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Department of Industry, Tourism and Resources  
GPO Box 9839  
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Dear Sir/Madam

**Smart Meter Cost Benefit Analysis Phase 1 – National Minimum Functionality**

Thank you for the opportunity to comment on Phase 1 of the Smart Meter Cost Benefit Analysis commissioned by the Ministerial Council on Energy. Further to the published Regulatory Impact Statement, please find attached the Western Power submission.

Please feel free to contact Valentin Fyrst on (08) 9326 4560 for further information on the submission.

Yours sincerely

**Gavin Forrest**  
**Acting General Manager Strategy and Corporate Affairs**

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**Smart Meter Cost Benefit Analysis Phase 1**  
**National Minimum Functionality**

**Submission to the Ministerial Council on Energy**

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1 November 2007

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# 1 Introduction

Western Power's submission recognises the intent to apply recommendations of the Ministerial Council on Energy to all jurisdictions. This submission reflects Western Power's support for a common approach and national minimum functionality for smart meters.

Whilst the submission responds to the Regulatory Impact Statement (RIS) and related reports, Western Power encourages greater analysis of network operator led models to capitalise on benefits for managing network demand and augmentation options.

Western Power is keen to work cooperatively at a national and State level in support of the objectives for the use of smart meters.

## 1.1 Background

As part of its Meter Management Plan, Western Power is currently replacing a targeted population of single-phase meters due to non-compliance with accuracy requirements. To date more than 65,000 single-phase meters have been replaced with interval data and remote communications capable meters (out of 100,000 targeted meters). Western Power's meter replacement program is scheduled for completion by June 2008.

Sample testing has commenced on the three-phase meter population. Western Power is expecting that approximately 300,000 meters are likely to be replaced due to age. Under the current strategy they would be replaced with 'smart' meters. Western Power has determined the functionality of these 'smart' meters.

To date, the South West Interconnected System (SWIS) of WA includes in excess of 70,000 interval capable meters, of which 5,500 are remotely accessed via the MV90.

The combined meter population within WA, of Western Power and Horizon Power, is approximately 990,000, including 11,000 CT installations and 979,000 whole current (direct connect) meters. The meter population is growing at an approximate rate of 3-4% per annum.

## **2 General questions pertaining to the Regulatory Impact Statement**

### **2.1 Do you agree with the problem definition in this RIS?**

#### **2.1.1 Should there be a defined national minimum functionality for smart meters within the National Electricity Rules?**

Western Power supports the inclusion of a defined minimum functionality for smart meters within the NER. However, due to specific requirements, each jurisdiction should be allowed the inclusion of necessary functionalities above and beyond the defined minimum.

Currently, Western Power's meter functionality requirements include remote communication, interval data recording and time of use capability/recording (register and interval data).

Western Power is supportive of the inclusion of supply capacity control, remote disconnect/reconnect and load control (or demand-side management) functionalities being included, as market participants have already expressed interest in accessing these functions.

#### **2.1.2 If so, which of the proposed advanced smart meter functions should be included in the national minimum standard?**

Western Power supports smart meter functions as described in Table 1.1 of the RIS.

### **2.2 What is your view on the suggested options raised in this RIS and the analysis of them?**

#### **2.2.1 Option A – The status quo**

Historically, Western Power has developed programs and projects to suit the circumstances of the SWIS, including upgrades to meter functionalities and replacement programs. More recently, Western Power has compared its basic meter functionalities with that of other jurisdictions and found them to be very similar. This seems to indicate all jurisdictions are already converging towards a virtually common minimum functionality for smart meters.

In the event of a retailer-led roll-out, although a cost increase by retailers to maintain multiple systems is not proven (KPMG assumed recurrent operating activities), Western Power believes the likelihood of this occurring would increase. Each of the six WA retailers would have to establish separate systems, rather than utilising a network operator-centric system.

The status quo is highly likely to limit available meter functionality to retailers. In WA, for example, retailers would not have access to all metering technology benefits, as the remote disconnect/reconnect functionality is not part of the current minimum meter functionality. Eventually, different functionality levels are likely to occur due to retailer requests, which could lead away from consolidated meter functionality in the market.

In WA, the meter is owned and managed by the network operator, Western Power. Any roll-out would most likely be led by Western Power.

### **2.2.2 Option B – Allow market to decide smart meter functionality**

As national minimum functionality is meant to benefit all stakeholders, the intent should be to encourage close collaboration of all stakeholders when determining which minimum functionalities would yield the highest benefit for customers, as well as addressing load management functionalities. Moreover, this will assist network operators and generators when considering investment on new infrastructure.

While it would only be jurisdiction-specific, Option B should see network operators and retailers collaborating to achieve the best outcome for stakeholders.

In WA, Western Power prepares the strategy for metering functionalities in close consultation with retailers to ensure their requirements are considered.

