energy networks association

COST BENEFIT ANALYSIS OF SMART METERING & DIRECT LOAD CONTROL - PHASE 2

ENA Submission

16 April 2008

Key messages

ENA supports a distributor led mandatory national smart meter roll out that prioritises regions where benefits are clearly identified. Such a roll out should provide for:

- **Ongoing distributor exclusivity both in the delivery of smart meters, and metering data services;**
- **The MCE to establish a nationally consistent legal and regulatory framework from the outset of the smart meter roll out which includes full cost recovery;**
- **An industry led governance structure including steering committee, technical and regulatory working groups as appropriate; and**
- **State jurisdictions to decide on the timing of a smart meter roll out where they can establish the existence of net benefits.**

1. Executive summary

The Energy Networks Association (ENA) welcomes the opportunity to comment on the *Cost Benefit Analysis of Smart Metering and Direct Load Control Phase 2* draft overview report, released by the Ministerial Council on Energy (MCE) Standing Committee of Officials (SCO) in March 2008.

ENA is the national representative body for gas and electricity distribution network businesses.

ENA considers that the CBA findings supports existing MCE policy endorsing a national mandatory smart meter roll out in jurisdictions where the benefits clearly outweigh the costs.

ENA supports a nationally consistent legal and regulatory framework with an exclusive distributor led smart metering roll out. This approach is justified on both market failure and public goods grounds given the inability of stakeholders in the segmented electricity supply chain to capture all the benefits and the contribution to greenhouse abatement that the technology is expected to realise.

The uncertainties as reflected in the results of the cost benefit analysis in the NERA report provide a strong argument for distributor exclusivity covering both the initial investment and subsequent provision of metering data settlement and servicing.

Further, the probability that investors will not be able to retain the full benefits of the roll out provides support for full cost recovery by distributors. Cost recovery should not only be for capital and operating expenditure but also extend to costs covering pilot programmes essential for the management of risk.

As to the process going forward, ENA believes that there should be an early commitment to a consistent national legal and regulatory framework based on an exclusive distributor led roll out in jurisdictions where a business case can be identified after taking into account Government commitment to full cost recovery.

To accommodate changes to technology and updated data from pilot programs an MCE Review process should be set up to provide the flexibility needed to make adjustments as new information on the smart meter roll out emerges. Industry needs to be given the prime role in determining the technical parameters of the roll out and in the setting up of any pilot projects necessary to consider integrated business design that allows a full appreciation and assessment of appropriate technologies, business processes and impacts on customers, as well as an analysis of alternative solutions. ENA expects the legal and regulatory framework to accommodate pilot programmes and trials where appropriate including the ability for the recovery of costs for trials. This allows data to be collected to make accurate assessments on costs and benefits moving forward within the respective jurisdictions.

2. Background

This submission responds to the *Cost Benefit Analysis of Smart Metering and Direct Load Control Phase 2* released by the Ministerial Council on Energy (MCE) Standing Committee of Officials (SCO) on 5 March 2008.

ENA is the national representative body for gas and electricity distribution network businesses. Energy network businesses deliver electricity and gas to over 12 million customer connections across Australia through approximately 800 000 kilometres of electricity lines and 75 000 kilometres of gas distribution pipelines. These distribution networks are valued at more than $35 billion, and each year energy network businesses undertake capital investment of more than $5 billion in network reinforcement, expansions and extensions.

3. Overview of Phase 2 cost-benefit analysis outcomes

The Phase 2 report objective was to identify whether and where there are net positive benefits for a smart meter roll out with a view to assisting MCE in identifying which, if any, areas should be exempted or delayed. This objective follows from the April 2007 COAG commitment to a national mandatory smart meter rollout where the benefits outweigh the costs.

The three principle objectives of a smart meter roll out identified in the report are:

1. Management of network demand in order to delay large investments;
2. Achieve business efficiencies through avoidance of costs; and
3. Reduce greenhouse emissions.

The analysis is based on mandatory roll out over a 20-year period and concludes that the distributor led roll out best satisfies the MCE's objectives.

According to the report at the national level the net benefits of a distributor led roll out vary from $179 million to $3.934 billion. Most of these benefits are expected to arise from avoided meter costs associated with not having to replace existing meter stock and business efficiency benefits. The only other Scenario to show a consistent net positive benefit in the report is the Direct Load Control option ($34 million to $618 million).

