

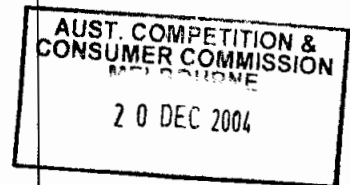
16th December 2004

FILE No:
DOC: D04K61472
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INTERMOCO
 MONITORING AND CONTROL

Australian Competition & Consumer Commission (ACCC)
 Level 35, The Tower
 360 Elizabeth Street
 Melbourne Central
 Melbourne VIC 3000

93 9663 3699



Attention: Mr. Sebastian Roberts

Dear Mr. Roberts,

Re: Application for Authorisation – Amendments to the National Electricity Code – Victorian Full Retail Competition Derogations – Draft Determination

I refer to the abovementioned Draft Determination issued on the 1st December 2004. Intermoco Solutions Pty Ltd, a Melbourne based company, provides Automated Meter Reading Solutions nationally and has a strong commercial interest in the issues discussed and in the outcome of the Determination.

Intermoco Solutions is a Melbourne based, company providing comprehensive AMR solutions to utilities in Victoria, nationally and throughout South East Asia. Intermoco became a publicly listed company on 9 January 2001. The company employs 20 design engineers working on developments in-house including both research and development activity and product development.

The Intermoco AMR solution provides the ability to read utility meters at customer premises remotely without the need to deploy field-based manual meter readers to record individual customer consumption.

Intermoco has previously submitted responses to the ESC position paper "Installing Interval Meters for Electricity Customers - Costs and Benefits" February 2003 and "Joint Jurisdictional Review on Metrology Procedures" September 2003. In both these submissions Intermoco has supported the rollout of interval meters with remote reading capabilities.

The Draft Determination

Intermoco endorses fully the ESC's planned interval meter rollout in Victoria and the time frames within which that rollout is to be completed. However Intermoco believes that for the interval meter rollout to achieve the desired benefit of a substantial improvement in the "Demand Side Management" response from users within the business and residential communities; it will be necessary to mandate either fully or in part the deployment of an automated meter reading (AMR) capability in the same general time period as proposed for the interval meter rollout.

Intermoco has also noted the draft determination by the ACCC to extend the derogation for two years and that a submission will be prepared by the ESC to incorporate the derogation within the Code. Intermoco also notes the ACCC condition that the derogation does not regulate the provision, installation and maintenance of a type 5 metering installation that includes an interval meter that is remotely read.

Intermoco supports these actions of the ESC and the ACCC but submits that in order to achieve the full "Demand Side Management" benefits of the interval meter rollout further regulatory support is required to mandate either across the board or in defined circumstances the concurrent deployment of AMR.

Our reasons for this include:

- Due to the dynamic and volatile nature of the wholesale market, real time price signaling is the most effective way to achieve a response from users and improve price elasticity of demand. Manually read Interval meters will improve consumer response to price signals. However, only real time remote reading capabilities will provide timely price signals to consumers to assist them to make choices about consumption which will ultimately lead to demand side responses.

- In order to capture the real benefits of interval meters in the short/medium term, and to help defer capital investment in new generating and distribution infrastructure, the mandated use of Type 5 meters with remote reading should be initiated. The levels of investment needed to meet forecast load growth are significant and the benefits from an accelerated deployment of remotely read type 5 metering will help to defer some of this investment and provide corresponding benefits to consumers and market participants'
- The incremental additional capital cost of deploying AMR with type 5 interval meters is modest compared to the increased benefits achieved by Demand Side Management. The initial report of the consultants to the ESC Victoria (*Installing Interval Meters for Electricity Customers – Costs & Benefits* November 2002) outlined the additional financial benefits of AMR and should serve as the reference material for this discussion. The report advocated the deployment of AMR in specific circumstances for business customers (additional financial advantage of \$128 million) and for a significant trial of AMR for residential customers.

Further the ACCC has previously recognised the importance of DSM and in its Determination Paper, "Applications for Authorisation Amendments to the National Electricity Code: Full Retail Competition and Registration of Code Participants" August 2001 states that:

"...in electricity the most urgent need is to develop greater Demand Side Responsiveness, That is, extreme inelasticity of demand simultaneously make wholesale prices particularly volatile and enables generators to wield strong market power, especially during times of tight supply and demand"

IPART, also supports this view and in a recent paper (*Inquiry into the role of Demand Management and other options in the provision of energy services*) October 2002, states:

"... the competitive wholesale market is sending strong pricing signals, but half the market do not see it because of the absence of necessary metering for residential and small business users".

