

Ref: GL:JC:A76761

8 May 2008

Manager, MCE Secretariat
Department of Industry, Tourism and Resources
GPO Box 9839
Canberra ACT 2061

Submitted electronically : MCEMarketReform@ret.gov.au

Dear Manager

Cost-Benefit Analysis of Options for a National Smart Meter Roll-Out (Phase Two – Regional and Detailed Analyses) Consultation Regulatory Impact Statement April 2008

Country Energy welcomes the opportunity to submit a response to the Standing Committee of Officials of the Ministerial Council on Energy '*Cost-Benefit Analysis of Options for a National Smart Meter Roll-Out (Phase Two – Regional and Detailed Analyses) Consultation Regulatory Impact Statement April 2008*' consultation paper, and acknowledges the significant contribution this study makes.

Country Energy offers strong in principle support for the deployment of smart meters, recognising their many potential benefits. Country Energy recognises the implementation of smart meters as a necessary foundation element of a broader intelligent network solution. Country Energy has recently joined an international collaboration of utility companies looking at developing intelligent utility networks, and is embarking on the development and deployment of the first large scale Australian test of an integrated intelligent network.

Country Energy recommends a move to implementation of 'real world' trials and a staged deployment that validates the business case assumptions of cost and benefit, while confirming the functionality specification and technology solutions.

If you have any questions in relation to this submission please contact myself, or Natalie Banicevic, General Manager Regulatory Affairs, on 02 6589 8419.

Yours sincerely



Bill Frewen
Group General Manager External Relations

Att. 1.

Consultation Regulatory Impact Statement

Cost–Benefit Analysis of Options for a National Smart Meter Roll-Out (Phase Two – Regional and Detailed Analyses)

Country Energy's Submission

1 Executive summary

Country Energy welcomes the opportunity to comment on the *Cost-Benefit Analysis of Options for a National Smart Meter Roll-Out (Phase Two – Regional and Detailed Analyses) Consultation Regulatory Impact Statement April 2008*, released for public consultation by the Ministerial Council on Energy (MCE) Standing Committee of Officials on 8 April 2008.

Country Energy offers strong in principle support for the deployment of smart meters, recognising their many potential benefits. Country Energy recognises the implementation of smart meters as a necessary foundation element of a broader intelligent network solution. Country Energy has recently joined an international collaboration of utility companies looking at developing intelligent utility networks, and is embarking on the development and deployment of the first large scale Australian test of an integrated intelligent network.

Country Energy's submission makes the following observations:

- We are supportive of a mandated roll-out of smart meters where the benefits exceed the costs; providing the necessary assurance of regulatory reform and cost recovery mechanisms required for an effective roll-out of smart meters.
- We endorse the distribution network business led roll-out as the preferred scenario, with exclusivity for not only the period of the roll-out but also the ongoing operation and maintenance of the smart metering infrastructure.
- We recommend that the roll-out timeframe needs to be further reviewed in conjunction with industry pilots and technology trials. Achievement of any timeframe will be dependant on the available technology to meet the minimum functionality requirements as well as the existence of sufficient and appropriately skilled resources to complete the change out program
- We support the need to review of the use of standard base plate (plug in) meters in order to provide more effective long term solutions to the existing skilled labour shortage.
- There is uncertainty regarding the breakdown of costs and benefits between the customer classifications of urban, rural and remote – Country Energy recommends validation of any assumptions through trials.
- Regulatory reform is necessary to provide investment certainty. Country Energy fully supports the creation of a technical and regulatory working group to review the legal and regulatory framework and recommend necessary changes to support the roll-out of smart meters where the benefits outweigh the costs.

Country Energy believes in the potential of smart meter technology and is already preparing to invest in the validation of the business case through large scale trials as part of a wider Intelligent Network program.

Country Energy recommends a move to implementation of 'real world' trials and a staged deployment that validates the business case assumptions of cost and benefit, while confirming the functionality specification and technology solutions.

2 Background

This submission responds to the Cost-Benefit Analysis of Options for a National Smart Meter Roll-Out (Phase Two – Regional and Detailed Analyses) Consultation Regulatory Impact Statement April 2008, released by the Standing Committee of Officials of the Ministerial Council on Energy, 8 April 2008.

The Council of Australian Governments (COAG) began the process of investigating the potential for a national smart meter program in February 2006. The Ministerial Council on Energy (MCE) was asked to define a national framework and determine the policy direction. In April 2007 COAG endorsed a national roll-out “where benefits outweigh costs”.

The Federal Department of Industry, Tourism and Resources (DITR) were charged with being the co-ordinating body for the COAG/MCE initiative, and prepared a brief for a national cost-benefit analysis. NERA Economic Consulting were appointed lead consultant for the cost-benefit analysis along with a group of specialised consultants informing a number of areas.

Phase 1 of the cost benefit analysis involved reviewing costs and benefits for a minimum metering functionality. MCE Decision paper released 13 December 2007, ministers have agreed to support an initial set of functions to be included in the national minimum functionality for smart meters.

Phase 2 involved the completion of a national cost benefit analysis including the estimates of costs and benefits of smart metering and direct load control for each jurisdiction. Phase 2 also provided further review and recommendations on the minimum functionality for smart meters. The phase 2 report was released for public consultation 5 March 2008.

3 Response to specific questions

Country Energy’s submission provides responses to specific questions asked within the regulatory impact statement (RIS) accompanying phase 2 of the Ministerial Council on Energy’s consideration of a smart meter roll-out.

3.1 Split benefits problem

The split benefits problem refers to the inability of the electricity sector to implement smart meters without government intervention due to benefits being split between multiple electricity industry participants, consumers and longer-term market effects.

1. Do stakeholders agree with the problem description, including the fact that the split-benefits problem inhibits businesses from rolling out smart meters of their own accord?

