Manager
MCE Secretariat
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19 November 2007

Dear Manager

Re: Smart Meters Cost Benefit Analysis – Phase 1 – National Minimum Functionality

Please find attached to this letter our response to the consultation draft of the Regulatory Impact Statement for a National Minimum Functionality for Smart Meters and the Phase 1 Cost Benefit Analysis. We understand that this response is offered after the deadline but hope that it will be considered in processes towards a decision about smart meter functionality. The response is set out as answers to the questions posed by the Regulatory Impact Statement.

Yours sincerely
Australian Council of Social Service

Tony Westmore
Senior Policy Officer

cc: NERA Economic Consulting

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Standing Committee of Officials of the Ministerial Council on Energy
Cost-Benefit Analysis of Options for a National Smart Meter Roll-Out
(Phase One – National Minimum Functionality)
Regulatory Impact Statement

Response by Australian Council of Social Service (ACOSS)
November 2007

> "The primary role of the RIS is to improve government decision-making processes by ensuring that all relevant information is presented to a decision maker when a decision is being made. In that context, this RIS aims to provide a consistent, systematic and transparent process for assessing alternative policy approaches to problems being addressed. It includes an assessment of the impacts of the proposed regulation, and alternatives, on different groups and the community as a whole."

Introduction

ACOSS is the peak council of the community welfare sector in Australia and the national voice for the needs of people affected by poverty and inequality. Our interest in energy markets is primarily the result of our interest in matters affecting low income and disadvantaged Australians. Our interests primarily concern residential 'small' end-users. We hold the view that electricity is an essential service and should be supplied equitably, affordably reliably and sustainably.

ACOSS hosts a project funded by the National Consumers Electricity Advocacy Panel that aims to engage with and influence development and reform of the National Electricity Market. The ACOSS policy officer is one of four consumer representatives on the Smart Meter Stakeholder Working Group and has participated in the processes of that Group from its inception earlier this year. The views expressed in this response to the Regulatory Impact Statement are offered in the spirit of consultation and cooperation.

We have significant concerns about the proposed roll out of smart meters. These concerns have given a hearing in the course of work by the Smart Meter Stakeholder Working Group. However, the SMSWG was tasked with assisting in the implementation of a decision already made: that is to implement a roll-out. We suggest that there may be less risky, less expensive, more immediate, more consistently applicable means to increase efficiency, manage demand and reduce consumption.

Simply put, our concerns about a mandated, national (market-wide) roll out to residential customers include:

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- none of the available technologies are proved satisfactorily robust;
- the functional specification may derive from (assumed or potential) technological capacity rather than intended application;
- unnecessary and unjustifiable haste may result in misplaced investment;
- alternative approaches to demand management have not been adequately considered; and
- there is currently no evidence to suggest that consumers will (or can) shift their use in response to price signals.

The cost of the proposed investment in smart meters is significant (in the range $2 billion to $4 billion at the lower end of estimates and exclusive of an estimated $1 billion worth of sunk asset value in existing meters) and this cost must surely be passed through to consumers (as customers and/or taxpayers).

The Information Paper issued earlier this year by the Standing Committee of Officials (SCO) of the MCE claims, at 3.7 Social Welfare Issues, that

> It is not expected that any new social welfare issues will arise due to the smart meter roll-out. However, where required, social welfare issues will be considered in accordance with the existing retail policy aspects of the Australian Energy Market Agreement [AEMA]. [1]

We note that the reasoning in support of smart meters is (apparently) predicated on significant changes to retail price regimes which are currently the preserve of individual jurisdictions. Further, non-economic aspects of retail policy regulation are currently the subject of consideration and review towards the introduction of a new national framework for regulation. At the intersection of smart meters and retail policy there are significant issues for all household consumers of electricity, and particularly for low income consumers. These issues seem to be outside the scope of either of the smart meter or retail policy projects. There are significant social welfare issues and they may not be adequately addressed by the AEMA.

The RIS refers to work in train towards the 'distribution economic' and 'retail and non-economic distribution' packages of legislation and Rules and notes that that both are well advanced. Our sense is that both packages are long delayed and that the retail and non-economic distribution package is unlikely to come into force until January 2010 at the earliest. This second tranche of reform measures deals with a large number of complex and interrelated matters. Many questions of policy remain unresolved.

At its February 2006 meeting, COAG decided that as well as committing to a roll-out of smart meters, work should be undertaken towards

> (c) implementing a comprehensive and enhanced MCE work program, from 2006, to establish effective demand-side response mechanisms in the electricity market, including network owner incentives, effectively valuing demand-side responses, regulation and pricing of distributed and embedded generation, and end user education. [2]

ACOSS suggests that the range of demand-side response mechanisms has not been explored, especially in terms of relative benefit. Increased responsiveness and efficiency in the residential sector may be achieved more quickly through means other than smart meters (eg through communication, direct load control, improved insulation, energy efficient appliances).

With regard to greenhouse gas emissions, the Productivity Commission, in its submission to the Prime Ministerial Task Group on Emissions Trading (Key Points, April 2007) noted that:

[1] Smart Meters Information Paper on the development of an implementation plan for the roll-out of smart meters, Ministerial Council on Energy, January 2007 p.4
[2] COAG Meeting 10 February 2006, Communiqué

> Other policies may be warranted to address related market failures. These include support for relevant technological development and deployment, addressing barriers to energy efficiency and carbon capture and storage, and research into adaptation strategies. To optimise use of the community's abatement dollar, all policy proposals should be subject to comparative assessment - such as cost per tonne of GHG emissions reduction or storage. [3]

Before proceeding to finalise a functional specification for smart meters we suggest that more research be undertaken to consider the range of options available to address the range of objectives [4] identified in the RIS, the costs and benefits of each, the real potential for one or more options to achieve the goal of demand management.