Supporting Studies & Funding Options

Intermoco has attached a copy of its submission to the ESC which details the arguments in favour of the concurrent deployment of AMR for business customers with interval meters and for the funding of major trials for residential customers. Intermoco refers the ACCC to the original position paper by the ESC, "*Installing Interval Meters for Electricity Customers – Costs & Benefits*" November 2002

In terms of commercial customers (Types 1-4), the ESC Position Paper concludes that subject to the caveats therein:

"For all business customers the benefits of two way communication exceed the benefits in the case of manual reading for rapid deployment by \$128 million". In respect of all business customers with usage exceeding 10MWh per year the net benefits for the communication technologies exceed the net benefits for manual meter reading for most deployment approaches".

In terms of residential customers Intermoco endorses the conclusion reached in the Paper that

"...combining interval metering with two-way communications provides a broader array of net benefits and, as studies have shown in the US, can elicit greater responsiveness from customers"

The Position Paper also records that the net benefits for rolling out an AMR solution for customers with annual usage above 10MWh are the same or slightly larger than the net benefits of rolling out a manual interval metering solution. As for commercial customers the rapid deployment scenarios provide the greatest overall benefits.

For a particular group of customers characterized by single phase, non off-peak meters with usage below 10MWh per annum the ESC Paper canvassed the possibility of a study and a pilot program to identify and quantify the potential demand side management response and the benefits and costs of deploying interval meters to this group. This initiative including an extension of scope to encompass a review of the benefits of deploying a concurrent AMR / interval metering solution are supported by Intermoco.

A number of funding sources are available which could be used to fund a substantive AMR pilot programme as recommended in the ESC report. For example the following funding sources could be used:

- TransGrid's MetroGrid project: \$500M project to fund the upgrade Sydney's electricity infrastructure to meet future demand. A key aspect to the project to put in measures to minimize future augmentation of the network. This would represent an ideal opportunity to trial a Demand Side Management pilot.
- Department of Environment & Heritage - Solar Cities: \$75M trial of sustainable energy alternatives for urban Australia - 4000 sites. Smart metering will be required as part of the trial and could be easily extended to include a Demand Side Management pilot.
- IPART's Report "Inquiry into the Role of Demand Management and Other Options in the Provision of Energy Services" October 2002 has resulted in the New South Wales Government establishing a Demand Management Taskforce to investigate ways of establishing a Demand Management Fund. Once established, this could represent a source of funding to pilot various demand management options.

Other regulatory initiatives should also be introduced to foster the development of AMR such as that adopted by West Australia:

West Australia has mandated the rollout of interval metering and AMR systems for all buildings more than 3 levels or which have restricted access or security systems installed (Western Power: WPC Policy and Technical Requirements for Automated Meter Reading (AMR) Systems). Whilst Western Power (WP) is not part of the NEM, they are currently establishing an electricity wholesale market. The mandating of interval meters and AMR for larger building complexes will help WP obtain early benefits from the "low hanging fruit" in its move towards a potentially wider scale, interval meter rollout.

Summary

Intermoco submits that both regulation mandating AMR deployment and regulatory support for pilot and "seed" AMR schemes are necessary to ensure the deployment of remotely read type 5 meters. Intermoco favors light-handed regulation, however in this case a mandated rollout is warranted for all business customers. We believe that a concurrent rollout of remote reading systems in conjunction with interval meters will reduce the capital cost of implementation and will be the best approach to realising all the benefits that interval metering can offer.

As part of section 3, Public Consultation of the Draft Determination, Intermoco submits this document to the ACCC for its consideration and assessment of its impact on the derogations. We ask that the Commission consider our comments and we would be interested in participating in the Conference scheduled for early January 2005.

We look forward to your reply. In the meantime should you have any further queries please contact the undersigned.

Yours sincerely,
Intermoco Solutions Pty Ltd



Vince Dagostino
Strategy & Business Development



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**Submission by
Intermoco Limited
ACN 006 908 701**

**Comments on Issues Paper
'Joint Jurisdictional Review of the
Metrology Procedures'**

19th September 2003

Paper prepared by
National Development Strategies Pty Ltd
ACN 074 201 568

Intermoco Limited

**Comments on Issues Paper
'Joint Jurisdictional Review of the
Metrology Procedures'
Submission by Intermoco Limited**

1.0 Overview

1.1 Purpose

The purpose of this submission is to provide industry stakeholder comment to the ESC on the Issues Paper relating to the "Joint Jurisdictional Review of the Metrology Procedures". This paper will address the issues raised in that Paper on which the ESC is seeking comment. In particular, the submission will focus on those aspects of the ESC Paper that deal with "two-way" communication and Automated Meter Reading (AMR).

Intermoco in February 2003 submitted a response to the Victorian, ESC Position Paper titled "Installing Interval Meters for Electricity Customers" and considers that the views expressed in that paper are in the main relevant to this enquiry. Accordingly in addition to the detail provided in this submission Intermoco resubmits that paper as a formal submission to this enquiry.