The results of the Cost Benefit Analysis of Smart Metering and Direct Load Control highlight that in some jurisdictions a distribution business may be able to justify the implementation of smart meters in their own right. For a distribution lead roll-out scenario, the size of business efficiency benefits have a positive net benefit when considering first round impacts only.

It has been noted within the smart meters cost benefit analysis that with second round impacts applied, a proportion of these benefits would be passed through to consumers within the next price determination

period; as such the distribution business would not be able to recover the full cost of the roll-out of smart meters.

Country Energy has assessed not only smart meters but also the incremental benefits that may accrue with intelligent networks. Country Energy is aware of and agrees with the split benefits problem. Country Energy recognises that mandating the distributor-led roll-out of smart meters would resolve this problem as distributor costs may be recovered through cost pass through arrangements. The National Electricity Rules (NER) provide for pass through events which can be triggered by:

- a) a regulatory change event;
- b) a service standard event;
- c) a tax change event;
- d) a terrorism event.

The cost pass through mechanism that forms part of economic regulatory arrangements should be designed to enable distributors to fully recover any unforeseen material costs if they eventuate. A mandated smart meter roll-out may have broader impacts on distributors aside from the substantial costs that may be involved, for example in the areas of pricing strategy, demand management and consumption profiles. Country Energy believes it is important that the pass through event for a mandated smart meter roll-out is able to cater for all impacts and changes to a distributor's regulatory proposal parameters.

Country Energy believes in the potential of smart meter technology and is already preparing to invest in the validation of the business case to demonstrate net benefits. A Research and Education Centre is under development in Queanbeyan which will not only demonstrate smart meters but broader intelligent network concepts and components.

Planning is also underway for the development and implementation of Country Energy's first intelligent network community, which will include the deployment of smart meters in conjunction with other intelligent network components including network sensors. It is anticipated that this community will cover a town of more than 10,000 customers, testing and demonstrating IN technologies, process and concepts and including network and customer management to provide the first large scale Australian test of an integrated intelligent network.

However, this development can be costly and without a mandate the mechanism of recovery is not assured through current regulatory processes. Mechanisms available under the current IPART Determination for NSW distribution businesses are limited to the D-factor.

The D-factor's purpose is to provide incentives to distributors to undertake demand management in NSW, it aims to address concerns regarding rising peak loads and network asset utilisation in NSW, by promoting an efficient level of demand management.

To date, Country Energy has made only modest claims under the current D-Factor Scheme due to the limited compatibility between available technologies for non-network alternatives and the specific nature of emerging network constraints.

The extension of the D-Factor Scheme into the next determination period of 2009-2014 is welcomed by Country Energy, but in general it is not an effective means of cost recovery for large scale pilot programs that incorporate smart meters.

With the current determination due to terminate next year, the AER Determination for 2009-2014 is proposed to allow distribution businesses another potential source of costs recovery with the introduction of the Innovation Allowance Scheme.

The Innovation allowance is proposed to stand at \$600,000 per year for Country Energy. This allowance is unlikely to cover the cost of undertaking pilots and trials. Even if there was the ability for network businesses to accumulate this annual fund so that in year four, for instance, \$2.4 million could be spent on a large trial program, the allowance is inadequate. It is anticipated that the costs associated with the above development programs will far exceed this allowance.

A further option which should be considered is the process adopted by the Essential Services Commission of South Australia (ESCOSA). In brief the process included:

- ETSA Utilities' expenditure submission to ESCOSA incorporated an allowance for a range of pilot network demand management programs to be undertaken during the 2005-2010 regulatory period.
- ETSA Utilities included proposed expenditure on these programs in its submission in anticipation that the Commission would approve funding for such programs.
- Charles River Associates (Asia Pacific) Pty Ltd (CRA) was retained by the Commission to assess the net benefit-cost of using demand management initiatives, including appropriate pricing signals in combination with interval metering, to defer augmentation of constrained network elements on ETSA Utilities' distribution system.

The Commission's decision on funding of demand management initiatives has been based primarily on the costs and benefits from the network perspective. Nevertheless, the Commission has also taken into consideration possible benefits to other sectors of the electricity supply industry.

The Commission has received ETSA Utilities Demand Management Strategic Plan based on a total funding allocation of \$20m spread over the 2005-2010 regulatory period – which was approved. Expenses incurred in implementing demand management initiatives during the 2005-2010 regulatory period will be treated as operating expenditure rather than capital expenditure, which means that the approved funding is not an amount to be incorporated into the regulated asset base.

The demand management strategies proposed by ETSA and approved by ESCOSA included:

1. Power factor correction
2. Stand-by generation
3. Direct load control
4. Critical peak pricing
5. Voluntary load control and curtailable load control for large customers
6. Interval meters; and
7. Aggregation

ESCOSA has provided a framework that Country Energy believes could be considered as a solid foundation to allow smart meter technology pilots and programs to be conducted on a national basis. Further, Country Energy also agrees with recent proposals from Energy Australia in advocating the development of an "I factor" that would allow distributors to recover the prudent costs of developing and implementing innovative solutions. This recognises that the total expenditure of research and development on innovation is in the longer term interest of consumers and network businesses.

In conclusion, Country Energy supports the distributor-led mandated roll-out of smart meters. Other proposed alternatives all have inadequacies that do not have as strong a business case for the industry.

3.2 The Home Area Network functionality

The phase two analysis has further considered the Home Area Network (HAN) for inclusion in the minimum functionality for smart meters. It has been recommended to include the HAN in the minimum functionality where the capability is provided through a smart thermostat.

2. Do stakeholders have a view on the consultant's recommendation to include the HAN in the national minimum functionality?

It is recognised that the inclusion of the HAN in a smart meter is consistent with the drivers for investigating smart meters, particularly the ability to reduce peak demand and promote energy efficiency and greenhouse gas reductions.