### **2.2.3 Option C – National minimum functionality and performance level**

This is Western Power's preferred option, as it provides a minimum level of consistency and standardisation between jurisdictions, leading to economies of scale for supply and installation. Option C does not inhibit further development and innovation by the market, whilst assuring a minimum base to work from.

While Western Power favours this option, it is recommended that there be no restrictions for jurisdictions to implement additional suitable functionalities. This would provide for the possible future introduction of new functionalities when the requirement arises for relevant jurisdictions.

## **2.3 Do you agree with the benefits, risks and impacts identified in this RIS?**

Western Power generally agrees with the derived benefits presented for the three options. However, in-depth analysis of a network operator-led scenario would have provided a more holistic view of the issues, rather than favouring a retailer-led scenario (i.e. the benefits derived from the introduction of minimum functionalities should cover all stakeholders).

Moreover, the analysis is based on assumed retailer data and incremental costs. The consultants do not appear to have considered instances where network operators are the existing metering service providers and as such own the most accurate data required for the analysis.

The analysis would have benefited from a comparison between incremental costs to be incurred by network operators and retailers.

Also, increased costs due to the maintenance of multiple systems would be more likely to occur if the roll-out of smart meters is done through retailers (refer 2.2.1).

## **2.4 What are your views on the analysis and conclusions of the overall cost benefit analysis of specific functionality?**

Refer section 2.3 discussion.

### **3 Discussion of preferred option**

#### **3.1 Option C – National minimum functionality and performance level**

##### **3.1.1 Stakeholders are asked to provide views or data on the inclusion of these functions in the national minimum functionality.**

Western Power agrees with the inclusion of the functions in the national minimum functionality subject to consideration of the following issues:

- Existing back office systems and human capital would be unable to meet processing requirements due to significant increase in interval data volume and frequency, leading to affected performance levels.
- Due to the vast geographical landscape of WA a single national communication solution is unlikely to meet operational requirements in WA, which is likely to require a blended or hybrid solution.

##### **3.1.2 Stakeholders are asked to provide views or data on these uncertain functions and whether or not they should be included in the national minimum functionality.**

###### *15 – Interface to other load control devices*

Western Power is of the opinion that this function can be performed under function 14 – *Load management at meters through a dedicated control circuit*, but supports the application of other communication methods (e.g. ripple control) if they have a proven benefit.

###### *16 – Interface to home area network using*

Western Power is of the opinion that the in house display has merit from a stakeholder point of view (i.e. consumers have visual display to control energy consumption, possible demand-side management of their local load). However, using the Zigbee protocol as the communication method at this stage requires further investigation and analysis. In principle, Western Power agrees with the use of wireless technology.

###### *21 – Customer supply monitoring*

Western Power is of the opinion that function 6 – *Tamper detection* may have the ability to detect these anomalies.

###### *23 – Interoperability for meters/devices at application layer*

Western Power is of the opinion that this could have some benefit when applied to the reading of gas and water meters, but would require further analysis.

###### *24 – Hardware component interoperability*

Western Power is of the opinion that this is a desirable function as it provides marketing and value add opportunities for market participants (e.g. network operators may wish to offer branded in house displays as part of extended services).

**3.1.3 Stakeholders are asked to provide views or data on these uncertain functions that have been excluded from the national minimum functionality.**

*10 – Power factor management (single-phase meters)*

Western Power does not see any benefit in this function.

*17 – Provision of in home display*

Western Power is of the opinion this is provided for by function 16 – *Interface to home area network using*.

*18 – Interface for communication for gas and water meters*

Western Power does not recommend the inclusion of this function at this stage.

*22 – Real-time service checking*

Western Power is of the opinion this is provided for by function 20 – *Meter loss of supply and detection*.

*27 – Separate standard base plate*

Western Power does not support the inclusion of this function at this stage.

*28 – Non-meter board installation*

Western Power does not support the inclusion of this function at this stage.

**3.1.4 To what degree do stakeholders think the functions recommended in the cost-benefit analysis will affect demand response and the range of products offered by retailers?**

Western Power believes initial impacts would be limited, but will tend to increase as tariffs and education programs provide incentives for consumers. However, smart meters are not likely to impact demand response themselves until offered as part of a broader product or service offering.

In WA there are currently a number of programs underway that may impact future products and services. These include:

- Direct load control trial of air conditioning (Western Power).
- Review of retail tariffs (Office of Energy).
- Review of roll-out of smart meters (Office of Energy).
- Review of network impact of photovoltaic and embedded generation (Office of Energy).

**3.1.5 To what degree would a national minimum functionality change the attractiveness of that functionality for retailers?**

From a network operator perspective, the national minimum functionality would allow the introduction of demand-side management and load control programs by network operators, which would benefit electricity networks in terms of monitoring and controlling transformer loads. Moreover, it may limit and delay the requirement upgrades of transformers and transmission line capacity.

In the longer term, the national minimum functionality would also have a substantial effect on future infrastructure and major network augmentation investments.