1.2 Background

Intermoco Limited is a Melbourne based, company providing a stable and comprehensive AMR solution to utilities in Victoria, nationally and throughout South East Asia. Intermoco became a publicly listed company on 9 January 2001. The company employs 20 design engineers working on developments in-house including both research and development activity and product development.

The Intermoco AMR solution provides the ability to read utility meters at customer premises remotely without the need to deploy field-based manual meter readers to record individual customer consumption.

1.3 Intermoco (AMR) Solution

Intermoco's proven AMR solution called "Utiligy" has been tested and used by utility companies in Victoria and NSW in both trials and now commercial contracts and is not merely a meter reading product but a total solution that provides advantages and benefits far beyond meter reading alone. Utiligy is the first "real time" end-to-end Internet enabled solution.

By providing real-time data monitoring and management, utility companies are now able to make informed decisions on actual energy usage patterns and demand profiles and to improve forecasts resulting in better management of their energy resources and purchasing requirements. These substantial benefits are in addition to the significant benefits from closing the feedback loop with consumers to drive demand side management practices.

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1.3.1 Utiligy (AMR) Benefits

The Utiligy solution provides true on-line delivery of data in real time into a fully managed and maintained data centre with system support. Benefits to the customer and the utility at the system level are significant and include:

- Support for real time decision making on energy usage, demand side management, allocation to industrial processes, energy trading, fault and outage management, crisis management.
- Real time data is accessible through secure internet access, delivered to back end information and billing systems in standard industry formats, and is available for customized reporting at the system level and at the customer level for business focused usage analysis.
- Full load control functions for Demand Side Management (DSM) to manage peaks and troughs in energy demand particularly during periods of high demand,
- Improved knowledge about customer usage means improved forecasting of energy demand, generation needs and more efficient use of energy.
- Improved forecasting of energy demand allowing more efficient purchasing of power from generators.
- Capital deferment of large scale infrastructure due to improved knowledge of network capacity and performance.
- Reduced theft due to improved knowledge of power distribution and consumption with regular reporting of suspected theft down to a consumer level.
- Increased efficiency with more frequent reading and reductions in working capital tied up in unbilled consumption and work in progress.

1.3.2 Reference Sites/Projects

Intermoco has deployed AMR technology at a number of reference sites both within Australia and the Asia Pacific region.

The reference sites include:

- CitiPower Melbourne
 - MAB Newquay - Arkley towers in Docklands precinct for improved building security and meter reading,
 - Hawthorn Tram Depot
- Victorian Department of Treasury & Finance (Treasury Place complex)
- Integral Energy NSW Installations over five locations,
- Western Australia developer sites pending Western Power's approval,
- Bluehills Retirement Residences,
- Victorian Sewerage monitoring Project,
- Flair Menswear,
- RMIT and LaTrobe Universities.

In the Asia Pacific region important reference sites include:

- Tenaga Nasional Berhad,
- Gas Malaysia - Monitor LPG tanks,

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2.0 Summary of Position

Intermoco generally endorses the quality and adequacy of the discussion in the Issues Paper and the thoroughness of the identification process that isolated the issues to be considered in the Review

2.1 Smart Meters

At the overview level Intermoco fully supports the accelerated, mandated roll-out of interval meters. Recognition of the importance of this step is inherent in the original ACCC determination (ACCC Determination on Full Retail Competition and Registration of Code Participants, August 2001, p19) and the more recent address to the Utility Congress by Professor Allan Fels (Professor Fels; Reforming Australia's Electricity Market; The Utility Congress; 3rd September 2002). In this address, Professor Fels argued that the deployment of interval meters was an essential reform to correct imperfections in the market. The Parer Report (Towards a Truly National and Efficient Energy Market; Senator Warwick Parer, Commonwealth of Australia, 2002) also recommends the mandated roll out of interval meters.

Intermoco supports the Parer recommendations, which in summary called for the mandatory accelerated roll out of interval meters to all contestable customers, over 5-10 years, implemented and funded by distributors, who will own the meters. It is recognized that under this approach distributors may need to approach the ESC to seek approval for deployment proposals to install an integrated AMR solution, and to recover their direct cost and an appropriate return on the capital employed.

Intermoco also submits that in addition to the deployment of interval meters, AMR technology should be mandated, integrated into those meters and deployed in the same program to all business customers and to the following classes of residential customers (usage >10MWh pa; and usage <10MWh pa with single phase off peak metering). This recommendation is justified on the following grounds.