Country Energy is conscious that the technology available in this area is still developing. Country Energy would support further review of this functionality by the technical working group, including exploration of standards to meet Australian requirements for interface to a home area network, followed by industry pilots and technology trials prior to inclusion within a minimum smart metering functionality.

Country Energy would also like to raise our concerns regarding the potential removal of the optical port from electronic meters. While the optical port would not be used for routine meter reading with the implementation of smart meters, the existence of alternate methods to communicate with a meter are required, particularly if the HAN is not operational. Country Energy does not support the removal of the optical port and would recommend extensive consideration by the technical working group prior to any decision to remove an optical port from smart meters. CRA have estimated an avoided cost of \$1.00 to \$1.50 per meter by not including an optical port on the meter, due to inclusion of the HAN.

3.3 Smart meters and direct load control compared with the status quo

In completing the cost benefit analysis, smart meters have been evaluated against the scenarios of direct load control only and a continuation of the status quo. Each scenario has been assessed in accordance with the MCE objectives of:

- Reducing demand for peak power, with consequential infrastructure savings;
- Driving efficiency and innovation in electricity business operations, including improving price signals for efficient investment and contracting;
- Promoting the long-term interest of electricity consumers with regard to the price, quality, security and reliability of electricity;
- Promoting competition in electricity retail markets;
- Enabling consumers to make informed choices and better manage their energy use and greenhouse gas emissions;
- Manage distributional price impacts for vulnerable customers;
- Promoting energy efficiency and greenhouse benefits; and
- Providing a potential platform for other demand side response measures and avoiding discrimination against technologies, including alternative energy technologies¹.

¹ Terms of Reference for cost benefit analysis

3. Can stakeholders suggest any other options that could achieve the MCE objectives more cost efficiently than the scenarios presented?

The MCE objectives cover a broad spectrum of the electricity market, requiring changes across all participants in order for all of the objectives to be delivered. It is Country Energy's view that the introduction of smart meters through a distributor-led roll-out, when considered independent of other options, provides the greatest coverage of the MCE objectives.

Country Energy consider the introduction of smart meters as the enabler for the MCE objectives, but smart meters will not on their own deliver the MCE objectives.

Price reform is an area requiring further consideration, as currently a large proportion of customers in Australia face flat rate tariffs with accumulation meters. Greater application of time of use tariffs will provide further incentives to customers to shift load and or conserve energy.

Limited studies have been conducted on the pure impact of time of use pricing on customers propensity to shift load and conserve energy. It is however recognised that without price signals customers are unlikely to change their consumption behaviour. Further studies would be required to allow greater understanding of any potential benefit from the take up of time of use tariffs.

Price reform to increase availability of cost reflective pricing is unable to be implemented in isolation of meter changes; as such Country Energy would suggest this is an option that should be explored further in line with smart meter deployments.

4. Do stakeholders think the status quo (i.e. a mix of accumulation, interval and smart meters) is sustainable?

Country Energy recognises that the mix of accumulation, interval and smart meters within the market provides additional complexity for all participants, which is not sustainable in the long term.

In the absence of a roll-out of smart meters, Country Energy is of the view that there will be a progressive move away from single rate accumulation meters with growing pressure to provide new products and services promoting operational and energy efficiencies.

Environmental considerations will change the way utilities operate in the future, with the challenge of meeting aggressive greenhouse targets and increasing environmental awareness in the community.

Country Energy believes in the potential of smart meter technology and has already conducted limited trials of smart metering, dynamic pricing and in home displays. In addition to these trials, Country Energy is preparing to invest in validation of the business case. It is important to recognise that the implementation of smart meters are a necessary foundation element of the Intelligent Network (IN), but smart meters alone are not sufficient to achieve the IN vision.

5. Do stakeholders agree with the overall finding of the consultation, reports suggesting that, for a general national case, a smart meter mandate provides higher net benefits than a DLC only scenario?

The direct load control (DLC) only scenario provides demand reduction benefits and greenhouse gas emission reductions, however greater benefits have been estimated under a smart meter roll-out, including the additional advantage for the distribution business to realise business efficiencies.

The roll-out of smart meters strongly aligns with the MCE objectives, providing the greater benefit compared to a DLC only program. Consultants have estimated the energy conservation effect to be greater for smart meters, as there is likely to be lower participation rates in a DLC program not supplied through smart meters.

In order to maximise the benefits under a smart meter roll-out, price reform should also be investigated. Additional demand response benefits will stem from the introduction of cost reflective tariffs, in addition to DLC options introduced.

Country Energy recognises that the estimated cost of the DLC only scenario are significantly less than a roll-out of smart meters, however the associated benefits are also lower. Country Energy is supportive of a smart meter roll-out in comparison to a DLC only scenario.

3.4 Options for a smart meter roll-out

A number of roll-out scenarios have been considered within the cost benefit analysis for smart meters including a distributor-led roll-out, retailer-led roll-out and centralised communications as part of a retailer-led roll-out.

6. What impact do stakeholders think the different proposed roll-out scenarios would have on competition for:

- Metering manufacture
- Metering installation and maintenance services
- Meter data services
- Retail electricity services
- Additional in-home services such as in-home displays and direct load control

Country Energy provides the following observations regarding competition when comparing the distributor-led roll-out and retailer-led roll-out scenarios:

a) Meter manufacture – It is Country Energy’s view that competition would be increased in meter manufacture for a distributor-led roll-out scenario as the metering and communications technologies are not limited by the retail contract densities in a geographic location.

b) Metering installation and maintenance services – It is important to realise that there is no difference in the designation of the ‘*responsible person*’ role between retailers and distribution businesses. The designation of ‘responsible person’ represents the allocation of legal responsibility for service provision, it does not equate to responsibility for the party to provide this service itself. Under both scenarios, the ‘*responsible person*’ must appoint a meter provider and meter data provider. The distribution business may apply to become a meter provider and provide this service itself; however a retailer does not have this option and must appoint an external meter provider.