Short time frame

The RIS acknowledges the short timeframe allowed for Phase 1. We note that although dated September 2007, the RIS was released for comment on 4 October with a deadline for submissions of 1 November. The accompanying cost-benefit analysis, in six volumes, totalled nearly 900 pages of detailed research and commentary. ACOSS congratulates the consultants for the extent and quality of this work. We do, however, wish to record our disappointment that so little time has been allowed for the preparation of a considered response. We understand that Phase 2 may address some of the issues that we raise. But we are concerned that the intended result of Phase 1, a national minimum functionality for a nationally mandated roll-out of smart meters, may pre-empt, constrain or disregard Phase 2.

The Regulatory Impact Statement

ACOSS is concerned that the RIS poses the question "what is a smart meter and what could it do?" rather than "what market needs are best met at the customer interface and how are they best met?" The problems, in this case, relate to specifically to metering (ie the measurement of consumption), but also to other 'problems'.

If the fundamental 'problem' is residential demand for peak power, we are concerned that smart meter systems, as envisaged by COAG and the Smart Meter Working Group, may not be the best solution or not in the short-term. We are concerned that the design of research towards an assessment of smart meters systems has assumes that a national roll-out will proceed.

The Phase 1 cost-benefit analysis is built on a set of assumptions about a roll-out and its viability that inevitably support a roll-out. The Phase 1 cost-benefit analysis sets aside critical questions including, for example, the cost (and benefits) of the 'base case' the core functionality before proceeding to consider 'additional' functionality.

If the purpose this RIS is to consider all relevant information before deciding on a national minimum functionality for smart meters, we are the view that Phase 1 should be set aside and considered simultaneously with Phase 2 which is well advanced and canvasses a more complete range of information.

While we are cognisant of the reasons for urgency, notably work in Victoria towards a functional specification and roll-out in that jurisdiction, the cost of a national smart meter roll-out will eventually be borne by all consumers. And if smart meters fail to comprehensively address the problem they are intended to solve, consumers will bear the additional cost of other solutions and/or the cost of the problem remaining unsolved.

We are concerned that a minimum functionality will be decided on the basis of Phase 1 of the cost-benefit analysis before consideration is given to all of the available information and before

[3] Productivity Commission Submission to the Prime Ministerial Task Group on Emissions Trading, Key points April 2007
[4] Regulatory Impact Statement, September 2007 p.16

alternatives to smart meter functionality are tested. For example, Phase 2 of the cost-benefit analysis will consider four scenarios for a roll-out but one of the scenarios is not a roll-out of smart meters but an alternative to smart meters, or rather an alternative means of providing some of the functionality of smart meters.

Functionality vs application and effect

There is a critical difference between 'functionality' and 'application' and gross assumptions have been made about both. In some cases the functionality is the same as the 'application' eg *local reading – visual display on meter*. In some cases the functionality enables one or more applications eg *half hourly consumption measurement and recording* allows for the possibility of time of use charging. In some cases it is assumed that the functionality will be linked to an application, in others it is suggested that the functionality be included so that an application might be developed at a later stage.

In some instances, the application linked to a functionality is well beyond the scope of current market practice. For example in considering the cost-benefit of supply/capacity control (No. 13) it is suggested that the "customer benefits from being offered tariffs that assist with managing energy expenditure". [5]

> Retailers could potentially also choose to offer supply capacity products to assist low income customers manage their expenditure, or could adopt supply capacity limits as an alternative to disconnection for defaulting customers. [6]

Our view might be that supply control offers the means for suppliers to manage (minimise) energy consumption by some customers and that in some circumstances this would be inappropriate. Hardship and energy poverty are real issues and well documented in Australia. Energy is an essential service. An inability to pay for reasonable levels of energy consumption should not be punished by restricted consumption.

We are concerned that Phase 1 of the cost-benefit analysis makes assumptions about the benefits of functionalities regarded as 'core' and the relationship between core and additional functionalities (interdependence) without there being any indication about the range of costs associated with core functionality (the meter and associated systems).

With regard to the COAG meetings of February 2006 and April 2007, our understanding of the project is that it is directed to "improve price signals for energy consumers and investors" [7]

> These reforms will improve energy supply reliability, enable customers to manage better their energy use and greenhouse gas emissions and help maintain Australia's relatively low energy prices. [8]

> ... allowing for the recording of half hourly consumption data and two way communication provides the potential basis for the introduction of time of use (TOU) tariffs and critical peak pricing (CPP) by retailers. By being better able to measure accurately the time at which each customer consumes energy, and to notify customers in advance of expected peaks in the wholesale energy price, retailers may offer prices to customers that better reflect the price at which they purchase energy in the wholesale market. Similarly, distributors have the ability to better match their network prices to the cost associated with operating their networks at times of peak demand. [9]

[5] Phase 1 Overview Report p.23
[6] ibid p.16
[7] COAG Meeting 10 February 2006, Communiqué
[8] COAG Meeting 13 April 2007, Communiqué
[9] Regulatory Impact Statement, September 2007 p.12

The functionalities proposed as 'core' together with those recommended additionally for inclusion in the minimum national functionality do, in fact, allow for two-way communication between the meter and the communications network management system (CNMS). The proposed minimum national functionality assumes that consumption data and technical information will flow **from** the meter to the CNMS and that control of the meter will be effected **from** the CNMS.

