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## Submission to the Regulatory Impact Statement for the Cost Benefit Analysis of Smart Metering and Direct Load Control: Phase 2 Reports for the Ministerial Council on Energy's Standing Committee of Officials.

May 2008

This submission presents the views of St Vincent de Paul Society Victoria (SVDP) and the Consumer Utilities Advocacy Centre (CUAC).

SVDP Victoria has approximately 8000 members and volunteers in Victoria (40,000 nationally). The society assists approximately half a million individuals annually across Victoria (over 1.5 million nationally). Of this, a significant number are based in the non-metropolitan area. SVDP also delivers a number of community support services including: aged care facilities, housing services, youth services and disability services.

CUAC is an independent consumer advocacy organisation, established to ensure the interests of Victorian electricity, gas and water consumers, particularly low-income, disadvantaged and rural consumers, are effectively represented in the policy and regulatory debate.

### **General questions: costs, benefits and risks**

From a consumer point of view we welcome the opportunity to comment on the Regulatory Impact Statement (RIS) as this gives us the ability to raise issues not covered through previous consultations and to reinstate issues we believe are of particular importance to our constituency.

We believe there are two key risks attached to a mandated rollout of smart meters:

- First, that customers will pay for this technology through increased network charges, without the savings accrued from operational efficiencies being passed back to consumers in a timely manner.
- Second, that the indirect benefits such as estimated reductions in carbon dioxide emissions will not be achieved, resulting in an additional cost for households without the societal benefits being realised.

To mitigate these risks we strongly recommend that there is a formal review and change process that allows the rollout to be adjusted as new information emerges and/or new technologies develop.

While we support a rollout approach that makes the distribution businesses (DBs) the responsible party, we believe it is important that the risks attached to such an approach are acknowledged and strategies put in place to effectively manage them. As noted in both the Phase 2 reports and in submissions by stakeholders,<sup>1</sup> there are substantial uncertainties attached to the costs and benefits. We note from the consultants' reports that the operational/business efficiencies allocated to the DBs from remote connect/disconnect and remote meter reading capabilities are key benefits that must be captured in order to justify a rollout.

We do not believe a smart meter rollout can be justified on the basis of broader public policy objectives such as potential greenhouse gas reductions or avoided network augmentation (due to increased demand response from tariff innovation). We regard these benefits as highly speculative while the costs to consumers are certain and may cause a significant financial burden – in particular for low-income households.

The rationale behind any proposed rollout must be communicated in detail to ensure that all stakeholders have the same expectations with regards to costs and benefits. In addition, complementary regulatory arrangements must be developed to support the cost recovery process and ensure the timely pass through of savings from operational benefits to end users.

### **Specific questions**

The remainder of this submission addresses questions raised in the RIS on which we have a particular view. As we have already submitted extensive responses to the Phase 1 and the Phase 2 consultations, we have restated some previously submitted material in addressing particular questions.

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

In line with our comments in response to the Phase 2 analysis, we recommend that alternatives to the embedded HAN enabling technology for information provision be investigated.

The modelling assumes a 100% rollout of the functionality but only between 7.5 -15% will utilise the full potential of the functionality (through HAN enabled IHDs) which means that 85% of households will pay the full cost of the functionality without accessing any direct benefits. This raises questions as to the possibility of utilising alternative technology and information provision options. An approach that allows for the meter to make provision for “bolt on” HAN enabling technology rather than having the HAN enabling technology embedded within the meter should be investigated.

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<sup>1</sup> See for example United Energy Distribution and Alinta's submission to the Phase 2 consultation reports.

We remain unconvinced that the limited use of IHDs and the additional DLC capacity obtained through potential retrofitting opportunities - and noting our concern about the estimated take up rates detailed below - justify the additional meter cost for *all* customers.

Our concern is that some customers will pay for a functionality that they will not use and from which they will not directly benefit. This results in some customers cross subsidising the cost of the smart meters for others. Options that limit any potential cross subsidising should be fully explored.

We believe that exploring such an approach has the potential to significantly reduce the at the meter cost of the rollout while providing the flexibility to accommodate the estimated 7.5-15% of customers that will use this functionality to its full potential by installing IHDs.

Furthermore, we are concerned about the assumptions made in the analysis regarding the take up-rates of the TOU/DLC and TOU/ CPP options in relation to Functionality 16. In the high demand scenario the analysis assumes that 30 % of the population is on TOU with an additional 15% on TOU/ CPP and a further 15% on TOU/DLC.

It is reasonable to suggest that the take-up rates for CPP and DLC programs will be only amongst households with air conditioners. According to figures presented in the Phase 2 reports approximately only 60% of Australian households have air conditioners. By applying the 30% take up rates to the population (those on TOU/ CPP and those on TOU/DLC) on the whole, this modelling implies that approximately 50% of all households with air conditioners will sign up for CPP or DLC tariff options.