It is Country Energy's view that while a distribution business may perform meter provision services themselves, there is nothing inhibiting them from selecting to outsource this activity.

Under a retailer-led roll-out scenario, a retailer will contract a meter provider for metering installation and maintenance services, through a commercially competitive contract. It is important to note however that meter providers may not choose to operate in all markets, and there is a risk that meter providers may be able to engage in monopolistic behaviour, particularly for remote meter installations. This may result in much higher prices for some geographic locations as the meter provider, in the lack of competition, does not have any incentive to ensure prices are minimised for the roll-out.

c) Meter data services – Under the proposed scenarios both the retailer and the network have the option of outsourcing the meter data services. It is current practice for some networks to outsource meter data services and we expect that this would continue. Therefore we think that there would be little impact on competition for meter data services.

d) Retail electricity services – It is necessary to recognise the potential impact on retail competition under a retailer-led roll-out scenario, this may provide barriers to entry for retailers into certain jurisdictions and geographic locations. Where the retailer has responsibility for the roll-out of smart meters, they will only compete for customers in areas where they are able to source appropriate commercial contracts with metering providers, in rural and remote areas these contracts may be at a significantly higher rate due to monopoly in that area. A retailer-led roll-out of smart meters may provide a barrier to competition for customers.

Meter churn is an important consideration under a retailer-led roll-out scenario. Meters may need to be churned under a retailer-led roll-out scenario where the retailer is unable to secure a commercial contract with the existing meter provider, as such providing an additional barrier to competition.

Country Energy is of the view that competition in retail electricity services may increase with a national roll-out of smart meters, where this is delivered through a distributor-led scenario. Smart meters will deliver greater consistency in data across jurisdictions, thus eliminating some of the existing complexity for start up retailers and existing retailers seeking to expand services into new markets.

e) Additional in-home services such as in-home displays and direct load control – Where the minimum functionality for smart meters allows for the connection of in-home displays and direct load control, Country Energy does not see any difference in competition for a retailer-led or distributor-led scenario. In-home displays and direct load control would be considered an after market service and may be available through a retailer, distributor or local electrical goods suppliers.

7. Do stakeholders think the central communications option is feasible? If not, what steps would need to be taken to make it so?

Country Energy does not support the central communications retailer-led option as a feasible option for a national roll-out of smart meters in Australia.

Country Energy recognises there are some advantages to a centralised communication model, particularly in systems infrastructure requirements and the reduction in data duplication with centralised data storage. Central communications is likely to reduce barriers to entry for new retailers; however this can also be said for a distributor-led roll-out scenario.

The ability to align communications infrastructure roll-outs with the Intelligent Network strategies for distribution businesses is a critical area of consideration for Country Energy.

8. Could elements of the central communications option, such as complete central data set or greater interoperability, be considered as additions to other options? Do stakeholders see benefit in having one set of official data held by a third party?

As stated above, Country Energy believes there are advantages to a centralised communications model, particularly in relation to centralised data storage. The management of the volume of data with the implementation of smart meters is an area of consideration for all stakeholders.

Country Energy would support a further review of requirements for data storage as part of the technical stakeholder working group, in order to identify opportunities to reduce data duplication between stakeholders.

9. Of the roll-out models listed, which is your preferred option and why?

Country Energy supports the distribution network business led roll-out as the preferred scenario, with exclusivity for not only the period of the roll-out but also the ongoing operation and maintenance of the smart metering infrastructure.

Country Energy does not support the need for the introduction of a franchising model for the roll-out of smart meters within a distribution business to ensure adequate competition and price efficiency. The distribution business have adequate incentives to ensure a roll-out of smart meters is achieved at the lowest costs, while being able to obtain the maximum benefits. A franchising model will add additional complications to any roll-out process and does not guarantee a more effective pricing model.

Cost analysis would indicate there are significant costs differences associated with each of the scenarios, with the distributor-led roll-out providing greatest net benefit nationally.

It is also important to recognise that the implementation of smart meters is part of a broader “intelligent network” and therefore actual roll-out programs have synergy with distribution business investments. Smart meters are a necessary foundation element in the creation of an intelligent network. This should form part of consideration of the scenarios to ensure the distribution business is able to gain full value of the network monitoring technologies available through smart metering to optimise any intelligent network solutions.

To ensure that the distribution business is able to continue to realise the long term benefits of the implementation of smart meters, distribution business exclusivity is required for not only the initial period of the roll-out of smart meters but also for the ongoing future operation and maintenance of smart metering solutions.

10. Are there any other models (including hybrids) that could be considered?

Country Energy supports a distribution network business led roll-out, with exclusivity for not only the period of the roll-out but also the ongoing operation and maintenance of the smart metering infrastructure.

Attributing roll-out responsibility to the distribution business does not inhibit the ability of a distributor to engage multiple meter providers or meter data agents to perform smart meter services. It is also Country Energy’s view that this will not preclude a centralised data storage model where there are business drivers in support of this requirement.

3.5 Geographical coverage

Phase 2 of the cost benefit analysis provides assessments of costs and benefits on a jurisdictional basis and an assessment of variations between urban, rural and remote areas.

Country Energy's distribution area covers 95 per cent of NSW, including a large rural customer base. Country Energy notes that we were unable to provide a break down of costs by customer classifications of urban, rural and remote as part of the business case information requests, as this information is not currently captured.

As a result, consultants have had to apply assumptions and estimate the additional costs that would be reasonable for rural and remote customers to include within the business efficiency benefits of the business case.

