



SMART METERS COST BENEFIT ANALYSIS PHASE 1 REPORT

ENA Submission

5 November 2007

Key messages

1. The cost benefit analysis process has occurred over a very short period of time, limiting the amount of detailed analysis that can be meaningfully offered by stakeholders.
2. The assumptions behind the rollout scenarios are a key input to phase 2 of the process. The scenario descriptions and assumptions in the report give rise to serious concerns that phase 2 of the cost benefit analysis will be conducted on the basis of unsupported and flawed assumptions. These assumptions must be corrected in the final analysis.
3. Much of the analysis in phase 2 will have implications for the achievement of the rollout objectives. It is therefore critically important that the methodology and assumptions adopted in the draft Overview report do not limit the ability to consider the scope for the scenarios to meet the rollout objectives.

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 1* draft Overview report, released by the Ministerial Council on Energy (MCE) Standing Committee of Officials (SCO) in October 2007.

ENA considers that the phase 1 report contains key errors in the assumptions used as part of the analysis that lead to potential biases in the analysis in phase 2. These incorrect assumptions relate to:

- the scope for competition or competitive tendering inherent in the distributor-led rollout scenario compared to the retailer-led scenario
- the level of competition in the meter provision, meter data services market
- the risk of meter churn under the retailer-led rollout scenario, and
- the assertion that cost saving incentives would be relatively lower under a regulated distributor-led smart meter rollout than under other scenarios.

The accumulated impact of the above assumptions would be to load the distributor-led scenario with larger meter service costs relative to alternative scenarios. This outcome cannot be justified in the absence of a comprehensive assessment of

competition in meter and meter data service provisioning. On this basis, ENA considers that the analysis in phase 2 should not include assumptions over the relative cost pressures provided through competition, compared to regulated pricing. The analysis should instead focus on areas where clear conclusions can be drawn in comparing the retailer and distributor-led scenarios, such as economies of scale, meter churn and cost recovery frameworks.

2. Background

This submission responds to the Draft *Cost Benefit Analysis of Smart Metering and Direct Load Control: Phase 1* reports, released by the Ministerial Council on Energy (MCE) Standing Committee of Officials (SCO) on 4 October 2007.

This submission focuses on the analysis methodology and assumptions, and how these influence the characterisation of the rollout scenarios. In an attachment to this submission, some of the specific functionalities considered in the phase 1 report are discussed in more detail, to assist the consultants in the analysis of these specific functionalities.

ENA is the national representative body for gas and electricity distribution network businesses. Energy network businesses deliver electricity and gas to over 12 million homes and businesses 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. General approach to smart meter cost-benefit analysis

Time available for analysis and consultation

The Council of Australian Government (COAG) has set a very tight deadline for the conduct of the cost benefit analysis for the rollout of smart meters. This deadline has meant that there has been only limited time for stakeholders to engage in this phase 1 analysis process, including very limited time and opportunities to:

- contribute to and comment on the development of the analysis methodology in phase 1
- provide detailed information to the consultants to assist in the analysis, with no opportunity to review and refine information provided, and
- review the phase 1 report, including provide input and comments on the methodology and approach to inform the conduct of phase 2 of the analysis.

The lack of time available in this consultation process, in particular considering the length and complexity of the papers released for consultation, limits the ability of distribution businesses to meaningfully engage in this phase 1 consultation process. This is exacerbated by the overlapping timetables for responding to the phase 1 report, and fulfilling detailed requests for information for phase 2 of the analysis.

This consultation process and the information gathering process for phase 2 of the national cost benefit analysis also overlaps with other state and national processes. In Victoria, distribution businesses are also required to lodge with the Victorian Essential Services Commission (ESC) their pricing proposals for recovery of costs associated with their obligations to rollout advanced metering infrastructure to all customers. These submissions are required to be made by the 31 December 2007. Understandably, Victorian distributors have limited ability to provide detailed input to the phase 2 process in advance of finalising their submissions to the ESC. In addition, New South Wales and Queensland businesses are preparing for their upcoming price determinations under the Australian Energy Regulator.

Process for finalisation of phase 1 report

ENA understands that the consultation on the phase 1 report will be considered by the Smart Meters Working Group (SMWG), who will then develop recommendations for further consideration of the SCO and the MCE. This is in addition to development by the consultants of a final phase 1 report which also takes account of submissions, to be released with the phase 2 findings for public consultation.

It is unclear whether the SMWG policy consideration of the draft phase 1 report and submissions will inform the consultants in finalising the phase 1 report. This issue has implications for the policy status of the phase 1 final report to be released in late December, as well as the assumptions included in the draft Overview report that will carry over to the phase 2 analysis.

ENA seeks clarification on the relationship between the SMWG consideration of issues and its development of recommendations for SCO and the MCE, and the work of the consultants in developing a final draft of the phase 1 report.

Relationship between phase 1 and phase 2 analysis

The draft Overview report contains considerable information on the methodology and approach adopted by the consultants in respect of the analysis in phase 1, as well as the intended methodology and approach for phase 2.

It is critically important that the methodology and approach used for the analysis in both phase 1 and phase 2, including any assumptions made by the consultants, are appropriate and reflect market realities.

ENA considers that the framework and methodology, including assumptions, should have been subject to stakeholder consultation before the development of this phase 1 report, as they have critical implications for the conduct of both phases of the analysis. As it is, it is unclear how stakeholder feedback on the approach, methodology and assumptions outlined in the phase 1 draft report can or will be incorporated into the phase 2 analysis. The overlapping timetable for consultation on the phase 1 report, while consultants are developing their phase 2 recommendations, appears to limit any scope for stakeholder consultation to secure any meaningful changes to the consultants' methodology for phase 2.

