average volatility, during stable periods of 14%. Current volatility is therefore at a similar level to that recorded during July 2010. In a submission to the Electricity Distribution Pricing Review, 2011 to 2015, prepared for the Victorian electricity distributors, Bishop and Officer reported that the implied volatility, calculated as an average over the 15 trading days to 5th July 2010, was at 23.7%[26]. Bishop and Officer inferred that, as at July 2010, the best estimate of the one year forward-looking MRP was 11.9%. The AER conceded that the MRP was above its historical average value and approved an MRP of 6.5% in the final decision for the EDPR, released in October 2010[27].

The current measure of volatility, implied by 12-month options on the S&P/ASX 200 index, suggests that an appropriate value for the one-year forward-looking MRP is 12%[28]. Bishop and Officer (2011) present their view that the historical, long-term average MRP would be an inappropriate benchmark to apply over the next twelve months[29]. They also argue, with

[25] Value Adviser Associates. Market Risk Premium: Current View. An updated prepared in response to the draft determination by the AER on the Victorian Advanced Metering Infrastructure Review: 2012-15 budget and charges applications. Authored by Dr Steven Bishop and Professor Bob Officer.

[26] Value Adviser Associates. Market Risk Premium: Comments on the AER Draft Distribution Determination for Victorian Electricity Distribution Network Service Providers. Authored by Professor Bob Officer and Dr Steven Bishop, July 2010; see Table 4, page 25.

[27] Australian Energy Regulator, Final decision, Victorian electricity distribution network service providers, Distribution determination 2011-2015, October 2010, page xxxvii.

[28] Value Adviser Associates. Market Risk Premium: Current View. An updated prepared in response to the draft determination by the AER on the Victorian Advanced Metering Infrastructure Review: 2012-15 budget and charges applications. Authored by Dr Steven Bishop and Professor Bob Officer; Table 2, page 8.

[29] Ibid., page 5.

reference to an earlier submission, that an appropriate measure of the historical MRP is 7%, after factoring in the value of imputation credits from 1987 to 2010[30]. The impact of franking credits on the long term average MRP is greater when the MRP is measured over a shorter time period from 1958 to 1990, than when the MRP is calculated over an extended timeframe from 1883 to 1990.

6.5.3 Response to AER decision on the use of dividend discount models

In commenting upon the dividend discount model which was employed by Capital Research to infer the value of the market risk premium, the AER has claimed that Capital Research (CR) "assumed a perpetual growth rate of approximately 8.12 per cent"[31]. However, the choice of growth rate for dividends per share, by CR, was not an assumption, but was actually a reflection of the history of the projections of earnings per share, prepared by analysts. Hence, the AER has erred in its characterisation of the nature of the forecast.

Table 1 of the submission by CR showed that over the 12-year period to February 2011, actual earnings per share (EPS) had increased at a compound annual growth rate of 12.04%, while dividends per share (DPS) had grown by 10.29%[32]. For both dividends and earnings, the actual growth rates that were recorded surpassed the analysts' forecasts, which were for increases in earnings per share of 8.18% per annum, and an increase in dividends per share of 8.91% per annum, with both variables measured in compound annual growth rate terms. These figures were for Australia, and CR incorporated the value of 8.18% per annum into its dividend discount model. The forecast growth in earnings per share had been reported by analysts as being applicable over the long term. CR noted that:

> Growth in dividends per share should match the growth in earnings per share in the long run, but these data indicate that analysts have forecast higher growth in DPS than in EPS. I would consider this to be unsustainable in a simple perpetuity model as it implies an ever increasing payout ratio of companies which is not possible. Accordingly, I would suggest that the EPS growth is the more reliable estimate of analysts' forecasts, and it is the only estimate [provided on a long-term growth basis], so I would use this datum as the best current estimate, namely 8.18% per annum.

Capital Research has prepared a further submission which responds to the final decision by the AER in its review of the Queensland and South Australian gas networks. CR has updated its dividend discount model using the latest estimate of the growth in earnings per share, from February 1999 to July 2011. The increase in EPS over the period was 7.52%

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[30] Value Adviser Associates. Market Risk Premium: A Review Paper. A submission to the Australian Energy Regulator, August 2008. Prepared by Professor Bob Officer and Dr Steven Bishop.

[31] AER, Final Decision, Envestra Limited, Access arrangement proposal for the SA gas network, 1st July 2011 to 30th June 2016, June 2011; page 52.