This is particularly relevant in determining the extent to which business efficiency benefits outweigh costs for installation of smart meters for rural and remote customers

11. Are there any jurisdictional issues that stakeholders think have not been addressed in the cost-benefit analysis?

Retail price regulation in various jurisdictions may inhibit the realisation of the full benefits of a mandated smart meter roll-out. This is due to price controls in place and the inability to introduce new regulated prices. There is also some difficulty in changing prices for customers, for instance, moving a customer from a flat pricing structure to a time of use pricing structure. These regulated retail pricing constraints have the potential to reduce the effectiveness of a smart meter mandate in achieving the MCE objectives as price signals to customers may not exist in all cases.

Without the ability to provide price signals to customers, customer behaviour will be unlikely to change, and therefore the benefits that can be realised will be reduced.

The Government has previously stated its aim is to eventually phase out energy retail price regulation. Country Energy believes the foundations already established under current retail price regulation arrangements provide a framework to move towards this goal. Phasing out retail price regulation is also important in ensuring the success of a smart meter mandate, from the perspective of removing some of the barriers discussed above.

12. Are there any further implications stakeholders wish to raise if smart meters are rolled out in only some jurisdictions or rolled out in a staged approach?

Country Energy is supportive of a staged roll-out of smart meters where the benefits exceed the costs.

It is Country Energy's view that it is not possible to theoretically confirm where benefits outweigh costs. Statistically valid test data needs to be developed through pilot programs. A best practice approach to AMI programs would include a series of 'real world' pilots and staged deployments that physically test the business case assumptions of cost and benefit.

Country Energy holds the view that the short-term additional benefits of 'fast tracking' AMI will be outweighed by the improvement in outcomes that would come from a more considered and iterative approach.

Country Energy is of the view that smart meters will deliver data consistency across jurisdictions where smart meters are deployed. While Country Energy recognises that not all jurisdictions have a positive case for a roll-

out of smart meters, consideration of those jurisdictions operating within the National Electricity Market (NEM) may be appropriate.

A staged roll-out taking into account jurisdictional circumstances is Country Energy's preferred approach. It is also Country Energy's view that the creation of national framework and regulatory environment that supports the roll-out of smart meters is essential.

13. In light of this analysis do stakeholders see any implications for a smart meter roll-out in rural and remote areas in comparison to urban areas?

Country Energy's distribution area covers 95 per cent of NSW, including a large rural customer base of which a number of remote areas have no mobile communications coverage. Communications technologies currently available to support smart meters are still emerging and as such are not yet proven on large scale rural deployments in Australia. Country Energy remains cautious that the minimum functionality endorsed by the MCE may not be economically or technically viable for all customers on our distribution network, particularly when considering remote customer connections.

Power Line Carrier (PLC) communications solutions have been determined within the business case as the most cost effective for rural/remote customers. It is recognised that there is significant uncertainty regarding the application of PLC as a viable communications technology in Australia, due to bandwidth constraints. PLC performance may be inadequate to meet minimum functionality of smart meters; low bandwidth will also impact on the ability to catch up if no communications are available for a period of time, limit the application of smart grid functionality and the ability to send messaging to the home area network². Country Energy is currently investigating this technology further as part of our preparation for smart metering and intelligent network trials.

Country Energy recognise that if PLC is unable to be proven as a viable technology to meet the minimum functionality, higher cost communications technology may be required or alternatively there may be an option to revisit the minimum functionality for rural and remote customers in line with results of trials.

3.6 Roll-out timing

The cost benefit analysis has been prepared in line with a proposed roll-out timeframe that assumes jurisdictions would commence with smart metering trials and planning for 2 years commencing from 1 January 2009, followed by an accelerated roll-out period where all meters would be replaced by 31 December 2014³.

14. Where do stakeholders think smart meters should be rolled out? What timeline is appropriate for specific jurisdictions and what additional jurisdictional factors should be considered in the timeline?

Country Energy is supportive of the roll-out of smart meters where the benefits exceed the costs. While the national cost benefit analysis provides for a net positive benefit at a national level, there are risks and uncertainties with theoretical identification of benefits and costs associated with a smart meter roll-out.

² Work stream 6: Transitional Implementation Costs section 5.6.1 Overview of Technology details technology constraints of PLC, EMCa has determined PLC as a viable solution where customer density is low.

³ Cost Benefit Analysis of Smart Metering and Direct Load Control Overview Report for Consultation, 29 February 2008, page 29 section 4.2.1

Smart metering technology is still developing in Australia; as such it is difficult to substantiate the ability of existing or future technology solutions to perform in the Australian market without tangible results from Australian industry pilots and technology trials.

The smart metering technology is continuing to develop at an accelerated rate, providing inherent risks in any decision to roll-out smart meters. Country Energy recognise that interoperability at the hardware component level will increase the ability of the utility to benefit from new technology advancements without losing investment in existing infrastructure, also minimising risk of stranded assets. It is Country Energy's view that interoperability in smart meters and communications infrastructure should be available prior to the extensive deployment of smart meters across distribution networks in order to more effectively manage the risks of this large program.

The availability of appropriately qualified resources to support a roll-out position is also an important consideration. Analysis performed as part of the business case preparation has estimated approximately 1,300 to 2,000 installers would be required for a national roll-out of smart meters⁴; for NSW this equates to approximately 350 to 500 installers based on estimated installation times. Country Energy believes the average installation time is understated; as such the number of installers required is likely to be higher.

The industry is currently faced with ongoing challenges in securing qualified technicians. The number of resources required to support a full smart meter roll-out is significant, particularly allowing for large scale rural deployments. It is important to also recognise that this resource base will be required on an ongoing basis, as the useful asset life for smart meters is determined to be 15 years⁵. Timeframes for roll-out need to reflect the capabilities of the available labour workforce to perform smart meter roll-out activities.