The NERA report claims that their approach is conservative stating that in the majority of cases they compare the high end of cost estimates with the low end of the benefits.

The NERA report also claims that at the State and Territory level the net benefits of a distributor led smart meter roll out are positive for some jurisdictions (Queensland, WA and NSW) but potentially marginally negative for other jurisdictions.

4. Response to Phase 2 report

4.1 Distributor led roll out

The NERA report indicates that on the basis of the relative net benefits and its assessment of roll out scenarios against MCE objectives, Scenario 1, the distribution led smart meter roll out is recommended.

ENA Position

ENA strongly supports this view which it argued for in its October 2007 submission to the Phase 1 Cost Benefit Analysis to the MCE which identified a number of benefits with a distributor led roll out including:

- Use of existing infrastructure to deliver an advanced metering solution;
- The benefits of density and economy of scale for a distributor led model;
- Competitive tendering of components of the metering and the meter data service provision; and
- Fair and reasonable approved regulatory charges for all customers.

Our submission also pointed to the problems with a retailer roll out:

- The complexity and cost related to meter churn adversely affecting competition in the retail market;
- The incentives for retailers to pursue accelerated cost recovery compared to distributors;
- Possible barrier to entry for new retailers; and
- Difficulties associated in achieving a mandated roll out to all customers.

ENA is of the view that given the uncertainties and risks involved the only viable option is for an exclusive distributor role in the roll out and operation of smart meters. This approach is consistent with the findings of the Phase 2 study which shows the greatest net benefit under a distributor business (DB) led program. Only then would distributors have the confidence to undertake the large scale investments needed to enable the implementation of smart meter technology.

Recommendation

1. The MCE to provide timely endorsement of the DB led roll out which provides for DB exclusivity in relation to establishment of smart meters and related data services in order to capture the long term benefits as reflected in the NERA cost benefit study.

4.2 Quantitative outcomes of report uncertain

The costs and benefits identified in the report are subject to uncertainties that the report acknowledges by drawing attention to the:

> …considerable limitations associated with the information used that brings into question the conclusions that can be drawn from the quantitative results presented.

And:

> …no smart meter currently exists that meets the functional specification that we have been asked to examine, meaning the actual costs of these meters could vary considerably from those used in the analysis.

The NERA report concedes that costs could be at least five percent higher to reflect cost estimates as assessed by Victorian distributors. The report also acknowledges significant cost uncertainties surrounding its assumption relating to the level of difficult installations.

The estimated benefits of 'avoided meter costs' relating to meter reading and customer servicing (67 to 74 percent of total distribution benefits) are subjected to simplifying assumptions that CRA concedes have a relatively low degree of certainty. Further the savings from avoided 'special reads' are based on total rather than marginal costing. This means that the benefits are likely to be overstated over the short to medium term.

There is also the vital issue of the likely demand side response which the report identifies as a major area of uncertainty. If cost reflective pricing does not flow through to customers the demand response can be expected to be smaller with consequential reductions in the benefits. In this regard the report acknowledges that retailers are not guaranteed to pass on costs without significant changes to regulations. There is also the question of considerable uncertainty regarding the consumer uptake rate of Time Of Use (TOU) tariffs or Critical Peak Pricing (CPP) tariffs as alternative to flat tariff pricing under a voluntary arrangement.

The report also identifies technology uncertainties relating to communication provisions in rural areas and to the net benefits of the interface with the Home Area Network (HAN).

ENA position

ENA's view is that there are acknowledged uncertainties about the absolute numbers relating to costs and benefits presented in the report. Instead the focus should be on the relativities between the scenarios modelled.

ENA encourages Government to consider targeted and focused public education programs to maximise potential benefits by getting consumers to become familiar with the new technology.

Another requirement to address uncertainty for investors engaged in the smart meter rollout is for the Government to establish a sound legal and regulatory framework as a priority. The framework would need to provide certainty that cost recovery would cover smart meter procurement and installation and the costs related to pilot projects and trials.

The only way to achieve this is for the MCE to coordinate the necessary changes to the National Electricity Law (NEL) and procedures governing the Australian Energy Regulator (AER) to ensure their completion are timely.

Further, ENA believes that data from any pilot studies and changes in smart meter technology will require the roll out process to be flexible. Therefore there will be a need for ongoing review and adjustment to the roll out process which would be best handled through the proposed co-regulatory governance structure and the existing MCE consultation process for smart metering.