However, the minimum functionality does **not** provide for communication with the **customer** through the meter. As is the case currently, historical consumption detail will be provided on bills in the usual manner and, presumably, up to three months after consumption occurs. The cost-benefit analysis proposes the development of websites at which customers will be able to review consumption data. The core functionality provides for weekly remote reading of consumption data in half hourly intervals. It is not clear how time of use consumption or charging will be presented to customers on bills. If there is a consumer response to time of use pricing it will be on the basis of either or both of information provided other than by the smart meter (eg the schedule of prices in a contract, updates on a website) and historical information about consumption.

The proposed minimum functionality seems to assume that notice of critical peak events will be communicated via phone, email, sms or similar.

The functionality for daily remote reading (No 9) suggests that information about consumption (daily but retrospectively) might be made available to consumers by retailers via a website. We suggest that the provision of information is not the same thing as communication, especially when the goal is for a response to the information. Various components of the Phase 1 research indicate that levels of consumer response to time of use and critical peak pricing are at best uncertain and, at worst, minimal.

> Where customers face time of use tariffs and CPP options, their level of electricity demand **may** change. In particular, customers **may** switch electricity usage away from peak times (thereby enabling the deferral of network augmentation and new generation capacity). They **may** also reduce the overall amount of electricity they use. Both of these changes in demand **will** change the electricity market dispatch pattern, resulting in changes in the operating costs of generation and changes in the level of greenhouse gas emissions. [10]
>
> The retailer impacts report analyses the extent to which retailers may be likely to introduce more cost reflective tariffs. The report presents the general view of retailers as being that they do not believe that customers will value or demand (in material numbers) the more cost reflective tariffs that smart meters will allow, and concludes that this is likely to mean that retailers will not be inclined to introduce more cost reflective tariffs across their customer base. Some retailers suggested that perhaps around 10 per cent of customers would end up on more cost reflective pricing. However, the retailer workstream also notes the view of one retailer that up to 50 to 66 per cent of customers currently on accumulation meters would end up on some form of TOU pricing and that a small proportion of those (probably less than 10 per cent) would end up on some form of CPP. Also, the retailer workstream found that if the incumbent retailer responds to the introduction of smart meters by introducing more cost reflective tariffs then other retailers are likely to follow. [11]

ACOSS is encouraging of efforts to increase the efficiency of energy production, delivery and consumption. However, many low income households already under-consume energy in a bid to minimise expenditure, are unable to shift consumption from one time of day to another (ie away from peak) or afford appliances and equipment that take advantage of time of use tariffs. While we understand that network augmentation to meet peak requirements imposes significant costs on consumers and could be curtailed by reducing peak load, we understand also that

[10] Phase 1 Overview Report p.12
[11] ibid p.49

encouraging consumption during off-peak times effectively encourages consumption of base load power which is heavily reliant on coal-fired generation.

Conflicting goals

ACOSS is concerned by what might be regarded as apparently conflicting policy goals. COAG anticipates that smart meters will have the effect of reducing the consumption of electricity with a view to cost savings for consumers, deferral of network augmentation and a reduction in greenhouse gas pollution. On the other hand, lower consumption, in economic terms, is regarded as a cost. In considering the costs and benefits of daily remote reading, the Overview Report notes that

> the lower revenue earned by retailers, distributors and generators as a result of an enhanced demand response has also been included in the costs of an option. There is ... a net societal loss associated with the lower consumption (although in the lower range estimates this is zero, as there may be no change in demand response under this functionality). [12]

As we have noted in earlier submissions to the MCE, we believe that the NEM Objective is too narrowly focused on purely economic efficiency; it ignores the social dimensions of an essential service and the environmental dimensions of an industry that contributes so significantly to pollution. The methodology underpinning this cost-benefit analysis highlights the narrow, abstracted approaches to thinking about a problem that is complex and demands a more thorough consideration of 'efficiency'.

Core functionality

The designation of eight 'core' functionalities by the consultants seems to be a reasonable approach to the task of defining a smart meter. However, given the significant qualms we have heard expressed by industry, particularly distributors, about the cost, capacity and reliability of available meter system technology, it seems that there is not currently available an off-the-shelf meter or metering system that is appropriate to the needs of the NEM. Of itself this would seem to suggest a significant risk in terms of both costs and benefits.

> The incremental assessment of the costs and benefits of functionalities over and above these core capabilities takes the above benefits as given, and considers what *additional* costs and benefits may be achieved as the result of adding further functionality into the minimum national functionality of a smart meter. [13]

There are several instances where it is suggested that a functionality should be included because it has 'negligible to zero' costs at the meter even if there is doubt that benefits will flow from the functionality. In most of these instances the functionality is assumed to have actual benefit only if, at some stage, industry decides to invest in enabling an application for the functionality.

