Manager
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21 April 2008

Dear Manager

Re: Smart Meters Cost Benefit Analysis – Phase 2

Please find attached to this letter our response to Phase 2 of the cost benefit analysis. Thanks for the continuing opportunity to inform this process.

Yours sincerely
Australian Council of Social Service

Tony Westmore
Senior Policy Officer

cc: NERA Economic Consulting

Australian Council of Social Service
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Standing Committee of Officials of the Ministerial Council on Energy
Cost Benefit Analysis of Smart Metering and Direct Load Control (Phase 2)

Response by Australian Council of Social Service (ACOSS)
April 2008

ACOSS welcomes the opportunity to respond to the Cost Benefit Analysis of Smart Metering and Direct Load Control, otherwise known as Phase 2. This submission attends to a small number of issues raised by the analysis: assumptions; relationship with Phase 1; and the decision of the Ministerial Council on Energy (MCE) in December 2007. We intend to make a more complete response to the Regulatory Impact Statement (RIS) issued by MCE SCO on 08 April.

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 last year. The views expressed in this response to the Phase 2 analysis 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 and none achieve the functional specification agreed by MCE at its meetings in December 2007;
- the functional specification may derive from (assumed or potential) technological capacity rather than intended application;
- unnecessary and unjustifiable haste may result in misplaced investment in the context of alternative means of delivering desired outcomes;
- alternative approaches to demand management have not been adequately considered; and
- there is currently no evidence to suggest that consumers will (or are able to) 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). This cost must surely be passed through to consumers (as customers and/or taxpayers).

Large numbers of electricity consumers, and particularly low income consumers, already struggle to pay electricity bills. A recent survey conducted by the Australian Bureau of Statistics (ABS) found that 15% of all households and around 20% of low income households had been unable to pay a utility bill at least once over the preceding twelve months.[1] The cost of a smart meter roll out and the implementation of time of use pricing both have considerable potential to increase the cost of an essential service.

While recognising the 'purely' (possibly abstractedly) economic approach of the analysis, we suggest that policy developed from this analysis will have very real implications for consumers. NERA suggest that "[f]or demand reductions brought about by... enhanced responsiveness to TOU and CPP tariffs, there is a cost to consumers from the lost opportunity to benefit from the amount of electricity use that was curtailed".[2] The ABS survey quoted above also reported that 5% of households in the lowest income quintile were unable to heat their home due to a shortage of money. The lost opportunity to benefit from consumption is already a problem in the form of fuel poverty or the under-consumption of energy.

ACOSS is cognisant of the benefits posited for smart meters: lower costs of production and delivery, deferred network augmentation, enhanced service performance, reduced greenhouse gas emissions and so on. In the context of significant, fast paced and somewhat unpredictable developments in electricity markets [3] we continue to hold the view that, in the immediate term, there are less risky and more effective means to address these challenges. We would support a program of trials designed to test and evaluate technologies and customer response, along with real world costs and benefits. This analysis of costs and benefits has been useful in establishing a framework for the consideration of costs and benefits. We believe that the considerable elements of uncertainty, acknowledged by the consultants, should be dealt with before proceeding to mandate a national implementation.

[1] Australian Bureau of Statistics, Household Expenditure Survey 2003-04, Incidence of financial stress indicators by weekly household equivalised disposable income quintiles, 2008

[2] NERA Economic Consulting, Cost Benefit Analysis of Smart Metering and Direct Load Control – Overview Report for Consultation p.26

[3] Such as, for example, individually and as they interrelate: volatile fuel prices (coal and gas); new regulatory regimes; drought and flood; newly competitive markets in some jurisdictions and deregulation of retail prices in others; the establishment of an emissions trading scheme (ETS) and impost of a carbon price, policy regarding complementary [to an ETS] measures including renewable and distributed generation.