[32] Capital Research. Forward Estimates of Market Risk Premium. A report for Multinet Gas and SP AusNet, prepared by Neville Hathaway, April 2011; page 9.

per annum, measured as a compound annual growth rate[33]. CR has defended its estimate of the forecast growth in earnings by examining longer-dated historical information from equity markets in respect of which Morgan Stanley has been maintaining records:

> The average growth rate in earnings, dividends and cash for the last 37 years for the 22 developed markets (as chosen by Morgan Stanley for their 22 market Morgan Stanley Capital Index) is approximately 6.5% per annum. This estimate is dominated by the USA, Japan and the UK (which, together, account for 70% of the overall average growth rate), and these countries have been relatively poor performers, particularly for the last 15 years. If some are below average then some must be above average. An Australian nominal growth rate of 7.52% pa is hardly unrealistic when average markets have delivered 6.5% p.a.

CR has also tackled the assertion by the AER that the growth in dividends should be somehow constrained to be equal to the sum of the annual average increase in real gross domestic product (3.5%) and the inflation rate (2.5%)[34]. The notion that the growth in earnings for listed corporations should be aligned with nominal GDP growth is flawed because equity markets are not simply a representation of economy-wide GDP earnings, when GDP is measured using the income approach.

CR has argued that[35]:

> The whole economy includes many enterprises that would never be listed on the stock market, including many private and government-owned enterprises. A major purpose of the stock market is to selectively allocate capital to entities which make the best use of the capital. To assume that the average stock looks like the average economy-wide enterprise is to assert that the capital markets fail, on average, at this selection process.
>
> It could go both ways: Entrepreneurial capital may not become listed but instead remain in private hands. If this factor dominated, then listed corporate earnings would grow by less than GDP. Equally, if marginal growth enterprises such as rural economies dominated the GDP metric, but were not listed on the market, then the market could easily grow at a rate faster than GDP.
>
> The GDP data must be an average of all enterprises, listed and unlisted. To assert that the listed must grow at the same rate as GDP means that the unlisted must also

[33] Capital Research. Response to the Draft Determination by the Australian Energy Regulator on Victorian Advanced Metering Infrastructure Review, 2012-15 budget and charges applications. A report prepared for the Victorian electricity distributors by Neville Hathaway, August 2011; page 6.

[34] AER, Final Decision, Envestra Limited, Access arrangement proposal for the SA gas network, 1st July 2011 to 30th June 2016, June 2011; page 195.

[35] Capital Research. Response to the Draft Determination by the Australian Energy Regulator on Victorian Advanced Metering Infrastructure Review, 2012-15 budget and charges applications. A report prepared for the Victorian electricity distributors by Neville Hathaway, August 2011; page 8.

grow at this rate. Hence the principal activity of capital markets in allocating capital is a failure. We can see no reason to put forth this dire proposition.

A related consideration is that the national income measure of GDP, as it is identified in the Australian National Accounts, incorporates other components which have no relationship with either the earnings of listed corporations or the gross operating surplus of other private and public enterprises[36]. These components include:

- Gross mixed income
- Taxes less subsidies on production and imports; and
- Net primary income from non-residents.

The incorporation of these variables in Gross National Income reduces the likelihood that earnings growth will ever be the same as GDP growth.

6.6 Debt risk premium

The AER has proposed a placeholder debt risk premium of 3.64% for the AMI period from 1st January 2014 to 31st December 2015[37]. The source of this number is unknown, however the debt risk premium calculated and reported for the Envestra (SA) final decision was 3.81%[38].

UE does not accept the placeholder debt risk premium of 3.64% which has been published by the AER in its draft decision on the Victorian AMI budget and charges. We note that the method which the AER used to estimate the DRP in the review of the gas networks for Queensland and South Australia is subject to an appeal by Envestra Ltd. before the Australian Competition Tribunal (ACT).

The debt risk premium for the 2014-15 period will need to be evaluated at a time which is much closer to the start date of the two-year interval. UE reserves the right to propose a method for estimating the DRP at a future date which will probably correspond with the submission date for a revised application for charges to apply in 2014. The submission date has been mentioned as 31st August 2013 in the timetable which has been prepared by the AER.

UE affirms its entitlement to propose a suitable value for the DRP in its submission on revised charges, which is due for lodgement with the AER by 31st August 2013. However, UE may not be in a position to submit a value by 31st August if an averaging or measurement period is chosen for later in 2013. In these circumstances, UE will submit a

[36] Australian Bureau of Statistics, Australian System of National Accounts: Concepts, Sources and Methods, catalogue number 5216.0.2000, Table 8.2, page 89.

[37] Australian Energy Regulator, Draft Determination, Victorian Advanced Metering Infrastructure Review, 2012-15 budget and charges applications, July 2011; Table E.3, page 208.

[38] AER, Final Decision, Envestra Limited, Access arrangement proposal for the SA gas network, 1st July 2011 to 30th June 2016, June 2011; Table 5.9, page 59.

method or technique, and a further placeholder value by 31st August 2013. The actual value would be determined upon the completion of the nominated averaging period. UE anticipates that it will settle upon a particular approach in consultation with the other Victorian electricity distributors.