- It is an essential ingredient to the achievement of demand side management benefits;
- It is a stable and effective technology;
- Market participants and consumers gain a benefit from significant cost advantages in a mandated rapid scale deployment;
- It is justified on the basis of a benefit cost analysis included in the recent ESC Position Paper for
 - All business customers;
 - Residential consumers with usage >10MWh pa; and
 - Residential consumers with single phase, off peak meters and usage <10MWh pa.

In respect of residential consumers with single phase meters and usage <10MWh Intermoco supports a study and literature review to identify and quantify the potential response to a mandated roll out of interval metering and two way communications, and the potential implementation of innovative tariff plans designed to elicit a demand side

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management response, and the impact of that response in terms of load shifting, price elasticity.

Intermoco recognizes that there is a cost associated with the mandated roll out of interval meters and AMR technology that will ultimately be born by consumers. Nevertheless Intermoco argues strongly that the recent Benefit Cost analysis published by the ESC in their recent Position Paper, cited above, demonstrates a positive net benefit from the introduction of both interval meters and AMR solutions.

2.2 Staged AMR Deployment To High Energy Users

AMR enabled, smart meters provide real time information, which provides benefits through facilitating better energy management by consumers, innovative tariff structures and real time market settlements.

It is submitted that the roll-out of AMR enabled, smart meters should be staged in such a way that the benefits of deploying to high energy consumers are captured in the initial deployment. Deployment of AMR enabled, smart meters to high energy users will yield the greatest benefit per user and capture the "low hanging fruit" early in the program.

Intermoco recognizes that market and regulatory impediments to the deployment of interval meters and AMR are not uniform across the market. For example, to a large energy user the cost of the deployment of an interval meter and AMR solution is a small proportion of the total financial impact under consideration and it is overshadowed by the potential benefits when reviewing offers from retail suppliers. However, the same cost is proportionately larger for smaller users and has the potential to act as an impediment to change.

It is in the interests of the market to have access to this information in real time and to incorporate this information in the settlement process. Delay in the provision of information from interval metering on large customers may lead to unnecessary post settlement adjustments in the settlement process.

Implementing AMR solutions on all larger customers and using real time information rather than profiles to improve the matching process achieves this result. Finally there are significant social/community benefits from better matching of generation and demand.

2.3 Regulatory Issues

The findings and the views of the ESC whereby they recently concluded that interval meters were unlikely to be adopted on a wide scale through a market based approach are fully endorsed. It is further considered that the ESC conclusion will apply to AMR technologies with two-way telecommunications capabilities and this aspect should be taken into account when considering deployment options.

Intermoco submits that regulation is necessary to ensure the deployment of AMR enabled smart meters. Intermoco favors light handed regulation, however in this case a mandated roll-out is warranted. In addition, Intermoco submits that industry structure and the regulatory environment can act as a disincentive to the deployment of AMR solutions and complementary amendments to regulations to facilitate capital recovery and to best

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utilize the real time data capabilities of this technology will be required. For example, body corporates are precluded from on-selling electricity to the affiliated tenants and this limits their ability and incentive to install interval meters and manage energy usage within the building. Regulations such as these also need to be reviewed and relaxed.

Intermoco also is of the view that the large-scale implementation of AMR enabled smart meters in Australia has been delayed by the fact that the benefits of AMR accrue to and are distributed across different industry participants but the costs are borne by the provider. A fundamental impediment is that the full range of benefits are not captured by the market entities (primarily the distributors) that own the meters and bear the capital cost of deployment.

2.4 AMR - Deployment Costs

The AMR capability is considered to be a critical element in achieving the social/community, market and operational benefits flowing from the deployment of interval meters. Intermoco also submits that there are substantial benefits from a concurrent scale roll out of AMR and interval meters.

Intermoco considers that the costs of a large-scale deployment of AMR/interval metering can be estimated with certainty. The cost advantage of a scale deployment of AMR focused on electricity distribution areas and utilizing a powerline communications (PLC) access network solution is substantial compared to a policy of cherry picking installations. Deployment of interval meters with an integrated AMR interface also ensures that any additional costs of retrofitting are avoided.

Intermoco advises that based on current known cost trends and significant volumes, consistent with volumes considered in the recent ESC Position Paper, a capital cost of \$150 per meter for a single phase interval meter with an integrated AMR interface (PLT based) is appropriate. Intermoco further advises that an annual charge of \$25 pa for AMR data collection costs is appropriate. These charges compare favorably to the capital cost range of \$150-180 and data collection costs of \$32 pa used in the ESC benefit cost analysis. Under similar caveats the appropriate capital cost for a 3-phase meter with an integrated AMR interface is \$420 and the appropriate annual data collection cost is \$45.50. Under current cost trends for PLT based AMR solutions there is also no substantive difference in the cost of the 3-phase AMR interface compared to a single phase AMR interface.