As all program/tariff take-ups are assumed to be voluntary we believe that this acceptance rate is overly optimistic and, noting that the analysis does not attempt to justify or properly explain this assumption, we recommend that an adjustment of the modelling is undertaken.

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

We do not believe the RIS takes the right approach in its assessment of how well the scenarios meet the MCE objectives.

The MCE should assess smart meters and DLC against other options in order to establish whether smart meters/DLC are the appropriate strategies to meet these objectives.

An assessment that includes the cost and benefits of programs other than smart meters or DLC would be able to identify what policies or programs best deliver these objectives.

Alternative options to smart meters/DLC that should be incorporated into such an analysis may include:

- Feed-in tariffs that promote embedded generation including PV, wind and other sources of energy generation
- Targeted demand management programmes that focus on audit and retrofit of certain types of households
- The promotion of other fuel sources in targeted areas such as reticulated natural gas to ease demand

This analysis would result in an improved version of table 5 (RIS page 54) and enable the MCE to make a more informed decision about the appropriate tools to address these objectives.

Furthermore, such an analysis should be undertaken on a jurisdictional basis. As clearly demonstrated by the Phase 2 reports, the impacts and benefits vary significantly from jurisdiction to jurisdiction. For example, some jurisdictions may achieve a greenhouse gas emission reduction as a result of rolling out smart meters and TOU pricing while others, depending on the fuel source used for base load, may experience an increase in emissions. It is therefore important that the MCE realises that benefits captured in some jurisdictions are not cancelled out by negative impact in others.

**Question 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?

As stated in our response to the Phase 2 reports, we support the overall direction of the analysis but continue to have significant concerns regarding the assumptions underpinning many of the scenarios, and which we believe can have material impact on the outcome of the cost benefit analysis. In addition to the take-up rates of CPP/DLC discussed above, we raised concerns about the customer allocation ratio of TOU and flat rate tariffs and the assumed demand response benefits due to IHDs.<sup>2</sup>

These risks can be reduced through a review and programme change process that allows new information and technologies to be evaluated and included where appropriate. These review options are discussed in more detail under question 17.

**Question 7:** Can stakeholders identify any additional costs, risks or benefits that would result from a distributor-led roll-out? What can be done to maximise the benefits and minimise the risks of this option?

We refer to our introductory comments in regards to ensuring that benefits and savings captured by the DBs are passed through to customers. We raised this issue in our

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<sup>2</sup> See St Vincent de Paul Society and Consumer Utilities Advocacy Centre, *Submission to the Phase 2 Cost Benefit Analysis of Smart Metering and Direct Load Control prepared for the Ministerial Council on Energy's Smart Meter Working Group* (April 2008).

submission to the Phase 2 reports but reiterate that the regulatory framework must ensure that the benefits accrued under a DB-led roll out are promptly returned to customers.

We do not believe a typical 5 year regulatory period would deliver satisfactory outcomes to customers but allows the network the opportunity to gather windfall gains. We believe the benefits accrued through the smart meter rollout should be assessed and handed back to customers on an annual basis.

We strongly recommend that the MCE consider and implement an annual review of the distribution companies' smart meter rollout with the view to ensure any network benefits are passed through to customers on an *annual* basis.

Furthermore, we recommend that the MCE identify the extent of cross subsidies that are likely to occur between classes of consumer: i.e. customers that will pay for the full functionality of the smart meters as set out in the specification, but are unlikely to capture any direct benefits through new tariff designs.

**Question 12:** Of the roll-out models listed, which is your preferred option and why?

We have three main reasons for supporting a DB-led rollout approach.

- First, we believe that by making the DBs responsible for the rollout that the substantial operational benefits can be captured and passed on to end users more easily (noting that this will depend on the design of the regulatory framework as discussed under the question above).
- Second, as regulated businesses, policy-makers and customers have greater certainty that costs will be kept to the minimum and be able to be tracked. The certainty provided by the regulatory framework is important due to the significant cost implications such a project will have for consumers.
- Third, the regulatory framework should make it easier to ensure that costs are equitably allocated. As discussed in our submission to the Phase 2 reports, a key equity issue pertains to the allocation of costs to classes of consumers.