Country Energy is supportive of the need to further consider the inclusion of a standard base plate for the roll-out of smart meters. In an existing resource constrained market, solutions are required to remove some resource stress from a smart meter roll-out in the longer term. While the cost to rollout meters with a standard base plate is likely to be higher during the initial rollout, there are likely to be significant savings in time during subsequent installations at time of failure and also at replacement in 15 years time. International experience shows the extensive use of plug in meters with smart meter deployments, Country Energy is interested in exploring this option further in line with industry trials.

Country Energy would recommend that the roll-out timeframe needs to be further reviewed in conjunction with industry pilots and technology trials. Timelines and targets should be set as part of the legal and regulatory framework, taking into account jurisdictional differences. Achievement of any timeframe will be dependant on the available technology to meet the minimum functionality requirements as well as the existence of sufficient and appropriately skilled resources to complete the change out program

3.7 Legislative framework

Regulatory reform is necessary to provide investment certainty. Country Energy fully supports the creation of a technical and regulatory working group to review the legal and regulatory framework and recommend necessary changes to support the roll-out of smart meters.

15. Where do stakeholders think the details of a mandated smart meter roll-out should be set out, including responsibilities, timelines and cost recovery? Which aspects should sit in national or jurisdictional instruments?

⁴ Work stream 6: Transitional Implementation Costs page 54, section 4.11

⁵ The useful life of 15 years for smart meters may prove to be generous, particularly in the early development phases of the technology.

The NER contain a general mechanism for the recovery of a distributor's costs for providing regulated services. Depending on the timing of those costs, distributors would either include cost estimates in their forward-looking revenue proposals to the AER or apply to have them treated by the AER as a pass-through event.

However, without the knowledge of real world pilot trials the treatment necessary to ensure reflective pricing is still unknown. Therefore, it may be appropriate for the MCE to include a NER change proposal to the AEMC with the development of mechanisms that would allow distributors to recover the prudent costs of developing and implementing innovative solutions. This recognises that the total expenditure of research and development on innovation is in the longer term interest of consumers and network businesses

16. What are stakeholders views on the proposed legislative model in Table 15? Are there any other issues that should be considered in the legislative framework?

Country Energy believes that the proposed legislative model will require further consideration after the MCE has made its decision on the details of the smart meter roll-out in June 2008.

3.8 Pilots and trials

Country Energy is supportive of the need to implement further pilots and trials due to the new nature of smart metering technology. We recognise that substantial risks and uncertainties remain with large smart metering programs and there is insufficient real evidence available to determine the optimal approach, functionality and technology. The final recommendation needs to be sufficiently flexible to allow for variations in technical specifications, performance requirements and functionality in line with the results of industry pilots and technology trials.

17. What process should inform the design of smart meter pilots and trials? Who should be responsible for undertaking them?

The technical working group has been charged with the responsibility to develop and recommend technical specifications, performance requirements and amendments to functions, based on a sound benefits case. This activity should not be completed in isolation of results from industry pilots and trials.

It is Country Energy's view that the technical working group would develop a checklist of items that would require further validation through the implementation of technology trials. While Country Energy recognises that stakeholders would where possible align trials with required output of the technical working group, the implementation of trials would remain business driven. All industry trials should be registered centrally to ensure duplication is minimised on a national basis.

Funding grants for trials that support the activities of the technical working group may assist in providing greater national alignment.

It is envisaged that trials would need to be implemented for a period of up to 3 years with end to end business processes operating to provide validation of technology and return as a proof of concept.

18. What are stakeholder views around resourcing of pilots and trials?

Resourcing of trials and pilots will require the ability for cost recovery.

Country Energy has experience in developing and delivering small scale trials, and based on that experience expects the resource and funding requirements of large scale trials to be significant.

Resources will be required not only to change out meters, but also to develop and maintain detailed customer information and customer care procedures, as well as ongoing analysis of the data and results of any pilots or trials.

Country Energy would encourage federal and jurisdictional governments to provide funding grants for the implementation of smart meter trials and pilots in line with delivering the MCE objectives.

3.9 Safety review

Country Energy agrees with the MCE view that a number of smart meter functions will require review of existing jurisdictional safety arrangements, and would encourage further work with stakeholders and appropriate jurisdictional safety authorities to review existing safety arrangements and ensure they remain appropriate for each jurisdiction.

Of particular concern are the safety implications resulting from the remote connection of electricity to consumer's properties, it is important that safety concerns are addressed with any move to remote connections prior to this being enabled within business processes. New standards may need to be enforced to ensure public safety is maintained.

19. What do stakeholders think is the best approach to the safety review?

Country Energy would recommend that a sub group of the technical working group be formed to specifically review the existing safety mechanisms and propose changes to safety standards as may be required to support the implementation of smart meters.

International experience will be a useful source of information to understand how safety standards have changed with the implementation of smart meters, particularly relating to safety procedures for remote connection activities.

This sub group should also review the specific safety requirements relating to the transitional arrangements of meter replacement activities.

3.10 Consumer protection arrangements

The regulatory impact statement refers to the move to time of use pricing for vulnerable customers as a specific issue to be addressed through consumer protection arrangements. Consultants found that vulnerable customer may be better off, where they have a flat load, or may be worse off if they have high non-discretionary use during peak periods.

20. Do stakeholders have particular issues to be considered by the review of consumer protections arrangements?

Country Energy is supportive of a review of consumer protection arrangements prior to any roll-out of smart meters. Country Energy would also support the move to a consistent national approach to consumer protection arrangements.

While Country Energy recognises the introduction of time of use pricing may adversely impact some customers, it is important to note that hardship should be addressed through non-price mechanisms such as stand-alone hardship programs and also state and federal welfare programs.

Country Energy already has in place comprehensive hardship programs; these would continue to be effective in a smart metering environment.