2.5 Technology Advances

Intermoco recognizes that the prohibitive cost of scaleable telecommunications solutions, data carriage costs and the need for systems to provide real time information that is easily accessible have also constrained the adoption of AMR in the past. These problems have now been overcome. AMR is a well-developed, fully commercialized and robust technology that is increasingly being adopted worldwide. There is a competitive market of suppliers in Australia and overseas.

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3.0 The Need for AMR with Two-Way Communication

3.1 Additional Benefits from the Adoption of AMR.

Intermoco submits that there are substantial additional benefits from communications that warrant consideration of mandating such an approach and endorses the outcomes and results of the benefit cost analysis documented in the recent ESC Position Paper titled *Installing Interval Meters for Electricity Customers*. The ESC Paper shows a significant additional benefit from the implementation of an AMR solution to business customers. It also acknowledges an increase in the responsiveness from all customers and recognizes the appropriate costs and cost savings in arriving at this finding.

Significant additional benefits also accrue from the impact of AMR on the consumer response. The ESC consultants CRA acknowledged that several studies in the US showed that residential customer responsiveness can be significantly higher with communication with in-home control technologies. Whilst the paucity of data on the percentage increase of responsiveness of business customers is acknowledged the analysis and assumptions in the Paper are based on a reasonable interpretation of overseas studies.

3.2 Business Customers

In terms of commercial customers the ESC Position Paper concludes that subject to the caveats therein:

“for all business customers the benefits of two way communication exceed the benefits in the case of manual reading for rapid deployment by \$128 million”. In respect of all business customers with usage exceeding 10MWh per year the net benefits for the communication technologies exceed the net benefits for manual meter reading for most deployment approaches. For the rapid deployment scenarios the incremental net benefits are \$140 million.

Intermoco also endorses the overall major findings of the analysis that the rapid deployment scenarios for AMR solutions provide the greatest net benefits in terms of customer responsiveness. Intermoco further submits that this benefit is potentially substantial and of significance in the pursuit of energy policy imperatives targeting better matching of generation and demand and demand side management objectives.

3.3 Strategic Focus of AMR

It is important to note that while operational cost reductions were in the past a key driver the reasons for the adoption of AMR technologies are becoming increasingly strategic. The United States AMR industry has been in existence for twenty years and initial adoption of AMR by utilities was constrained by costs (vis a vis conventional meters) regulatory and technical uncertainty - particularly over whether deregulation would mean loss of ownership of meters. The operational and cost reduction benefits identified in the ESC discussion Paper have provided justification for investment by utilities and been confirmed in recent surveys of the electric utilities.¹ There is also an increasing emphasis on the "strategic" nature of the investment in AMR and its role in improving customer

¹ Chartwell AMR Report on Deregulation and Scott op cit....

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service and in positioning utilities for competition. Regulatory interest in terms of demand management is also increasing.

The technology has until recently not been fully commercialized in Australia. The development by Intermoco of a fully commercialized AMR solution has been a major breakthrough in this technology both in Australia and the Pacific region. This solution stands apart from other previous offerings in Australia for two reasons.

- Firstly the communications technology used is sophisticated, based on the latest telecommunications technologies, cost effective and robust and the designs provide the level of flexibility needed to provide a range of cost effective technical options for different locations and environments.
- Secondly this AMR solution is incorporates all the essential functions of a ubiquitous solution. The modular manner in which the solution is constructed facilitates a flexible approach but is capable of incorporating all the functionality required in a fully functional integrated solution. The fully integrated solution extends from the integrated AMR/Interval-Meter to the database, which meets the interface specifications of the electricity industry and is accessible through the Internet via a secure firewall with appropriate data access restrictions. The Internet or the public telephone networks then support the automated feedback loops available to the customer to react and implement demand management practices.

3.4 International Experience

Generally in world markets the roll out of interval meters is accompanied by the deployment of an AMR solution in some form.

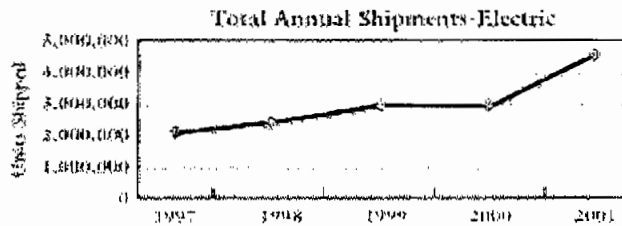
AMR has been adopted widely overseas - particularly the United States. Whilst it is difficult to generalize on reasons for this growth overseas it is submitted that the existence of vertically integrated entities that are distributors and also retailers has assisted by concentrating the benefits in the body with cost and customer responsibility and simplifying cost recovery. In addition whilst the level of overall regulation in a particular United States region does not appear to be a significant driver, it is submitted that regulatory encouragement has been a factor.