The Phase 2 reports stated that the impacts are likely to be net positive over a 20 year period but the expectation is also that “average prices would rise initially to pay for the initial rollout with benefits accruing over the remaining period as the business efficiency benefits are realised and passed through to customers”.<sup>3</sup>

This raises important customer impact and equity issues. Customers will experience two types of cost increases as a result of the interval meter rollout. Initially there will be costs associated with the purchase and installation of the meters. These costs will most likely be allocated in the fixed network charges or the first block of energy consumption if the

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<sup>3</sup> NERA, Phase 2 Cost Benefit Analysis of Smart Metering and Direct Load Control (February 2008), p 204

network has inclining block tariffs. In either case this will increase the cost of energy disproportionately for low volume energy consumers.

In addition to these underlying price increases, consumers will also experience increased price volatility due to the development of new tariff designs such as TOU and CPP. Similarly those households with low volume energy consumption are likely to experience a disproportional cost impact.

Low volume energy consumption households will experience disproportionate cost increases but are also least likely to be offered tariff options, or have the ability to respond to price signals, to allow them to offset these underlying costs.

In effect low volume households will cross subsidise high volume households. This is of particular concern as low- income households represent a large proportion of low volume consumption households.

As such, we strongly recommend that the MCE implement pricing principles that allocate the costs of the smart meter rollout (or a higher proportion thereof) to higher consumption households. This can be achieved by only allowing the pass through of these costs once a certain consumption threshold has been reached. Such an approach will ensure that costs are more equitably allocated. This is particularly important as the costs will be loaded up into the initial phase of the rollout but the benefits will not be equally shared over the 20 year period.

**Question 14:** Are there any jurisdictional issues that stakeholders think have not been addressed in the cost-benefit analysis?

We do not believe that the issue of dual fuel (gas and electricity) households and the impact of the availability of reticulated gas in each jurisdiction will have on demand response and TOU pricing has been sufficiently analysed and acknowledged.

As raised in our submission to the Phase 1 consultation, we believe dual fuel households are likely to have different demand elasticity compared to all-electric households due to differences in electricity demand (theirs is lower) and usage patterns. This also means that the financial impact on these households is likely to differ from all-electric households.

This will have a significant demand response impact in the long run, but neither the Phase 1 or Phase 2 study examined this issue in any detail. If a dual fuel household is allocated a TOU tariff the household will have limited opportunity to maximise the benefits available from an off-peak pricing component, as a high proportion of the household's energy consumption at off-peak times is likely to be gas usage (gas space heating and gas hot water systems). Subsequently, such a household is likely to prefer the installation of electrical appliances when the issue of replacement arises. This will not only result in an overall increase in demand for electricity but also a corresponding increase in greenhouse gas emissions.

**Question 16:** 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?

We support the findings in the Phase 2 analysis in relation to cost and benefit comparisons between remote and urban areas. However, a customer impact type issue pertaining to non-metropolitan households in particular is that of two element meters vs. TOU pricing, which we raised in our submission to the Phase 1 analysis, but which we do not believe has been adequately addressed.

We are concerned about the impact a smart meter rollout may have on households with dedicated off-peak circuits. We believe there are major price implications from switching households with current dedicated off-peak circuits (with and without boost options) to a TOU pricing arrangement. This is a particular concern for households currently taking power through a two-element meter (or even three-element in some places), which may not be available as a result of a smart meter roll-out. Our estimates indicate that price increases will potentially affect as many as 500,000 Victorian households, mostly confined to regional centres and rural towns.

Customers currently on two-rate electricity have specific appliances that are hard-wired to receive off-peak consumption at a specific rate and all other consumption at a general domestic or general residential rate. With the installation of a single-element interval meter these customers will be allocated to a new – TOU – network tariff.

A discussion paper on metering for electric off-peak heating issues by the Victorian Department of Primary Industries rightly noted that:

“A single element meter cannot distinguish between *types* of use within the defined period. As a consequence, the same network tariff would be applied to all uses in any given period, whether the consumption is for electric off-peak water heating or other uses.”<sup>4</sup>

Subsequently, customers with electric hot water and slab heating will be disadvantaged by a smart meter roll-out if unable to separately hard-wire these appliances. It should also be recognised that hot water services and slab heating are major appliance investments and that customers are unlikely to change appliances in the short to medium term. Indeed, as the majority of these consumers live in non-metropolitan areas without access to reticulated gas they will have limited options in terms of converting appliances and/or fuel substitution.

Many of the 6 and 8 hours off-peak electric hot water and space heating units have boost functions incorporated into the appliance design. However, these appliances boost during peak periods (electric slab heating typically boost for three hours between 2-5pm) but as

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<sup>4</sup> Dept of Primary Industries (December 2006), Discussion Paper, *Metering for electric off-peak heating*, p 5

they are hard-wired into the meter the boosting load is assigned to off-peak tariffs although the usage occurs during peak times.