Recommendations

2. The industry should lead the development of detailed technical specifications and service standards.

3. The MCE to facilitate the establishment of a clear legal and regulatory framework for smart metering services at the outset of the process and to include full cost recovery for smart meter related capital and operating expenditures.

4.3 Business Risks

The level of uncertainty regarding the quantitative analysis is captured in the wide range between the upper and lower case outcomes for the smart meter scenarios modelled, namely, a $3.75 billion for the distribution led rollout (Scenario 1), $4.28 billion for the retail led roll out (Scenario 2), and $4.19 billion for the centralised communication (Scenario 4).

For the aforementioned smart meter scenarios this level of uncertainty highlights the importance of avoiding inappropriate regulation through the functional specification. Inappropriate regulation would increase the business risk carried by investors required to commit significant resources to any one of the scenarios assessed.

Another measure of the risk is the NERA reports acknowledgment that the business case for the distributor roll out is predicated on the distributors retaining the benefits that are achieved as a result of the roll out. It goes on to say:

> In practice this will <u>not be the case</u> as the distributors are subject to price regulation and regulators will seek to <u>pass-through to consumers the benefits of the efficiency</u> gains achieved by DB's in the form of lower network charges going forward [Emphasis added].

This means that distributors are unlikely to recover the high up front costs of investment in early smart meters before 'distributor benefits' are passed through to customers in efficiency gains.

The report also states that:

> The inability of any one stake holder to capture all of the benefits may therefore mean that there is no business case for any individual stakeholder to undertake smart meter roll out [Emphasis added].

ENA regards this as a crucial point which demonstrates the need for regulatory intervention to mandate a roll out. Distributors are best placed to carry out the provisions of smart metering and related services and to maximise the net benefits.

The above point also demonstrates the need for full cost recovery to address the splitting of benefits which undermines the business case for investment in smart meters for some investors. Therefore ENA takes this opportunity to express its opposition to a mandatory smart metering roll out that goes ahead in any jurisdiction in the absence of full cost recovery to underpin a business case.

ENA position

From an ENA perspective, a mandatory roll out of smart meters, in the absence of full cost recovery to ensure a business case exists will compromise a primary objective of energy policy, which is to promote the growth of a secure and sustainable energy industry. Forcing networks to engage in activity in the absence of full cost recovery will undermine this objective by reducing investment in distribution networks.

DBs currently are unable to progress a business case for smart metering because under the current National Electricity Rules (NER) the decision is a matter for Retailers (See Section 7.2.3 of the NER). Under the NER, the relevant retailer is responsible for paying for metering services and the retailer selected by each end-use customer may elect to be the responsible person (metering services provider) for Types 1-4 meters. The relevant DB may be the responsible person for Types 1-4 meters provided the retailer has elected to accept an offer from the network. Networks are obliged to provide standing offers.

In 2006, in line with the recommendations of a Joint Jurisdictional Review of Metrology, the Australian Energy Market Commission (AEMC) acceded to a National Electricity Market Management Company (NEMMCO) proposal to change the definition of metering types. As a consequence, if a meter is capable of being read remotely, then it is deemed to be a Type 1-4 meter. The only circumstances under which DBs can be the responsible person for meters capable of being read remotely, without being elected by retailers, is for difficult to access sites.

Types 1-4 meters are therefore contestable. Manually read meters, including Type 6 (accumulation meter) and Type 5 (interval meter) are currently not contestable, pending a scheduled further regulatory review.

The NER means that, if a Type 5 meter (a manually read interval meter) is upgraded by the addition of communications to enable remote reading, then the meter is automatically reclassified to be a Type 4 meter. In other words, the meter is now contestable. Once contestable, it is possible retailers may not elect the DB to be the responsible person, in which case the metering installation and possibly a portion of the metering asset cost cannot be recovered.

Accordingly, under the NER, DBs need to obtain agreement from all licensed retailers to undertake an accelerated mass market roll out of smart meters. However, all the indications are that, without significant government intervention, and most likely a mandate, agreement from all retailers is not feasible.

Once the issue of responsibility for deployment and ongoing meter data settlement is formed into a robust metrology framework, the existing framework for the economic regulation of DB services is sufficient to manage the increased costs to DBs related to implementing smart metering. This is provided networks are able to fully recover their costs.

The NERA report justifies the application of a mandatory requirement for the smart meter roll out on the basis of a 'market failure'. This arises because no stakeholder in the electricity supply chain can capture all of the benefits of the smart meter roll out. This is one reason why DBs are unlikely to have a business case for investing in smart meters unless there are full cost recovery provisions in regulation.