Our principle concern with this approach to assessing the cost of additional functionality is that the 'base case' or core functionality has not yet been established as an appropriate foundation on which to build additional functionality, particularly as the significant matter of standards has also been set aside. With regard to additional functionality, the Overview Report notes that

> [the] only caveat ... would be the indication from some vendors that adding functionalities into the smart meter specification may have a zero cost if the number of additional functionalities was small. By including more functionalities within the smart meter, the costs at the meter might actually rise. [14]

[12] ibid p.74
[13] ibid p.13
[14] ibid p.112

We suggest that, as with most technology, there will likely be costs associated with interrelationships between functionalities, increased complexity, and matters such as standards. There is some risk in assessing the cost of functions (individually, interdependently and cumulatively) additional to a core set that has not been properly costed.

Assumptions informing the Phase 1 analysis of costs and benefits

1. 1 a time period of 15 years, acknowledging the need for an information technology overhaul at the seven year stage

This seems reasonable except to the extent that it would seem not to be supported by any empirical evidence from past or current installations and may be optimistic in some of Australia's climactic circumstances. When speaking at the recent Phase 2 Jurisdictional Consultation for Queensland, distributors mentioned the extremes of weather in which meters and related communications systems would be required to operate. These extremes may affect regular operations and longevity.

2 a start date of 2014 "by starting our analysis in 2014 we are assuming that every house has a smart meter and the benefits are therefore those that are achieved under a full roll out. What does drive the results is the assumption that every house has a smart meter".

ACOSS has two concerns about this assumption. The first is that, when asked directly at the recent Phase 2 Jurisdictional Consultation for New South Wales, distributors said that an optimistic but realistic start date for a roll-out in that jurisdiction was late 2010. If the 2014 start date for analysis assumes that the roll-out has commenced in 2008 it may be overly optimistic. The second concern is the assumption that "every household will have a smart meter and the benefits are therefore those that are achieved under a full rollout". [15] Without wishing to pre-empt the outcome of the cost-benefit analysis, we suggest that it is highly likely some areas of the NEM will be excluded from the roll-out, at least initially. Costs and benefits have been assessed on a per-meter basis. If significant numbers of customers are excluded from the roll-out, costs per meter will likely increase. Several factors contribute to this possibility including the potential for economies of scale at purchase and installation to not be achieved.

However, the most significant cost increase on a per-meter basis will result from the relatively fixed costs associated with so-called back end systems including communications and information technology being amortised across a smaller base. The systems required at scale to collect, process, store and make use of interval data, along with related business and billing systems will be needed to realise the promise of smart meters, almost regardless of customer numbers.

> Cost information tends to be more consistent than benefit information. Communications infrastructure and IT are relatively significant components of the total deployment cost and EMCa expects significant portions of these costs to be relatively invariant with customer numbers. End point hardware and installation costs [ie the meter and its installation] comprise around half of total deployment costs – added functionality appears to be second order. [16]
>
> The implementation costs workstream has calculated per meter cost of information technology and non-meter infrastructure. However, these costs are predominantly invariant to the number of customers". [17]

[15] ibid p.46
[16] Smart Meters Information Paper on the development of an implementation plan for the roll-out of smart meters, Ministerial Council on Energy, January 2007 p.9
[17] Phase 1 Overview Report p.160

3 a discount rate of 8%

ACOSS is not currently in a position to comment on the proposed approach nor the effect of higher or lower rates ie how higher or lower rates would shift the balance of costs and benefits. The Report does note however that a discount rate of 6.5% "approximates the real pre tax weighted average cost of capital commonly used by energy regulators in Australia".

Except for the proposed Phase 2 task of analysing costs and benefits under various scenarios, including those that would likely **not** involve the regulatory review of assets in the context of price determinations, and given the potential for a non-private enterprise investment, we suggest that the rate commonly used by energy regulators might be the best rate on which to base this work.

4 assumed customer numbers: 9.64 million [18] assumes a single customer for each connection point but also a single meter for each customer and also, it seems that this number is the total number of customers consuming below 160MW and so will include some non-residential (ie business) customers.

On one hand we are advised that there are, in many instances, more than one meter per customer so that in New South Wales for example there are approximately 3.0 million households (customers) but approximately 5.2 million meters to provide for off peak and three phase services. This may lead to an underestimation of costs per customer, if not per meter. On the other hand, and further to our remarks above regarding economies of scale and the amortisation of fixed costs, this number would seem to reinforce the assumption of a roll-out to all customers. This may lead to an underestimation of costs per meter, at least for the initial mandated roll-out.

5 retail tariff structures

As well as assuming that **all** customers have smart meters, the cost-benefit analysis also assumes that **all** customers are subscribed to a TOU tariff that includes CPP. The consultants acknowledge that the effect of these assumptions is to assess the **maximum** benefit that might result from a roll-out of smart meters. With a view to cost-benefit and the objectives of a roll-out, we would be interested in other, perhaps less optimistic, scenarios for installation, tariff take-up and impacts.

> [T]he assumption.... is that all retailers offer a TOU tariff which incorporates a CPP element. This assumption is consistent with calculating the *maximum* benefit that may be expected to flow from the adoption of smart meters. In the event that retailers choose not to offer this tariff structure in practice, then the extent of the benefits that are actually realised may be lower" [19]
>
> and secondly … "[in] relation to uptake, we have assumed that all customers are on the tariffs set out above ie there is 100% take up of those tariffs. This assumption is not intended to be realistic but has been made in order to simplify the analysis for Phase 1, in the light of informational deficiencies". [20]

These assumptions build on another assumption which is that electricity tariffs, currently regulated by individual jurisdictions, will in future be [more] cost reflective, be formulated on TOU and provide for some form of CPP, ie that jurisdictions will permit and facilitate these offerings by retailers.