In relation to non payment processes, there are already existing regulatory requirements in jurisdictional rules to protect consumers. It is important to recognise that a number of steps must be completed before the physical disconnection of a site would occur, as such the only change with the introduction of smart meters is that a field officer would not visit the site to perform this disconnection, all other processes would continue as per current processes.

3.11 Public education programs

Country Energy would not object to an extensive public education program on smart meters, ensuring that the benefits of a smart meter roll-out are able to be maximised, particularly energy efficiency benefits.

21. Do stakeholders have views on different approaches to public education on smart meters, or on the funding of such campaigns?

Country Energy would support customer education to maximise customer understanding of the purpose of smart meters and the potential benefits that may accumulate from smart meter deployments.

Country Energy suggests that the Commonwealth Government undertake a national advertising and information campaign in support of the mandated roll-out of smart meters to ensure consistent information is provided to customers, regardless of their geographic location. Precedents exist for campaigns such as this.

Retailers and distributors would also need to provide additional customer communication in the preliminary, deployment and production phases of a roll-out of smart meters to ensure benefits are maximised. The communication programs should be included within the planning for the smart meter program and funded as part of the overall program.

3.12 Interoperability and communications standards

MCE recognises the importance of interoperability and/or open communication standards to support competition and flexibility⁶. Ministers agreed to develop a supporting framework to promote the development of interoperability and ongoing competition in metering as part of the implementation of the mandate.

22. What are stakeholders views on the need for interoperability in smart meter infrastructure and how would it best be achieved?

Country Energy recommends that open protocols should be standard for all smart meters and communications systems to ensure that competition is maintained among meter manufacturers and also to simplify associated systems implementations. Additional systems and interfacing layers are required if proprietary systems continue to be the only method to connect to smart meter installations.

⁶ MCE Decision paper 13 December 2007

Smart metering is still emerging technology and the technology is continuing to develop at an accelerated rate. Interoperability at the hardware component level would allow the ability to benefit from new technology advancements without losing investment in existing infrastructure, this will minimise the stranding of assets. Ability to have multiple meters working on one communication infrastructure is advantageous to increase competitive pressure on manufacturers to improve pricing and minimise reliance on single manufacturers to support regional installations.

Consultants have reviewed standards and interoperability as part of the phase 2 report and agreed that it is important to consider further prior to a national mandated roll-out of smart metering as the potential benefits from further pursuing interoperability may outweigh the likely costs⁷.

Country Energy is of the view that with time interoperability will become standard for smart meters and communication systems used for smart meters, with businesses setting interoperability as a requirement for smart meters as part of tendering processes. In the early stages of a smart meter roll-out, the availability of open standard solutions may be limited and organisations may risk standing assets. Extensive industry and regulatory pressure is required to ensure manufacturers provide open standards.

Country Energy fully supports inclusion of interoperability within the tasks to be reviewed by the technical working group, potentially an interoperability sub group.

3.13 Data management and business interfaces

It is recognised that there is significant effort required to review NEM management processes, data management and business interfaces to support the implementation of smart meters. Work in this area is already underway through the various NEMMCO working groups set up to address these issues for the Victorian AMI roll-out. It is important to build on the activity that has already occurred and extend to support a national framework.

23. What do stakeholders think is the best approach to address data management and business interface issues?

Country Energy supports inclusion of data management and business interface issues within the areas of consideration for the technical stakeholder working group. This working group would review current activity in Victoria and recommend additions that may be required to support a national framework for smart meters.

With the increased volume of data resulting from a smart meter roll-out, it is important to consider the introduction of additional measures to reduce data duplication between stakeholders. File formats are also an area of consideration.

The use of open standards in smart metering infrastructure will assist to simplify data access arrangements and business interface issues by providing greater consistency. Country Energy highly encourages the use of open standards in smart meter deployments.

3.14 Transitional arrangements

It is recognised that there will be transitional arrangements during the period of any roll-out, such as the need to run multiple information systems.

⁷ Cost Benefit Analysis of Smart Metering and Direct Load Control Overview Report for Consultation, 29 February 2008, page 183-184

Country Energy supports the need for a consistent national framework to enable the roll-out of smart meters where the benefits exceed the costs.

Country Energy note that the Regulatory Impact Statement refers to Country Energy deploying interval meters which can be upgraded to smart meters⁸. Country Energy does not support this view. While in some instances these interval meters are able to be upgraded to include remote communications, they will not meet the minimum functionality specification for smart meters.

24. What do stakeholders think is the best approach to accommodating existing interval and smart meters currently in use and the Victorian process?

Country Energy believes it is important to try to align the Victorian and national processes for smart meters.

In relation to existing smart meters installed, it is Country Energy's view that these would be evaluated by the business through their roll-out planning to determine ability to retain or requirement to upgrade the installation. Considerations would include smart meter base functionality, age of the installation, technology and communications infrastructure compared to that of new installations. For older installations it is likely to be more cost effective to replace the smart meter and communications infrastructure in line with smart meter roll-out programs.

Interval meters that do not meet the minimum national functionality for smart meters would be subject to a standard replacement in accordance with the smart meter roll-out program. In Country Energy's experience it is unlikely that these meters are able to be economically upgraded.

25. Do stakeholders know of any other issues that may require transitional arrangements?

Country Energy is not aware of any issues that may require transitional arrangements.

4 Response to general questions

Country Energy provides below responses to general questions asked within the regulatory impact statement (RIS) accompanying phase 2 of the Ministerial Council on Energy's consideration of a smart meter roll-out.

(i) Do stakeholders agree with the problem definition in this RIS?

Country Energy is conscious of the problems identified within the regulatory impact statement, including inefficient electricity pricing, load profiling resulting in an averaging of risk among retailers, and cross-subsidies between consumers.