The greater focus on customer service in the United States, in areas such as service activation and restoration, and demand from consumers for information on usage has usually also meant that the immediate operational cost savings from the roll out of AMR are higher.

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AMR is a fully developed technology particularly in the United States and in the main the deployment of AMR is made concurrently with interval meters and the literature focuses on AMR units deployed rather than interval meters. There are 26 suppliers of AMR technology in the United States. In 2001 the top ten suppliers shipped 7,482 million AMR units and had an installed base of 35.532 million AMR units primarily in Electricity utilities. The AMR industry is strong in the United States and the Commission noted there are 13 million units currently installed in the United States. Almost 10.2% of all electricity meters in the United States are AMR.²

Figure 2. Annual Shipments By Different Types Of Utilities



Source The Scott Report: Insights on AMR Deployments in the United States. Cognyst Consulting

The literature referencing the overseas experience on interval metering refers primarily to the use of AMR³. Whilst the ESC Paper has properly referenced the experience and support in this literature for the benefits of interval metering, these references in the main deal with and support overseas AMR experience, and are equally important in this context.

There are very strong growth forecasts for continued use of AMR technology in the United States electricity industry. Growth is occurring over all utility types including Investor Owned Utilities (IOU's) Publicly Owned Utilities and Co-operative Owned Utilities (Co-ops). The year-on-year growth in AMR deployment by electricity utilities in 2001 was 80.6% and the growth in the IOU category (which deploys the largest number of AMR units) stood at 109%. The proportion of electric IOU's with some form of AMR deployed is 58%.

Growth is primarily occurring in those utilities that have installed significant trial schemes in earlier years and have proceeded to install a significant AMR base. Electricity utilities with over 25% of their base read through AMR technology accounted for over 60% of the new growth in AMR units deployed in 2001. Annual shipments of AMR solutions to Electricity utilities were approximately 4.5 million units in 2001 and the forecast deployment by 2005 is 29.9 million units.

² Information drawn from Scott Report "AMR Deployment in North America

³ AMR technology is used in gas and water meters. All figures used in submission refer only to meters in the electricity industry.

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3.2 The ENEL Project

Greater interest and application in other markets now parallel the growth in the US market. The Scott report identified 336 projects in 2001 involving the deployment of over 3.8 million metering units within electricity utilities outside the United States.⁴ Most notable is the Italian Utility ENEL, which has announced a plan to deploy AMR to all 27 million of its customers with completion in 2005. By mid July 2003 ENEL had installed over 10 million smart meters that were in operation with new meters being installed at the rate of 700,000 per month. Enel have announced its cost of deployment to be approximately \$2 billion Euros and it anticipates savings of \$400 million Euros a year beginning in 2005 from cost cutting and improved efficiency derived from the installation of smart meters. The Chart below shows the position at 2001 prior to the commencement of the major ENEL project.



Source: Scott report AMR is becoming an International Technology; Issue 2, 2002

4.0 Technology Advances and the Future

Communications go beyond automated meter reading. It facilitates and nurtures the wider implementation of the smart home concept and empowers consumers. Consumer responsiveness at all levels is the key to effective demand side management policies and this behavioral response is driven by feedback on usage and cost; availability and awareness of pricing policies; and the ability to respond and alter usage patterns. Two-way communications facilitates customer feedback and enables a prompt customer response.

Electrical energy is an important source of power to drive the smart home concept and communications is an important key to operationalise this concept. The smart home concept is also an integral element of the Government's vision of the future Victorian society as set out in Government policy commitments on telecommunications and shaping our future society around mastery of telecommunications and technology.

In conclusion it is submitted that there are substantive net benefits from the concurrent deployment of interval meters with an AMR interface and that these benefits should be actively pursued both for business customers and for residential customers as outlined above.

⁴ The US share of all AMR installations fell from 92.7% in 2001 to 87.7% in 2002. Scott International Deployment of AMR quoted in Metering International Issue 2, 2002

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**Comments on Issues Paper
'Joint Jurisdictional Review of the
Metrology Procedures'
Submission by Intermoco Limited**

Issue 1

Comment is sought in relation to the assessment framework. Is the assessment framework complete? Is the interpretation of economic efficiency appropriate for this Review? Are there any additional assessment criteria that should be considered? Considering the interrelationship of the different concepts, is the approach to assessing the issues appropriate?

The framework and the concepts discussed in the paper are broadly appropriate and relevant as a basis for the Review.