UE believes that the AER will need to adhere to certain principles when it decides whether or not to accept the DRP method that is propounded by UE. The principles are enunciated below and should be regarded as a guide:

- In general, the fair value curves produced by market practitioners, and market data professionals, such as Bloomberg, should be preferred over other benchmarks, such as the observations on a particular bond, or bonds which have been chosen arbitrarily.
- When choosing a sample of bonds to use as comparators, the AER should draw upon the wider population of bonds, and should not be unnecessarily or unduly restrictive in its selection process. The sample of bonds should be broadly-based and representative.
    - There is evidence from recent submissions to the Australian Competition Tribunal (ACT) that the AER can be unjustifiably selective when examining the yields on recently issued bonds. For instance, the AER provided evidence of new bonds in its replies to the ACT in the matter of the appeal of the DRP by Jemena Electricity Networks. The AER sought to highlight the data for certain bonds which had been brought to the regulator's attention during the reviews of the Queensland and South Australian gas networks. However, the AER neglected to mention a long-dated Bank of Queensland floating rate note (maturing in 2021) which traded over the same period as the other bonds which the AER did mention. The DRP on the Bank of Queensland bond was 4.67%, when measured over the period from 1st April 2011 to 18th May 2011, a value which put the bond above the Bloomberg BBB band fair value curve, at the particular maturity[39]. The bond is callable, with a first call date in 2016.
- Adjustments to bond yields which are made because the particular call dates for options have lapsed should be done correctly, and with a full understanding of the data that is presented in rate sheets (from UBS or from other providers). The data from any one source should be used consistently across all of the variables of a calculation. Data from separate sources should not be combined in a single formulation, unless there are compelling reasons for doing so.
- The AER needs to ensure that it applies its calculations correctly, and that its methods are authenticated by suitable third parties. The thoughtless application, by the AER, of

[39] Competition Economists Group, Review of AER's supplementary submissions, A report for Jemena Electricity Networks, Dr Tom Hird, July 2011.

the Bloomberg YASN function, in the context of an exercise to adjust bond data, cannot be construed as illustrating best practice[40].

Finally, UE understands that the AER is currently developing a new approach to be used in the preparation of estimates of the DRP. The Victorian electricity distributors should be provided with adequate opportunities to participate in the consultations.

6.7 Estimated corporate income tax

UE proposes to adopt a gamma value of 0.25, thereby applying the findings of the Australian Competition Tribunal in *ACompT9*[41]. Gamma, the value of imputation credits, is used in the tax wedge calculation, in the post-tax revenue model. The gamma parameter is not a direct input into the weighted average cost of capital (WACC). Consequently, the application of the gamma value of 0.25 is not limited to the "subsequent AMI WACC period" which commences on 1st January 2014, and runs to 31st December 2015. The gamma estimate of 0.25 pertains to the entire "subsequent AMI budget period" which begins on 1st January 2012, and continues until the "end date" of 31st December 2015.

[40] Ibid., paragraph 7.

[41] Australian Competition Tribunal, Application by Energex Limited (Gamma) (No 5) [2011] ACompT9, Reasons for Decision, 12th May 2011.

7 Depreciation

Table 7.1 shows the depreciation allowance for the 2012-2015 AMI budget period using the depreciation rates set out in CROIC clause 4.1(g) applied to the MAB roll forward over the initial AMI budget period set out in Table 8.1.

Table 7.1: Depreciation allowance over initial AMI budget period (Real 2011 $m)

Real 2011 - $m	2012	2013	2014	2015
Total real depreciation	37.8	42.8	37.6	35.3

8 Metering Asset Base

Table 8.1 sets out the roll forward of the MAB in accordance with the approach set out in the CROIC, clause 5E.2 and in accordance with the amened budget

Table 8.1: MAB over initial AMI budget period – Real 2011 $m)

MAB roll forward	2012	2013	2014	2015
Opening MAB	194.8	257.7	232.2	200.2
Add: Forecast capital expenditure[42]	100.8	17.3	5.8	5.5
Less: Regulatory depreciation	37.8	42.8	37.6	35.3
Less: Disposals	0	0	0	0
Closing MAB	**257.8**	**232.2**	**200.3**	**170.4**

[42] Net of capital contributions.

9 Amended revenue building block costs based on UE's Amended Budget

Table 9.1 sets out UE's building block forecast for 2012 to 2015.

Table 9.1: Revised Revenue Requirements (Real 2011 $M)

	2012	2013	2014	2015
Return on Capital	15.3	16.5	13.9	11.9
Depreciation	37.8	42.8	37.6	35.3
Operating & Maintenance costs	29.6	24.4	21.8	22.0
Tax Liability	0	0	0	0
Total revenue requirement	**82,740**	**83,879**	**73,479**	**69,377**

*Excludes debt raising costs

10 Amended prices based on UE's Amended Budget

10.1 Amended prices

Table 10.1 sets out UE's amended prices for 2012 to 2015.