General

Further to our response to the RIS issued with Phase 1 of the cost benefit analysis, we take this opportunity to reiterate our concern that the cost benefit studies are limited to a comparison of options for smart meters and direct load control. To our knowledge there is no cost benefit analysis of smart meters and/or direct load control as options alongside other options that might achieve the same goals (which we understand to be some combination of: improve price signals for investors and customers, improve energy supply reliability, reduce peak demand, minimise and delay network augmentation, reduce greenhouse gas emissions, maintain relatively low energy prices).[4]

With specific regard to the potential for smart meters to facilitate a reduction in greenhouse gas emissions, we note that there is currently in train a Strategic Review of Climate Change Policies. This Review, a joint project of the Minister for Finance and Deregulation and the Minister for Climate Change, will assess government programs in the context of the emissions trading scheme. We suggest that the smart meter project falls within the remit of this Review and ought to be assessed by it. The Review is due to report in September of this year.

Work towards a national framework for distribution (non-price) and distribution (non-economic) is in train. At this stage it is anticipated that the framework will be in place from January 2010. The policy, legislation and NEM Rules that will result from this work have considerable potential to impact upon policy for and implementation of a smart meter roll out.

In our response to the RIS issued with Phase 1 we expressed two fundamental concerns regarding the approach to this project: there are unresolved issues about the application of smart meter functionalities ie the purposes to which they might be put; and there is no currently available technological solution that suggests itself as robust and low risk.

Functionality and costs

We have a continuing concern with the decision to regard eight functions as ‘core’ and not subject to the same level of analysis as other functionalities considered by the consultancy. Although we understand the proposition that “these functions are fundamental to any smart meter deployment” they have not individually or severally been assessed for cost and benefit.

A related concern, expressed in response to the earlier RIS, is that the costs of functionalities regarded as additional to the ‘core’ were frequently expressed as ‘negligible to zero’ in relation to a core set that was itself not rigorously tested. In the continuing absence of a production-ready meter that meets the functional specification agreed by MCE, we are of the view that this failing completely undermines all of the propositions regarding costs across the spectrum of costs but particularly meters, communications, installation.

This concern is exacerbated by the seemingly unresolved issue of standards: for matters like metrology requirements, the physical base and footprint.

[4] COAG Meeting 10 February 2006 Communiqué; COAG Meeting 13 April 2007 Communiqué

Greenhouse gas emissions

We refer to the report prepared by CRA International: *Economic impacts on wholesale electricity market and greenhouse gas emissions.* CRA assert that "[c]arbon reduces in all the smart meter functionality analyses because the smart meters, at base or incremental functionality levels, induce a further reduction in load, and carbon emissions levels fall as a result in comparison to the carbon price base case". However, at Table 9 [5] the benefit of demand response impact on CO2-e emissions is estimated to range from 0.00% to 0.79%. The 0.00% estimate (Base Case Functionality) assumes only the functionality agreed by MCE in December and that time-of-use pricing has some effect on emissions as a result of load shifting. The CRA report notes, however, that

> *"if the impact of the [demand response] is primarily or only to shift significant amounts of energy from peak to off-peak periods, carbon emissions may increase. This would be the case in most Australian jurisdictions at present because most off-peak generation is conventional coal... Such a shift therefore would tend to increase the carbon intensity of the wholesale electricity market."*[6]

Both of the smart meter-enabled DLC scenarios envisaged by CRA are predicated on the inclusion of one or more functionalities currently **excluded** from the minimum functionality agreed by MCE in December (ie Nos 15, 16 and 17). Functionality 16, provision of an interface with a home area network (HAN), is regarded as requiring further work but likely to be included in the final functional specification. Functionality 17, provision of an in home display (IHD) was excluded and is unlikely to be reconsidered except in terms of its potential to be retrofitted at a later stage and activated through a HAN. Despite the unambiguous exclusion of an IHD from the functional specification, both of the incremental functionalities required in CRA modelling to enable cycling or constraining use are dependent on the inclusion of both a HAN and an IHD. In fact the CRA "analysis assumed that IHDs would be distributed universally" and cautioned that "[if] that were not the case, the benefit would be proportional to the percentage of customers in whose premises the devices had been installed".[7]

It is not clear to ACOSS whether or how CRA factored the costs of additional functionality at the meter (HAN) and for IHDs. However, if the CRA assumption of a universal rollout of IHDs is predicated IHDs being purchased and retrofitted by either retailers or customers we suggest that this might be an overly optimistic assumption and that, as the cost is real and eventually borne by consumers it ought to be considered as a cost of the roll out an included in the analysis.