However the discussion and the matters considered could benefit from a detailed consideration of the user/consumer(s) ability to participate in the market. The basis of competitive markets moving to economic efficiency reflects the assumption that the consumer has an understanding of and makes decisions according to an inherent understanding of price signals from the market and their preferences. It is submitted that until the consumer is made aware in a reasonable period of time of their usage and the factors that drive their usage they have a limited ability to make decisions. There is also little incentive for retailers to offer innovative tariff structures that will reward consumers who make rational economic decisions on consumption in response to price signals from the market.

This aspect does not appear to be given sufficient weight in the framework and the assessment criteria. However it is an issue that comes up repeatedly in the literature and is a fundamental concern of the ACCC leading to the Review (ACCC Determination on Full Retail Competition and Registration of Code Participants, August 2001, p19).

The contestable electricity market has been established with a framework of regulation and structure to drive contestability and deliver the benefits of a competitive market. However in many fundamental areas the regulations driving the provision of information on consumption and the factors that drive their consumption need to be reviewed.

For example, the minimum levels of usage information to be provided to consumers is set out in the Electricity Retail Code which requires billing "at least every three months" and "best endeavors to ensure the customers meter is read at least once in any 12 months". This does not support the customer's need for information and feedback on usage and the objectives of demand side management or the drive to an efficient market.

Similarly the planning rules governing installations at the high end of the usage market are inadequate both at the planning level and at the operational level. At the planning level only Western Australia which is not participating in the NEM has passed a regulation requiring substantial commercial buildings (> 20 meters or > 3 levels) and buildings with high level security requirements to install remote reading facilities in all new buildings (WA Electrical Requirements, Director of Energy Safety, Energy Safety WA under the provisions of Regulation 49 of the *Electricity (Licensing) Regulations 1991*, March 2003). Current arrangements whereby developers can install an inadequate minimum requirement in substantial commercial buildings

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are not satisfactory. This arrangement leads to stranded assets and high costs to tenants as full replacement is required.

At the operational level the settlement process in the NEM requires a settlement in the wholesale market. This process leads to a series of debits and credits. Delay in the provision of information from interval metering on large customers may lead to unnecessary post settlement adjustments in the settlement process. It is in the interests of the market to have access to this information in real time and to incorporate this information in the settlement process.

Finally there are significant social/community benefits from better matching of generation and demand. Implementing AMR solutions on all larger customers and using this information to improve the matching process achieves this result.

Issue 2

Comment is sought in relation to whether the current jurisdictional metering arrangements are a barrier to all consumers, or to a group of consumers, adopting economically efficient metering solutions or other technology options. Are there allocative efficiencies that may be captured by adopting alternative metering solutions or other technology options?

The current jurisdictional arrangements are considered a barrier to consumers adopting economically efficient metering solutions or other technology options. Consumers without Interval meters and AMR capability are not in a position to be aware of their usage in a timely manner or the factors that influence their usage. The important question is whether it is possible for the market to progress towards an economically efficient market without information on usage and factors that drive usage being provided to consumers.

Comparison can be made to the telecommunications market where prior to de-regulation consumers could not obtain detailed records of National Long Distance Calls. To provide this level of information carried a cost penalty and introduced a major data processing load and billing complexity. Nevertheless it was addressed and completed quickly and this step facilitated the development of the competitive market. The decision to make this information available to consumers was an essential pre-requisite to de-regulation of the market and the drive towards economic efficiency in telecommunications in Australia. It is suggested that a similar decision is required to drive the electricity market towards economic efficiency.

The wide scale deployment of Interval meters and AMR technology will lead to capturing higher levels of allocative efficiencies. The outputs of the benefit cost analysis included in the recent ESC Position Paper Installing Interval Meters for Electricity Customers - Costs and Benefits Provide support for this claim.

Issue 3

A range of metering solutions and other technology options have been considered. Comment is sought as to whether there are other metering solutions or technology options that should be considered, consistent with increasing economic efficiency. Has the discussion, including the comparison of options in Appendix B, adequately considered the options relating to metering solutions and other technology options?

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The range of metering options discussed are appropriate as a basis for consideration in the Review. The discussion in Appendix B considers all the options but is inherently deficient in that such consideration needs to be undertaken in the context of a benefit cost analysis. Care also needs to be taken to ensure fairness in evaluation and comparison. Cost is a readily understood measure that is relatively easily quantified. However, benefits in this context can be more complex to present and quantify with any precision. Also it is relatively easy to gloss over the fundamental weaknesses of profiling in a qualitative commentary. These aspects will be addressed in the Review.

Issue 4

A range of options for deploying metering solutions and other technology have been considered. Comment is sought as to whether there are other deployment options that should be considered. Has the discussion, including the comparison of options in Appendix C, adequately considered the issues related to deployment options.

The findings and the views of the ESC whereby they recently concluded that interval meters were unlikely to be adopted on a wide scale through a market based approach are fully endorsed. It is further considered that the ESC conclusion will apply to AMR technologies with two way telecommunications capabilities and this aspect should be taken into account when considering deployment options.