However, issues such as implementation costs and customer acceptance require consideration before the introduction of a national minimum functionality.

**3.1.6 Do stakeholders have a view on the likely impacts on consumers under Option C?**

Although Option C will offer additional incentives and choices, it may also increase costs to consumers, as switching and load management functionalities (12 – *remote connect/disconnect*, 13 – *supply capacity control* and 14 – *load management*) require the addition of contactors to meters, which is a physical meter alteration. This increase in meter costs is likely to translate into increased costs for consumers

**3.1.7 What are stakeholder views on the set of impacts identified under Option C? Please provide quantification of these impacts where possible.**

Western Power generally agrees with the set of identified impacts, but challenges the assumption that introducing additional international manufacturers may increase local competition.

The market is currently open to the participation of all international manufacturers provided offered meters meet the requirements of the applicable Australian Standard. Under the national minimum functionality offered under Option C, this would allow market forces to drive competition due to economies of scale.

## 4 Implementation considerations

Other than issues addressed throughout this submission and in the event of a national smart meter roll-out, Western Power has a particular interest in the following implementation considerations and their impact for WA:

- *The overall objectives and strategy for the roll-out that maximizes benefits across the economy and for consumers, including in relation to timing within clearly defined geographical locations and for clearly defined segments of the market.*
- *Clarification of technical requirements for metering systems.*
- *Establishment of clear and realistic timelines and responsibilities for each roll-out task (e.g. managing procurement and installation of the smart metering system).*
- *A clear plan for ensuring necessary coordination between all the relevant parties (including government agencies, regulatory authorities, the network operator, and retailers).*
- *Appropriate funding and cost recovery arrangements, taking into account existing regulatory parameters.*
- *Appropriate strategies for the customer education to enable effective employment of proposed smart metering technology.*
- *A mechanism for ongoing review of metering system requirements.*
- *A strategy for mitigating barriers to deriving expected benefits of smart metering technologies.*
- *The potential for new entrants in a competitive market to impede the effective implementation of smart meters by offering simplified flat tariffs that do not require smart meter technology.<sup>1</sup>*

Moreover, as WA operates under a different regulatory regime than other jurisdictions Western Power would like to emphasise that a national roll-out of smart meters should be required to consider differences in regulatory regimes with a view to ensure regulatory compatibility of any roll-out in WA.

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<sup>1</sup> *Electricity Market Review Issues Paper, Office of Energy (2007).*

## 5 Other comments

To address current and future challenges and opportunities of energy supply in Western Australia, Western Power has developed a Strategic Plan for 2008-2010 and a Strategic Direction Statement to 2016, both of which will assist the development of the energy industry in the State.

The foundation of Western Power's strategic direction remains operational excellence – a commitment to the safe, reliable and efficient transmission and distribution of electricity through efficient work practices, commercially focused business operations, achieving a challenging capital works and maintenance program, and improving our support systems and processes to deliver quality programs and services.

To build on our operational excellence, Western Power has added three strategic themes, all of which will assist the continued development of the energy industry in Western Australia. The three strategic themes recognise and anticipate the need for sustainable development and the changes occurring in government policies, community expectations and technological changes.

The three strategic themes are engaging with the community; transforming the customer experience; and developing the 'green edge'. All three involve Western Power evolving and maturing from being a network operator to an energy solutions business.

We have embarked on the need to engage with our communities and our stakeholders to develop energy solutions that meet the needs of our customers, communities and industry.

Western Power intends to broker better relationships in the delivery of energy solutions and the ensuing greater level of understanding of issues will improve the prospects for consensus in developing optimum energy solutions.

A clear and detailed understanding of our customers current and future needs will ensure we develop optimum solutions to meet these needs. This will minimise the risk of asset stranding, reduce the long-term costs of supply and facilitate the most sustainable energy sources.

Developing the 'green edge' involves raising awareness of energy consumption patterns, leading the sustainability debate and identifying energy solutions for the future.

Western Power will think and act beyond 'poles and wires' by working with industry and the community to develop alternative options for energy development.

To facilitate these initiatives, Western Power will support communities in developing sustainable energy solutions by developing a portal for services; establishing community and industry forums; undertaking demand management initiatives; developing intelligent network technology and capabilities; and working with industry to deliver support services to connect renewable energies to the SWIS.

We look forward to working with all our stakeholders to develop energy solutions that contribute to sustainable development, security and reliability of energy supply and competitive energy prices in Western Australia.

## 6 Glossary of specific terms

- Horizon Power: Regional Power Corporation trading as Horizon Power.
- MV90: The MV90 software is a multi-vendor translation system that collects and analyzes data from a variety of different brands of meters.
- SWIS: The South West Interconnected System is an electricity system covering an area extending from Kalbarri in the North to Kalgoorlie in the East and Albany in the Southeast of WA.
- Western Power: Electricity Networks Corporation trading as Western Power.

## **7 Further information**

For further information on this submission, please contact:

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