The estimated 0.79% greenhouse reduction is predicated on the HAN/IHD functionality and assumptions about changes in consumer behaviour resulting (conservation effects) from the mere fact of a meter and/or the introduction of TOU/CPP pricing and increased awareness about consumption. We suggest that these assumptions are untested in the Australian market.

CRA notes that "[a]lthough the cost of carbon will naturally discourage any carbon-intensive fuel, a time-of-use (TOU) price signal may dampen or entirely counteract the impact of a carbon price".[8] We would add that prices are likely to increase as a result of a combination of other factors noted above.

[5] CRA International, Cost Benefit Analysis of Smart Metering and Direct Load Control – Work Stream 5: Economic impacts on wholesale electricity market and greenhouse gas emission outcomes p.57
[6] ibid p.54
[7] ibid p.53
[8] ibid p.55

Existing meter stock

The Consultation Report acknowledges that the "analysis does not take account of the costs associated with the existing meter stock being made redundant... as these sunk costs are not relevant to an economic cost benefit analysis to determine whether to proceed with a smart metering roll out" [9]

The Report observes that "how these redundant assets are subsequently treated by the regulatory framework will however be a relevant policy issue to be considered as part of the rollout". [10] It seems likely that these the stranding of these assets will lead to balance sheet write downs for affected businesses. These write downs will likely be reflected in the results of subsequent regulatory reviews ie in the prices that distribution businesses are able to charge for network services. We suggest that there must be some chance that this 'cost' might be offset by distribution businesses against some of the business efficiency benefits projected to derive from smart meters.

If, indeed, the estimated value of the current stock is in the order of $1 billion and there are approximately 10 million meters, the value of the write off would seem to average in the order of $100 per currently installed meter. Even allowing for the variation in useful life remaining (ranging from zero to 39 years) and the difficulty involved in making a meter by meter or even business by business assessment, it does seem that the cost of this considerable existing investment should be accounted for somewhere in this analysis.

Related to this concern are existing investments in the systems that currently support accumulation meters including information technology (some of which will be required to run in parallel with new systems at least for a time) and meter reading equipment. The EMCa analysis of transitional implementation costs seems to ignore costs associated with human resources that are likely to result from making meter readers redundant; these costs might extend to redundancy payments, retraining and placement services and so on.

A residual matter that may have been overlooked is the disposal of 10 million accumulation meters which must have financial costs and may have environmental implications.

The benefits assessed by the analysis include avoided meter costs associated with not having to replace the existing meter stock. This benefit is estimated to range from 39% to 44% of total benefits, or in dollar terms, from $1.7 billion to $2.6 billion. We are perplexed by the decision to simply ignore the value of the existing infrastructure and the costs involved in disposing of it.

Jurisdictional 'derogation': costs and competition

We are concerned that, were some jurisdictions to be excluded from a national roll out as the analysis would suggest, and "the requirement to settle the wholesale market on the basis of net system load profiles, rather than actual usage information would remain" there would be significant effects on both costs and benefits. It might be that an effective hybrid system could be developed to address this issue. But given our understanding of the goal of the NEM, ie a borderless market, this prospect would seem to imply significant costs for all market participants. Either the full benefits of advanced metering infrastructure would not be obtained or the maintenance of parallel systems would increase costs on a continuing basis.