Given the commitment by COAG to, effectively, allow the introduction of time of day [use] pricing and the five year lead time to the assumed start date, these assumptions may not be especially bold; there is, effectively, a commitment from state and territory First Ministers to

[18] ibid p.47
[19] ibid p.49
[20] ibid p.51

introduce TOU pricing. However, jurisdictions have particular sensitivities in this area and the nature of any changes will likely be circumscribed by a range of considerations. The Australian Energy Market Commission (AEMC) has embarked on a series of reviews of the effectiveness of competition in NEM jurisdictions. Even allowing for the results of these reviews and the potential for price deregulation in some areas of some jurisdictions, we suggest that individual jurisdictions are likely to continue to exercise control over pricing.

It might be the case, for example that prices continue to be regulated by jurisdictions but that there are regulated TOU prices (as currently in NSW). It might also be the case that even where smart meters are installed, there are complementary regulated, standing offer prices that are not based on TOU.

Our concerns with the assumption of a 100% uptake of TOU tariffs, beyond our doubt that 100% of customers will have a smart meter are that, given a choice between flat and TOU tariffs, many customers will likely chose the former at least initially. This concern is shared by retailers.

> The report presents the general view of retailers as being that they do not believe that customers will value or demand (in material numbers) the more cost reflective tariffs that smart meters will allow, and concludes that this is likely to mean that retailers will not be inclined to introduce more cost reflective tariffs across their customer base. Some retailers suggested that perhaps around 10 per cent of customers would end up on more cost reflective pricing. However, the retailer workstream also notes the view of one retailer that up to 50 to 66 per cent of customers currently on accumulation meters would end up on some form of TOU pricing and that a small proportion of those (probably less than 10 per cent) would end up on some form of CPP. Also, the retailer workstream found that if the incumbent retailer responds to the introduction of smart meters by introducing more cost reflective tariffs then other retailers are likely to follow. [21]

6 modified load duration curve

Our concerns with this assumption are i) that once again the effects of additional functionality are assessed with regard to the assumed 'core functionality' before that functionality has been assessed in terms of costs and benefits (ie effects, particularly on customer demand); and ii) that the nexus between information (about price), communication (to the customer), response (by the customer) and actual demand (especially but not only during peak) is not adequately tested or understood.

The key problems for consideration by this RIS and consultation are:

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

ACOSS suggests that there are two arguments against the proposal to include a definition of functionality in the Rules:

1) The functionalities, as conceptualised and described in processes to date, relate very specifically to a piece of equipment, the meter, and the information and communications technology systems required to enable these functions. Emerging and converging technologies may make this conceptualisation redundant.

The cost-benefit analysis may determine that the roll-out should, at least initially, exclude some groups of customers for one reason or another. These reasons may involve the economics of a roll-out, technology (and its limitations), geography or the market circumstances pertaining in a jurisdiction. The groups excluded may be narrowly defined or, possibly, entire NEM

[21] ibid p.49

jurisdictions. The definition of a 'smart meter' if codified as a list of functionalities may itself be a factor in excluding some groups of customers.

If the core set of functionalities includes, for example, 'load management at meters through a dedicated controlled circuit' and this functionality is not reasonably included in meter systems selected for a particular area, the meters will either be in breach of or beyond the purview of the Rules. The Rule change process is onerous, even where there is broad support for a proposed Rule change. We suggest that functionality be dealt with elsewhere, acknowledging the potential for variation between jurisdictions and otherwise.

2) Particularly at this stage of the development of the NEM, there may be inconsistencies between the functionality of metering systems and the purposes to which this functionality can be applied. We are concerned especially that the RIS, at Relationships with Other Work Streams, states that

> [f]or retail, regulation of retail price caps remains with the jurisdictions; however, new nationally consistent Rules will be created to govern other areas of retail such as standing contracts, billing, etc. Both packages are well advanced... [22]

It is of critical importance to understand that current forms of regulation, as we understand them, do **not** regulate price **caps**. Individual NEM jurisdictions set regulated prices for standing offer contracts. Retailers can and do offer prices under market contracts that are **higher** than these standing offer prices. Our view is that the effect of standing offer prices is to facilitate the effectiveness of competition by establishing a 'price to beat', while affording a level of protection for consumers.

In the same way that complete deregulation of pricing is not a necessary precondition for competition; complete deregulation of pricing is not a necessary precursor to the introduction of time of use pricing. We note that in New South Wales **regulated** time of use tariffs are already in place for some customers in some circumstances.

The work of the Retail Policy Working Group (RPWG) is advancing. However, it seems that plans to have the new national regulatory framework in place effective July 2008 were overly optimistic and that January 2010 is more realistic at this stage. The relationship between retail policy and a smart meter policy is important. The ambit of the RPWG is wide ranging and extends to policy, legislation and regulation in areas including:

- contracts and marketing;
- obligation to supply;
- the relationship between end-user customer the retailer and the distributor;
- retailer failure;
- registration and transfer arrangements; and
- metering.