The recently released Garnaut Review Discussion Paper mentions that one use for carbon permit revenues acquired under by Government under the AETS is to fund 'payments to firms to correct market failures in relation to new technologies'[1] Further, as the smart meter roll out has as its third principle objective the abatement of greenhouse gases, there is a 'public goods' case for direct government funding.

Recommendations

4. Consistent with the national cost benefit study, the MCE to direct an amendment of the NER to extend the exclusive role distributors currently play in relation to Type 5 and 6 metering installations to also apply to smart meter provision and related services for small customers to provide for regulatory certainty.

4.4 Jurisdictional outcomes

The NERA report outcomes differ widely between jurisdictions. While ENA has strong reservations about the absolute numbers the relative outcomes are instructive. NSW, Queensland and Western Australia show indicative results in support of smart meter roll out. However, a more equivocal outcome applies to South Australia, ACT, NT and Tasmania. On the basis of the results the NERA report concludes that:

> These results suggest that a national mandatory roll out may not be justified in all jurisdictions.

ENA Position

ENA's view is that smart meter roll out should only apply where there is a clear business case underpinning the decision to go ahead. Where this is not the case it should be up to the State/Territory jurisdiction to make the decision taking into account any assistance that may be forthcoming from the national Government to support a national roll out policy.

For example, in jurisdictions where the NERA analysis was ambivalent about the net benefits of smart meters there may be a case for preferring direct load control (Scenario 3). Trials in these jurisdictions could be done to remove ambiguity about the relative merits of Scenario 1 versus Scenario 3, the direct load control option. On the basis of the outcomes Government could make an informed decision on whether overtime, a net positive business case may be realised or alternative options identified.

[1] Garnaut Climate Change Review, *Emissions Trading Scheme Discussion Paper*, March 08, p59.

Recommendations

5. The MCE, in consultation with State/Territory stakeholders, to consider undertaking alternative pilot programs where a clear case for smart meter implementation does not presently exist with a view to assessing over time whether a net positive business case may be realised or alternative options identified.

5. Process going forward

ENA believes that the MCE should commit to a timely and efficient exclusive distributor led national smart meter roll out where a business case can be made taking into account incentives that need to be provided. At the same time the MCE should make a clear decision in relation to minimum technical specifications.

Further steps in the national smart meter roll out would include:

1. Announcement of a clear mandate for a timely and efficient smart meter roll out except in those regions/jurisdictions where further analysis is required to determine the existence of net benefits.
2. As part of this process industry would initiate coordinated trials with recovery of the full costs of the trials that will allow for a full appreciation and assessment of the appropriate technology, business processes and impacts on customers.
3. In parallel with the aforementioned trials the MCE should initiate amendments to the legal and regulatory framework to give distributors exclusive responsibility for smart meters and other measures to support smart meter deployment including data settlement services. This framework should be based on the following principles:
    - Industry to have responsibility for the development of detailed functional specifications and performance.
    - The establishment of a robust legal and regulatory framework which includes the ability for jurisdictional variation, clear timeframes and targets for smart meter delivery.

Recommendations

6. MCE to proceed with an efficient and exclusive distributor led smart meter roll out provided full cost recovery can be established.

6. Conclusions

ENA recognises that the case in favour of DB exclusivity is intimately linked to the case for government intervention in the form of a national mandate for the deployment of smart metering. ENA considers that such a mandate is necessary to address potential deadlocks arising as a result of the disaggregated structure of the energy sector. Extension of the exclusive role distributors currently play in relation to Type 5 and Type 6 metering installation is to also apply to smart meter provision and related services for small customers in the NER is an essential prerequisite.

Notwithstanding the above ENA also notes that a national mandatory roll out cannot proceed in regions where the costs do not clearly outweigh the benefits and where a business case does not exist for DB's to proceed with a roll out. These areas have been identified in the NERA CBA. They will need to be carved out of any initial national smart meter roll out with the decision to proceed pending the outcome of pilot projects and further Government consideration.

ENA has provided recommendations in this submission to address the challenges so that a distribution led national smart meter roll out can occur with minimal delay. These recommendation and comments were formulated to address the high level principles associated with the decision supporting a mandatory national smart meter roll out. More detailed analysis and comment on the costs and benefits provided in the consultants reports are being provided to the MCE in separate submissions by ENA member companies.