[9] NERA Economic Consulting, Cost Benefit Analysis of Smart Metering and Direct Load Control – Overview Report for Consultation p. 29
[10] ibid p. 29

In a similar manner, the Consultation Report acknowledges that "retailers operating across jurisdictions may require different business processes for managing customer switching and services provided through smart metering, such as special reads... [t]his is likely to increase the costs associated with managing a smart meter rollout". [11] We are concerned that retailers may well require different business to business (ie retailer to distributor) and retail processes, billing systems and tariff offerings in order to manage the different types of meter data; accumulation and time of use. The exclusion of one or more of the larger jurisdictions, such as South Australia for example, would exacerbate this problem. We suggest also that there is some risk that jurisdictions excluded from a roll out, smaller jurisdictions such as Tasmania and the Australian Capital Territory, could see diminished competition if some retailers chose to move their business to smart meter only platforms and to withdraw from markets served by accumulation meters.

Costs and benefits

Our understanding of the assumptions made for the analysis and, by extension, the implementation of a national roll out is that work towards two years of trials and planning would begin in July 2008 for commencement in January 2009. At the end of this period an 'accelerated rollout' would see all existing meters replaced by December 2014.

NERA notes that "the costs [of the roll out] are incurred predominantly at the beginning of the period, when the meters are rolled out... while the benefits tend to grow throughout the period". [12] EMCa suggest that 90% of the cost of the roll out will be incurred over the years 2009 through 2013.[13] It might be that incremental benefits begin to flow before the roll out is complete in January 2015 but there must be significant potential for these to be offset by costs associated with operating old and new systems in parallel and/or roll out cost increases. The benefits, ie reduced business costs, of an operational smart metering system, at scale and across entire jurisdictions, will only begin to flow well after the bulk of investment has been made.

ACOSS is concerned about the assertion that costs and benefits will flow through to consumers. We foresee a situation in which distributors (and retailers) seek to pass through the costs of significant capital expenditure as those costs are incurred while claiming that they are not yet realising benefits in terms of reduced capital or operating expenditure. There is clear potential for bills to increase as a result of the pass through of these costs in conjunction with TOU/CPP pricing. The question then becomes at what point do consumers benefit from business efficiencies? and to what extent? What if business efficiencies are not realised or are offset by project cost increases?

Risk and uncertainties

Even at this preliminary stage the consultants acknowledge that information on which the analysis of costs has been based is most likely inaccurate. We understand that Victorian distribution businesses have reassessed their estimates of costs and now report a 'difference in costs' of "greater than 5 per cent". We understand that this *difference* is an **increase** in estimates.[14] NERA observe that "a 5 per cent increase in costs (all other things remaining equal) would result in an overall negative benefit in the lower bound for a smart meter roll out under Scenario 1"[15], the preferred scenario.

[11] ibid p. xix
[12] ibid p. 31
[13] Energy Market Consulting associates, Cost Benefit Analysis of Smart Metering and Direct Load Control – Work Stream 6: Transitional Implementation Costs - Phase 2 Consultation Report: Assessment of National and Jurisdictional Costs p. 240
[14] NERA Economic Consulting, Cost Benefit Analysis of Smart Metering and Direct Load Control – Overview Report for Consultation p. 196
[15] ibid p.196

Earlier in the Consultation Report, NERA advise that "there remains uncertainty as to the likely costs and benefits associated with a smart metering rollout in Australia" and that "were the actual costs to be 5 per cent higher than the high end estimate... or benefits were to be 5 per cent lower than the low end estimates... the positive minimum benefit case becomes a negative minimum net benefit..."[16]

It would seem reasonable to suggest that, at further and better informed stages of the national project, estimates of cost might be subject to further refinement and to change significantly as a result. We suggest that, similarly, some estimates of benefit may be overstated (or understated) in this analysis and that the simple comparison of costs and benefits may be skewed by a total of 10 per cent or more. We agree that uncertainty is best resolved through extensive trials and prototype scale rollout.

Given the extent of the uncertainty revealed by the Phase 2 work, ACOSS suggests that MCE defer a decision regarding implementation and instead work with stakeholders to improve the quality and reliability of information about costs and benefits of smart meters.

Yours sincerely
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[16] ibid p.12