In assessing the relative merits of two performance levels for remote connect/disconnect, the "avoided cost of prepayment meters" is cited as offering a positive benefit for the higher performance level sufficient to recommend it as the preferred option. Prepayment meters are currently banned in the state of Victoria, their use is strictly controlled in other jurisdictions and more generally the subject of consideration through the Retail Policy Working Group. Prepayment may be a possible application of smart meters but should not be assumed as a benefit.

> Provisions specify [prepayment metering systems] requirements with which a retailer must comply including system display capabilities, disconnection times, emergency credit, access to metering data, payment difficulties, system testing, overcharging and undercharging. [23]

[22] Regulatory Impact Statement, September 2007 p.12

> Further consideration should be given to the regulation of prepayment meter systems, which may more appropriately be addressed as part of the regulation of retail contracts, or be a matter which is retained by the jurisdictions [24]

The development of a prepayment facility may be an instance of technological capacity generating an application that is at odds with policy.

b. If so, which of the proposed advanced smart meter functions should be included in the minimum national standard?

We reiterate our previously expressed concern that Phase 1 should be linked with Phase 2 before a minimum functionality is determined.

> ... the costs and benefits of those functionalities that have an impact on demand either through direct load control or an enhanced customer responsiveness to time of use tariffs, critical peak pricing or general customer conservation, are particularly uncertain (functions 15 and 16). The uncertainty arises in the magnitude of the demand response, the quantification of other benefits, particularly in relation to other private uses of a home area network, and the infrastructure particular (and associated costs) needed for their implementation. Given the importance of a decision about the inclusion of capability to a home area network as part of the smart meter rollout ... functions warranted further consideration before a definitive recommendation could be made. ... these issues will require further consideration and analysis as part of Phase 2, as they interact heavily with the benefits anticipated in relation to the core functionality... [25]

Q1. What are stakeholder views on the above statements relating to the costs and competition effects of having different smart meter functionalities between jurisdictions?

The statements regarding the possible benefits and risks are reasonable. The risks of increased costs of development, implementation and operation resulting from a 'rail gauge' situation are real and will inevitably be passed through to consumers through increased prices or missed opportunities for savings.

Q2. Do stakeholders have a view on the likely impacts on consumers under Option A?

ACOSS is less concerned with the potential for fewer product offerings than with the costly inefficiencies that may result from incompatible systems.

Q3. What are stakeholder views on the set of impacts identified under option A? Please provide quantification of these impacts where possible.

The statements regarding the nature of the market/s for meters and the benefits of economies of scale are reasonable. It should be noted though that a prescribed minimal functionality, performance levels and, importantly, standards for meters will likely have significant effects on manufacturers and their interest in the Australian market. We support appropriate moves towards consistency in regulation and oversight, where appropriate, and acknowledge the efficiencies that are likely to result.

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[23] Retail Policy Working Group, National Framework for Distribution and Retail Regulation, Working Paper 4 p.98
[24] ibid p.6
[25] Phase 1 Overview Report p.ix

Q4. What are stakeholder views on the above set of benefits and risks?

Distributors are currently installing advanced metering infrastructure on a new and replacement basis where they deem it worthwhile and are also trialling a variety of technologies. Our understanding, from listening to distributor presentations in meetings of the SMSWG and at recent jurisdictional consultations for Phase 2 of the project, is that the costs and benefits are far from clear as yet and that, apart from challenges presented by meter and communications technologies, the back-end systems to required to make us of functionality are best described as 'beta'. We understand that there may not yet be a meter available that meets the needs of the Australian market. Option C acknowledges market failure and proposes an intervention. Option B allows for the possibility that industry will test and select meter functionality that is cost effective, robust, appropriate for its needs and compatible with other systems.

> A wider range of technologies may be tested by businesses helping to better understand what functionality best fits the Australian market,

Q5. Do stakeholders have a view on the likely impact on consumers under Option B?

The suggestion that retailers would choose functionalities "that are profitable, help retain customers or win new customers or that best fit their customers' needs" has a reverse which is that retailers may choose to not offer meters to all customers (or all functionalities to all customers) thereby excluding some classes of customers from the anticipated benefits of smart meters. With regard to the suggestion that "customers may see a greater divergence between retailer product offerings and benefit from this wider choice", we will suggest that the experience of customers in jurisdictions allowing retail competition is not necessarily that choice leads to benefit in terms of lower price or improved service.

Q6. What are stakeholder views on the set of impacts identified under option B? Please provide quantification of these impacts where possible.

The suggestion that networks may choose functionalities only of benefit to their interests is reasonable except to the extent that advanced functionality that provides only benefits to other parts of the supply chain could possibly be on-sold to those other parts of the supply chain, and so become of benefit to networks. It might be asserted that functionality of benefit to any part of the supply chain was intrinsically of benefit to consumers.

Q7 Stakeholders are asked to provide views or data on the inclusion of these functions in the national minimum functionality.

We have three overriding concerns about the approach taken to assessing the costs and benefits of functionalities additional to the eight 'core' functionalities.

The core functionality (the base case), has not yet been assessed for cost and benefit. The notion of any functionality, its costs or benefits, being considered 'additional' to something quite so nebulous is methodologically flawed. Given the range of policy, regulatory, technological, behavioural and informational questions at issue, we believe that options for smart meter functionalities should be considered simultaneously, in a way that facilitates comparison and has regard to the potential for costs to increase with incremental functionality.