Without a second element this boost function will attract a time of use peak charge rather than an off-peak charge. This is approximately a 300% increase to the cost experienced by these customers for these periods. The magnitude of the impact on households would depend on a few factors, but consumers with electric slab heating as well as large electric hot water tanks who have household members home during the day (which means that the water service will boost more regularly) are clearly going to be among the most disadvantaged.

We acknowledge that the distribution businesses *may* have a business case to roll-out two-element meters to these customers, but the magnitude of the possible disadvantage clearly warrants a thorough investigation into the impact of single element meters (both in terms of numbers of customers affected and price increases) as well as an assessment of possible mechanisms that can mitigate these impacts.

**Question 17:** 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?

We do not have any particular views in terms of rollout timelines but we recommend that the timelines developed allow for a review process. In response to the Phase 2 reports we recommended that a formal process for review be developed to further inform the cost benefit analysis.

We encourage the MCE to put in place milestones that allow for review and update of the modelling as relevant information becomes available to market participants such as regulators, government and consumer representatives. For example, information from the Energy Australia trials will be available soon and similarly information regarding actual costs of a roll out in Victoria as the regulatory review progresses and the procurement process commences.

As noted by NERA in the Phase 2 overview report, the current analysis has “only been able to draw a limited extent upon the preliminary cost work being undertaken as part of the Victorian rollout of advanced metering infrastructure, which would be expected to better inform the costs associated with back-end infrastructure”.<sup>5</sup> Furthermore, the Phase 2 overview report states that “it appears that the aggregate costs as assessed by the Victorian distributors that provided information to the EMCa are ‘somewhat higher’ than EMCa’s assessment”.<sup>6</sup>

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<sup>5</sup> NERA, Phase 2 Cost Benefit Analysis of Smart Metering and Direct Load Control (February 2008), p 195

<sup>6</sup> Ibid, p 196

NERA's understanding is that this difference is more than 5% which could result in an overall negative net benefit in all the lower bound scenarios (all other things remaining equal).

We believe this highlights the need for a formal review process of the current cost benefit analysis as new information about both costs and benefit assumptions emerge.

**Question 20:** What process should inform the design of smart meter pilots and trials? Who should be responsible for undertaking them?

We believe the Government should be involved in facilitation and co-ordination of smart meter pilots and trials. In our view, Government co-ordinated trials increase the likelihood of information sharing and various stakeholders' ability to learn from the trials' result. This is particularly important for any customer response or pricing trials that may take place, as information obtained from such trials should be shared in order to inform the development of customer protection mechanisms and other policy initiatives.

**Question 23:** Do stakeholders have particular issues to be considered by the review of consumer protections arrangements?

Clearly we believe the customer protections arrangement review is vital to ensure that the right arrangements are in place before customers are exposed to the impact of smart meter enabled tariff structures and technology allowing for rapid and remote disconnections.

A rollout of smart meter technology and time-varying prices will, for example, lead to:

- overall price increases, which means that more households will face problems in paying their electricity bills;
- increase in price volatility due to time-varying prices (both weekly and seasonally);
- increase in the speed, and potentially the frequency, of disconnections;
- increase in consumer information through HAN enabled information provision and;
- increase in tariff options and product complexity.

Consequently, a smart meter rollout will cause affordability issues (due to higher underlying costs and increased bill volatility) and associated access to supply problems. This will result in an increased demand for bill smoothing products (such as Ezyway plans), warrant new guidelines for consumer information provision and increase the occurrence of temporary energy related hardship cases due to life cycle changes (as it will become more important that consumers are on energy tariffs suitable to their life situation and consumption patterns).

We strongly recommend that the consumer protection review undertakes to examine all the potential impacts and new challenges smart meters will have on various classes of consumers.

We also recommend that the Victorian Energy Retail Code is used as a starting point for this review, which should aim to identify supplementary customer protection requirements (potentially including code amendments) deemed necessary due to a smart meter rollout.

**Question 24:** Do stakeholders have views on different approaches to public education on smart meters or on the funding of such campaigns?

Our main concern in relation to customer education campaigns is the ability to deliver a consistent message - industry participants have different objectives when it comes to utilising the smart meter technology, and they do not necessarily represent consumers' best interests.

As noted in the Phase 2 reports, there is for example no requirement that the retailers pass through network TOU pricing structures to their customers. A key component of a public education campaign must be to ensure that consumers understand TOU pricing and how this will impact on their bills.

The RIS suggests that consumer education may be provided by governments as well as industry (retailers), but we strongly recommend that a consistent message is developed prior to assigning information and education roles to various stakeholders.

Please do not hesitate to contact Gavin Dufty (03 9895 5816) or May Johnston (03 9639 7600) should you have any questions about the above.

Yours sincerely,

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