Country Energy agrees continued use of accumulation meters do not provide the necessary information to support the future requirements of the electricity industry. Country Energy have demonstrated this by investing in the development of Country Energy's first intelligent network community, which will include the deployment of smart meters in conjunction with other intelligent network components including network sensors.

Regulatory reform is a necessary component in enabling distribution businesses to realise benefits from a smart meter deployment.

⁸ Smart Meter Roll-Out Cost Benefit Analysis Regulatory Impact Statement, existing activity in NSW pg 17

Under the National Electricity Rules, a distribution business is able to deploy remote communications to meters; however these meters would continue to be recognised with market systems as basic accumulation meters. Changes will be required to the rules to enable a distribution business to implement interval meters with communications, with the ability to pass these benefits on to other market participants.

The lack of actual interval consumption data within the market results in cross subsidies between retailers and consumers. It is important in ensuring appropriate retail competition, that retailers are charged according to their contracted customer's load, not an average net system load profile which may result in the retailer settling for a higher demand.

Country Energy also recognises the introduction of cost reflective pricing as a necessary step in reducing demand and promoting energy efficiency. Environmental considerations will change the way utilities operate in the future, with the challenge of meeting aggressive greenhouse targets and increasing environmental awareness in the community. These targets are unlikely to be able to be achieved without price reform and the introduction of cost reflective pricing to end use customers, promoting load shifting and energy conservation.

Country Energy recognises the move to a mandated roll-out of smart meters as a necessary step in order to provide long term solutions to resolve the inefficiencies in the national electricity market, while also providing additional business efficiency benefits.

(ii) Do stakeholders wish to comment on the benefits, costs, risks, and/or impacts outlined in this RIS or wish to provide any others?

It is difficult to validate costs provided within the national business case for smart metering and direct load control without comparing against actual data collected through a similar rollout process. Country Energy would recommend the need to proceed with industry pilots and technology trials to validate costs prior to proceeding with a rapid deployment of smart meters.

The consultants in preparing the national business case for smart meters have recognised that there remains uncertainty in the costs and benefits. It is noted there is not currently a meter available in the Australian market that meets the functional specification, although such meters are expected to emerge the costs remain uncertain. Country Energy is also concerned to better understand certain assumptions used to estimate installation and communications costs, implementation of trials will assist to further validate these costs and reduce uncertainties.

A number of assumptions have been made regarding application of appropriate communication technologies for a smart meter roll-out. Communications technology has been assumed in the business case to be Mesh Radio with Global Packet Radio Service (GPRS) fill for urban customers and Power Line Carrier (PLC) for rural and remote customers. While Country Energy recognises that these solutions appear to be cost effective, they have not yet been proven in the Australian market. The application of communications solutions should be firmed up during the period of industry pilots, with the functionality specification being finalised by the technical working group in conjunction with pilot results.

It is difficult to validate the benefits provided within the national business case for smart metering and direct load control without comparing against actual data collected through a similar rollout process. Country Energy has identified particular concerns with the estimation of benefits from avoided meter costs. We are aware that consultants are attempting to recast the base case in order to provide a more accurate representation of existing jurisdictional operations.

(iii) Can stakeholders suggest any measures to maximise the benefits and/or minimise the costs and risks of a smart meter or DLC roll-out?

Country Energy recognises the risks and uncertainties with theoretical identification of benefits and costs associated with a smart meter rollout. A smart meter rollout requires a significant capital investment, it is important to validate the costs and benefits and technology application through industry pilots and technology trials prior to commitment to the rapid deployment of smart meters.

Regulatory reform is necessary to provide investment certainty. Country Energy fully supports the creation of a technical and regulatory working group to review the legal and regulatory framework and recommend necessary changes to support the rollout of smart meters.

Country Energy recommends a staged deployment, commencing with the implementation of industry pilots and technology trials, as a necessary approach to reduce uncertainties and maximise benefits from a smart meter roll-out.

(iv) Do stakeholders have comments on the implementation issues or wish to raise any others?

Smart meter communication technology is still developing; as such it is difficult to substantiate the ability of existing or future technology solutions to perform in the Australian market without tangible results from Australian industry pilots and technology trials.

While Country Energy in principle supports the creation of a minimum national functionality, there is some concern in locking in a functionality that is unproven in its application.

MCE has endorsed the creation of a Technical Working Group, with one task to develop and recommend technical specifications, performance requirements and amendments to functions, based on a sound benefits case⁹. Country Energy fully supports the creation of this working group and acknowledges that it is difficult to finalise the minimum functionality based on theoretical costs and benefits. A review of the minimum functionality would be required following detailed industry pilots and technology trials, particularly in relation to the specification for rural and remote customers.

5 Conclusion

Country Energy are supportive of a mandated roll-out of smart meters where the benefits exceed the costs, providing the necessary assurance of regulatory reform and cost recovery mechanisms required for an effective roll-out of smart meters

Country Energy endorse the creation of the technical and regulatory working groups to develop and recommend technical specifications, performance requirements and necessary regulatory changes to support the roll-out of smart metering in Australia. This process should run in parallel with implementation of industry pilots and technology trials.

Industry trials should be implemented through a staged approach to ensure maximum investment return. It is envisaged that trials would need to be implemented for a period of up to 3 years with end to end business processes operating to provide validation of technology and return as a proof of concept.

⁹ MCE Decision paper 13 December 2007

Country Energy would recommend that the roll-out timeframe needs to be further reviewed in conjunction with industry pilots and technology trials. Timelines and targets should be set as part of the legal and regulatory framework, taking into account jurisdictional differences. Achievement of any timeframe will be dependant on the available technology to meet the minimum functionality requirements as well as the existence of sufficient and appropriately skilled resources to complete the change out program

Regulatory support is required to assist market drivers for further investment in smart metering technology for the Australian market, driving the need for open communication protocols and standards within smart metering deployments to ensure benefits of technology advancements are able to be fully realised.