Additional functionalities (individually, incrementally, in certain combinations) may have implications for the cost of meters and related systems and so, in circumstances, where cost is assessed to exceed benefits, or cost is 'negligible' and benefits are uncertain, these functionalities should be referred for further analysis before a decision is made.

There should be further research and, if necessary, trialling of technologies to adequately test costs and benefits where information about costs and benefits is incomplete or unreliable.

Q8 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.

We are of the view that functionalities that enable direct load management and customer interaction should be subject to further consideration. Given the rationale for a national roll-out of smart meters expressed by COAG, these functionalities would seem to be central to the project. If, in making an assessment of costs and benefits, "uncertainty arises in the magnitude of the demand response ... and the particular infrastructure (and associated costs) needed for their implementation", we suggest that further research is essential.

There should be further research and, if necessary, trialling of technologies to adequately test costs and benefits where information about costs and benefits is incomplete or unreliable.

Q9 Stakeholders are asked to provide views or data on these uncertain functions that have been excluded from the national minimum functionality.

Further to our response above, we are of the view that functionalities that enable customer interaction should be subject to further consideration. Although inadequately tested, we are of the view that provision of an in-home display is a functionality with significant potential to affect consumer behaviour, generate demand response and bring benefit from smart meters.

> In home displays may be expected to impact on customer demand and on retailer business strategies (including any decision by retailers to provide other services via the IHD). ... The impact will be greater to the extent that a IHD may be a preferred means on communication for the customer ... and may therefore result in an incremental change in customer usage patterns over and above those that result from the offer of the CPP tariff itself. [26]
>
> There may also be benefits to retailers from IHDs in relation to reduced billing costs, improved promptness of bill payments and reduced customer communications costs. [27]

Q10. 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?

ACOSS is concerned by the fact that so little is known about consumer behaviour in response to information about consumption, time of use pricing and critical peak pricing. The environment in which smart meter policy is developing is extremely dynamic. The (recent or imminent) introduction of retail competition in some jurisdictions, other market reforms, the introduction of an emissions trading system, drought, fuel price increases and other factors affecting the wholesale price of electricity all go to create significant uncertainties.

The other issue is that meters and related systems, of themselves, will do nothing to affect demand response or product offerings.

> In discussing the functionality of smart meters it is important to recognise that in most cases the functionality is actually delivered by a combination of the meters themselves and the associated communications and customer data collection infrastructure. [28]
>
> ... allowing for the recording of half hourly consumption data and two-way communication provides the **potential basis** [emphasis added] for the introduction of time of use (TOU) tariffs and critical peak pricing (CPP) by retailers. [29]

[26] ibid p.18
[27] ibid p.18
[28] ibid p.10
[29] ibid p.12

Smart meters may enhance the potential for demand response. However, in order for this potential to be realised other significant policy, legislative and regulatory matters must be determined. Assuming that these issues (jurisdiction-specific and national) are resolved satisfactorily, this potential will be improved.

We are of the view that the level and consistency of demand response will be linked to the quality and timeliness of information provided to customers as much as to product offerings and tariff structures. The functionalities grouped under "facilitation of customer interaction" are thus of critical importance in assessing costs and benefits.

Q11. To what degree would a national minimum functionality change the attractiveness of that functionality for retailers?

We are not well placed to comment on retailer interests but given the increasing reality of inter-jurisdictional retail operations, it would seem self evident that a national minimum functionality for smart meters, as with any form of regulation, would at least have the advantage of inter-jurisdictional consistency and offer efficiencies as a result. Although generally supportive of nationally consistent regulation a caveat is that the regulation is appropriate and adequately protects the interests of consumers.

Q12. Do stakeholders have a view on the likely impacts on consumers under Option C?

While generally supportive of the development of a national minimum functionality we reiterate our concerns such that Phase 1 should be undertaken simultaneously with Phase 2. The worst case impact on consumers would be that in, effect, the costs of a roll-out outweighed the benefits. The work undertaken by consultants in Phase 1 and that informs the RIS reveals considerable gaps in the information available to make assessments of costs and benefits, particularly in the Australian context.

Q13. What are stakeholder views on the set of impacts identified under option C? Please provide quantification of these impacts where possible.

TOU pricing may be disadvantageous for low income and disadvantaged consumers who are unable to shift consumption from peak times or to avoid use during critical peaks. Many low income consumers are aged, live with a disability or chronic illness, are unemployed, are sole parents of young children.

1. Do you agree with the problem definition in this RIS?

We are of the view that the problem as set out in the RIS [30] is flawed. The RIS acknowledges that the problem under consideration is higher level: "should there be a national roll-out of smart meters?" but refers that question to a later stage of work, Phase 2. The RIS seems to ignore a related question: "what is the purpose of smart meters?" ie beyond "what functionality should be included", the question "what applications should smart meters support?" There seems to be a gap between a detailed specification of functions and a set of high level objectives. The problem identified for consideration in Phase 1, set out below, goes to where the functionality should be prescribed legally, and to the advanced functionality:

> *a. Should there be a defined national minimum functionality for smart meters within the National Electricity Rules?*
> *b. If so, which of the proposed advanced smart meter functions should be included in the minimum national standard?*

[30] Regulatory Impact Statement, September 2007 p.13

Arguably, this approach complicates an assessment of functionality because a proposal to include the specification in the Rules necessarily loads the decision with gravitas and the likely need for absolute national (NEM) consistency. The approach also makes acknowledged but gross assumptions about the 'core functionality' and its costs and benefits.