Table 10.1: Revised Metering Charges (Nominal)

Meter	2012	2013	2014	2015
Single phase single meter	$106.35	$122.78	$141.74	$163.63
Single phase single meter with contract	$108.54	$125.31	$144.66	$167.01
Three phase direct connected meter	$119.94	$138.46	$159.85	$184.54
Three phase current transformer connected meter	$127.94	$147.70	$170.51	$196.85

10.2 Forecast customer numbers

Table 10.2 sets out UE's forecast customer numbers for 2012 to 2015.

Table 10.2: Forecast customer numbers

Meter Type	2012	2013	2014	2015
Single phase single element	432,157	436,478	440,843	445,252
Single phase single element meter with contactor	131,590	132,906	134,325	135,577
Three phase direct connected meter	85,907	86,766	87,633	88,510
Three phase Current transformer connected meter	3,065	3,096	3,127	3,158

10.3 Compliance with AER pricing principles

In section 4.5.2 of its Approach Paper, the AER set out the following pricing principles that the Victorian distribution businesses need to comply with in proposing their charges:

1. Cost of services provision - a distributor's charges and terms and conditions for a prescribed metering service (this has been read to refer to Regulated Services) must be based on the costs incurred by the distributor in providing the prescribed metering service, given the customer classes permitted by the revised Order.
2. Cost allocation - in respect of the costs incurred by a distributor in providing a prescribed metering service:

- those costs must not include costs in respect of which the distributor is remunerated under the distributor'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 distributor in providing the prescribed metering service and in providing any other goods or services, whether in the conduct of a distributor's business as a distributor or any other business

3. Simplicity - charges and terms and conditions for prescribed metering services should be simple and easily comprehensible.

UE has achieved the AER's pricing principles as follows:

1. Cost of services provision:

   UE has Regulated Services charges consistent with categories provided for in CROIC clause 4.1(n). To ensure alignment with AMI cost drivers, UE has incorporated the following principles into its 2012-2015 tariffs:

   - Current metering data service charges have been consolidated into a single charge given AMI removes the distinction between monthly and quarterly read meters.
   - The primary cost driver of meter provision charges is the capital cost of the meter. UE has developed a cost reflective 2012-2015 metering provision charge.
   - Re-balanced meter data services and meter provision charges have been combined into one metering charge. This charge maintains differentiation by meter type due to the relative cost differential of procuring different types of meters.

2. Cost allocation:

   - UE has only allocated Regulated Services costs in its Regulated Services metering charges; that is, no costs have been included for services that it receives revenue for under its distribution tariffs, excluded service charges or charges for metering services to unmetered supply points.
   - UE has not included any shared costs in its building block revenue.

3. Simplicity:

   UE has developed its prescribed Regulated Services to be as simple as possible. It has aimed to reduce the number of charges and minimise the differential between charges, provided that the other AER pricing principles are met. In particular:

   - UE has consolidated the current metering data services charge and meter provision charge into one charge.
   - UE has set its Regulated Services charges based on meter type (consistent with the CROIC) regardless of the customer type and usage.
   - In order to not discriminate between accumulation and interval meters, UE has adjusted its charges to be on a per NMI basis rather than a per meter

basis. Currently where a NMI has two single phase meters (one Peak and the other Off Peak) the NMI receives one off peak Meter Provision charge and two Meter Data charges.

Appendix A:	Jemena Asset Management, Response to the AER Determination on the Victorian Advanced Metering Infrastructure Review, 26 August 2011
Appendix B:	KEMA, The Smartnet Program – Advanced Meter Infrastructure Roll-out for United Energy Distribution and Jemena Electricity Networks
Appendix C	Detailed UE AMI cost model
Appendix D	Amended Budget Template 2012-2015
Appendix E	Amended Charges Model 2012-2015
Appendix F	Citi, Global Economic Outlook and Strategy
Appendix G	Deloittes, AMI opex review
Appendix H	Value Adviser Associates. Market Risk Premium, An update prepared in response to the draft determination by the AER on the Victorian Advanced Metering Infrastructure Review: 2012 – 15 budget and charges applications.
Appendix I	Dr Steven Bishop & Professor Bob Officer, 23rd August 2011.
Appendix J	Capital Research Pty. Ltd. Response to the Draft Determination by the Australian Energy Regulator on the Victorian Advanced Metering Infrastructure Review, 2012-15 budget and charges applications. A report prepared for the Victorian electricity distributors by Neville Hathaway, August 2011.