This ACCC expressed concern in 2001 that "only interval metering ... will provide the potential for signals to encourage demand side responsiveness and innovative retail tariffs, thereby leading to more genuine retail competition." It is considered that ACCC concerns expressed in 2001 have correctly foreshadowed market development and the low levels of demand side responsiveness and innovative retail tariffs currently exhibited by the market reflect the reliance on profiling and the relatively insignificant deployment of interval meters to date.

The ESC conclusion when coupled with the ACCC concerns and the current state of the market all argue powerfully that a market based approach to deployment of interval meters is untenable as an appropriate future public regulatory policy to guide the development of the industry.

It is considered that interval meters with integrated two way communications technology should be deployed to all consumers. The suggested implementation arrangement is to prioritise and stagger the deployment by deploying to business customers initially followed by high usage residential customers (>10MWh pa) and residential customers with usage <10MWh pa with single phase off peak metering. The total deployment should be completed within 6 years.

It is submitted that the deployment of AMR technology for all business customers and for some classes of residential customers (usage >10MWh pa; and usage <10MWh pa with single phase off peak metering) is justified on the following grounds.

- It is an essential ingredient to achieving demand side management benefits;
- It will provide the real time information needed to support pricing signals to customers.
- It is a stable and effective technology;
- Market participants and consumers gain a benefit from significant cost advantages in a mandated rapid scale deployment;

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standard through approved suppliers. Granting exclusivity to distributors in this area is likely to stifle innovation and for this reason it is not considered an appropriate regulatory policy.

Issue 6

Alternative meter ownership options have been discussed, and the changes required to regulatory instruments to implement change have also been discussed. Comment is sought as to whether the existing meter ownership model is a barrier to consumers switching retailers or a barrier to consumers adopting economically efficient metering solutions or other technology. Should any other options be considered in relation to meter ownership? Which party should own the meters? Has the discussion including the comparison of options provided as Appendix E, considered adequately the issues related to meter ownership?

In terms of meter ownership, Intermoco supports the relevant recommendations of the Parer Report:

2. Distributors to own the meters and allowed to keep the cost in their regulated asset base, which can then be charged to consumers in distribution charges. Access to meter data must be available to retailers as requested by the user.
3. A minimum standard for interval meters for consumers must be established. This will provide an opportunity for standards to maintain pace with metering technology development. Consumers should be able to opt for a more advanced meter should they require it.

However as submitted under Issue 6 above at the completion of the upgrade program meter ownership regulations should be relaxed to encourage innovation and to allow retailers to gain cost efficiencies from standardizing their meter technology. The market benefit from relaxing meter ownership regulations is achieved primarily by ensuring that larger users and particularly business users are able to opt for more advanced meter technology should they require it.

At the completion of the upgrade program meter ownership regulations should be relaxed to allow meter ownership by Distributors, Retailers, Customers, and other suitable industry participants such as meter data agents and meter data providers who are prepared to accept the defined set of responsibilities associated with meter ownership.

In terms of the regulatory position the distributor should still carry the obligation as the meter provider of last resort. Similar concepts apply in other industries particularly the telecommunications industry where Telstra the incumbent carrier carries a regulatory obligation as the carrier of last resort. Suitable arrangements to ensure that all participants in the market share the burden of high cost installations may also need to be considered.

Issue 7

Legal and regulatory issues which may be a barrier to the adoption of economically efficient metering solutions and other technology options, have been discussed: the flexibility to vary distribution and retail tariffs; the "non reversion policies that are applicable to interval meters; the period over which metering data is stored; the provision of access to metering data; and enforcement of unique Australian standards. Are these legal and regulatory issues barriers to the adoption of economically efficient metering solutions and other technology. Are there any other legal and regulatory issues which need to be considered?

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to data, information systems and business processes operated by the distribution arm of the entity or its affiliates providing meter services, than any other retailer.

Issue 9

Comment is sought in relation to whether there should be greater consistency across the jurisdictional metrology procedures for metering installation types 5, 6 and 7. What are the benefits realizable from greater national consistency across the metrology procedures? Should responsibility for some or all of the metrology procedures be transferred from the jurisdictional regulators to NEMMCO? Are there any additional options for developing a greater level of national consistency across the metrology procedures for metering installation types 5, 6 and 7 that should be considered? Has the discussion, including the comparison of options in Appendix F, considered adequately the issues related to furthering consistency across the Metrology Procedures?

Consistency across the metrology procedures for installation types 5, 6 and 7 is highly desirable. The options outlined in the paper are seen as appropriate to form the basis of the discussion and the discussion in Appendix F explores adequately the issues related to furthering consistency across the metrology procedures.