We are of the view that a consideration of 'additional functionality' ought not be undertaken without a simultaneous consideration of the broader objectives set out in the RIS: [31]

1. Reducing demand for peak power, with consequential infrastructure savings (e.g. network augmentation and generation)

2. Driving efficiency and innovation in electricity business operations, including improving price signals for efficient investment and contracting

3. Promoting the long term interests of electricity consumers with regard to the price, quality, security and reliability of electricity

4. Promoting competition in electricity retail markets

5. Enabling consumers (including residential, business, low- and high-volume users) to make informed choices and better manage their energy use and greenhouse gas emissions

6. Manage distributional price impacts for vulnerable consumers

7. Promoting energy efficiency and greenhouse benefits

8. Providing a potential platform for other demand side response measures and avoiding discrimination against technologies, including alternative energy technologies

2. What is your view on the suggested options raised in this RIS and the analysis of them?

ACOSS is broadly but cautiously supportive of Option C, the development of a standard national minimum functionality. There is an inevitability about the introduction of advanced metering infrastructure in Australia. Given the market failure that COAG has recognised and seeks to address, we are supportive of moves towards standards that minimise the adverse effects of variations in functionality between jurisdictions and ensure that the potential benefits of smart meters are available as widely as possible.

However, with a view to the objectives of the project (minimise peak demand, defer network augmentation, reduce greenhouse gas pollution) we believe that there may be solutions that are more successfully tested, more widely applicable, more immediately available and less expensive.

3. Do you agree with the benefits, risks and impacts identified in this RIS?

We are concerned that the reported benefits are amplified as a result of overly optimistic assumptions in terms of the installed base (100%), tariff offerings and uptake (100%) and consumer response. We are concerned that insufficient regard has been had to the risk inherent in an assessment of additional functionality that relies on untested assumptions about core functionality. We are concerned that in establishing a national minimum functionality in this way, there is the risk of developing a specification that demand the design and manufacture of meters and related systems that are well beyond currently available, installed and tested technologies.

[31] ibid p.16

> Note that a functionally specification is separate from "standards" for different components. Many components, such as the metrology requirements, the physical base and footprint etc, already must comply with a range of country-specific standards. Australian standards are again relatively unique, falling between and following none of the diverse US, European and Asian standards. Consistent international standards do not exist which could be appropriate for Australia. This need to make an Australian specific meter is relevant in the level of competition for Australian meters from largely international players. [32]

The proposition such that mandating a national smart meters roll-out might "allow meter manufacturers to begin design and production of compliant meters" [33]seems to ignore current trials of meters and related systems and what the results of those trials might mean for a functional specification, to ignore the question of standards for meters and of intersecting jurisdictional regulation

4. What are your views on the analysis and conclusions of the overall cost-benefit analysis of specific functionality?

Recommended for inclusion in a Minimum National Functionality
13 Supply capacity control

The Phase 1 report suggests two possible applications for this functionality.[34] The first is as an emergency supply capacity limit following a network outage. The second is as a "normal supply capacity limit under a contractual agreement with the customer". Our concerns are several: it is not clear whether there are existing or alternative means of limiting supply capacity following a network outage; we have significant reservations about the prospect of supply limits, especially for low income and disadvantage households; the Report states that implementation costs are estimated variously at 'zero' to 'limited' but acknowledges interdependencies (remote connect/disconnect and remote reconfiguration) and that retailers or distributors would choose to invest in back-end system to make use of this functionality only if they perceived benefits outweighed costs; the Report notes a net benefit in the order of -$2.44 to -8.42 per meter (that is negative $2.44 to negative 8.42 per meter). In summary we are concerned that this is an instance where a notional but dubious prospective application is used to support the inclusion of an additional functionality on the basis of no or low cost. Given our previously expressed concerns about the costs and benefits of the 'core' functionality and the potential for incremental functionalities, even those assessed individually as no or low cost, to have the effect, in combination, of increasing costs, we suggest that this functionality be referred for further analysis before inclusion in the minimum national functionality.

Recommended for further consideration and analysis
16 Interface to home area network using open standard

We support the recommendation to refer this functionality for further analysis. The potential to facilitate both direct load control and in-home information, the wide and inconclusive range of assessed net benefit per meter (-$16.05 to $49.83) and the possible benefits go to make this further analysis worthwhile. Our view is that customer-driven demand response may be most effective if real-time information is available in the home. Our understanding is that the results of relevant trials in Victoria and New South Wales are incomplete. We suggest that empirical evidence, where available, should be considered in making an assessment of this functionality, especially of Cases A and B.

[32] Regulatory Impact Statement, September 2007 p.11
[33] ibid p.28
[34] Phase 1 Overview Report p.85

Not recommended for inclusion in a Minimum National Functionality
17 Provision of an in home display

We suggest a reconsideration of the recommendation against inclusion of an in-home display in the national minimum functionality. We are concerned that inadequate and incomplete information may have led to an inaccurate and pessimistic assessment of costs and benefits. We are concerned that the extent and benefits of demand response may have been ignored as a result of the methodology and its assumptions of a 100% national roll-out and 100% availability and take-up rate for TOU tariffs and CPP (effectively making in-home displays superfluous or redundant) but ignoring the potential for displays to work in tandem with TOU tariffs to increase demand response.