Significant flaws in methodology that require addressing

The lack of clarity outlined above is of particular concern as ENA has identified some significant flaws in the consultants' methodology and approach. This has led to the adoption of scenario assumptions based on erroneous assertions rather than sound analysis. If these assumptions are not rectified, the analysis conclusions will be flawed.

ENA's assessment of the flaws in the assumptions is outlined in Section 4 of this submission.

ENA seeks urgent clarification that the flaws in the scenario assumptions will be rectified in the framework and methodology, and assurance that these flaws will not be repeated in the phase 1 final report, or analysis in phase 2.

4. Consultants' approach and methodology

Characterisation of scenarios for the cost benefit analysis

Development of scenarios for analysis

In the pre-analysis phase, ENA was a key contributor to the development of the scenarios currently under consideration, through the Smart Meter Stakeholder Working Group (SMSWG). In particular, ENA was centrally involved in the development of the descriptions of scenario 1, the distributor-led scenario, and scenario 3, the remote load control scenario.

ENA understands that the SMWG provided the scenarios to the consultants as an input to the analysis, in the form circulated to key contributors with the first requests for information for phase 1.

Development of functionalities and performance levels for analysis

ENA was also a key contributor to the development of the smart meter functionality list, and performance levels chosen for analysis. The performance levels tested under the cost benefit analysis were selected to test the sensitivity of the costs (and benefits) to different performance levels under the relevant functionalities. As such, they were selected as possible extremes of the range for potential performance levels, rather than necessarily appropriate levels for final incorporation into the minimum functionality.

ENA would be concerned if the performance levels tested under the cost benefit analysis were simply incorporated into the final decision on appropriate minimum functionalities. As the draft phase 1 report has shown, the costs and benefits of smart meters are very sensitive to the final performance levels chosen. These levels should be chosen as part of a detailed implementation plan developed in direct consultation with industry, rather than as an outcome of this analysis.

Further, it is important that the performance levels tested (and costed) under the cost benefit analysis are consistent across the meter based scenarios. There is potential for significant distortions in the outcomes where costs estimated under one scenario do not match those under another, due to a difference in the expected performance levels. This means that costs for all meter-based scenarios must also include the costs of the back-up systems, maintenance and assurance processes required to deliver against the performance levels considered under the functionalities.

Characterisation of scope for competition under the various rollout scenarios

Section 4 of the draft Overview report describes the four smart meter scenarios for analysis. These descriptions include an overview of the scope for competition in the provision of services relevant to the smart meter rollout, in particular the degree of competition in meter provision, meter installation, associated meter data services, and communications under each rollout scenario.

Specifically, the draft overview report describes Scenario 1, the distributor-led rollout scenario as:

where each distribution network service provider is given the responsibility for owning and installing meters and associated metering data services within its area of operations and there is no scope for competition provision of these services.¹

The key distinction between this scenario [distributor-led rollout scenario 1] and the remaining smart meter scenarios is that it assumes that there is no competition in the provision of metering and related data management services...There would remain competition in meter manufacturing.²

The draft Overview report then describes scenario 2, the retailer-led rollout scenario as:

where retailers have responsibility for procuring the installation of smart meters and data management services within a competitive market for these services.³

The key feature of the retailer-led scenario is the scope for competitive provision of communications and data management services, and metering provision within an area of operations...⁴

The retailer-led scenario therefore assumes that there is a competitive meter provision market and market for meter data services.⁵

Therefore, as a basis for analysis, the consultants have assumed differences in the scope for competition in meter procurement, meter installation, associated meter data services, and communications under each rollout scenario, on the basis of differences in the allocation of the *Responsible Person* for the rollout.

Implication of competition assumption on scope for cost savings under the various rollout scenarios

While formulating its 'no competition' assumption under scenario 1 the report acknowledges that:

- Phase 1 of the Overview report did not include an analysis of the likelihood of competition in metering provision and that it will not be subject to a study under Phase 2, as feasibility of competition is beyond the scope of the study;⁶ and
- The report authors were asked to assume that meters are owned by distributors while noting in footnote 26 that it is possible to allow for competition in the provisioning of metering within the distributor rollout.⁷

¹ NERA Economic Consulting, *Draft Cost Benefit Analysis of Smart Metering and Direct Load Control: Phase 1 Overview Report*, 17 September 2007, pg. 24.

² NERA Economic Consulting, *Draft Phase 1 Overview Report*, pg. 28.

³ NERA Economic Consulting, *Draft Phase 1 Overview Report*, pg. 24.

⁴ NERA Economic Consulting, *Draft Phase 1 Overview Report*, pg. 29.

⁵ NERA Economic Consulting, *Draft Phase 1 Overview Report*, pg. 29.

⁶ NERA Economic Consulting, *Draft Phase 1 Overview Report*, pg. 34.

⁷ NERA Economic Consulting, *Draft Phase 1 Overview Report*, pg. 34.

The report acknowledges the primary role of assumptions about competition in any cost benefit analysis of smart meter rollout, noting that the degree of competition may lower the cost for the provision of meters.⁸ Further, the report identifies the key question as:

...how do costs vary between meter provision, where cost reduction incentives are created through a regulated framework, compared with cost reduction incentives through the competitive market.⁹

ENA Response

ENA is concerned that the draft Overview report has, on the basis of assertion rather than considered analysis, accepted that distribution businesses working within a regulatory framework have little incentive to adopt cost savings in the delivery of smart meter services. This view is stated in Appendix F of the report:

In the absence of competition pressure, and particularly where the costs of the rollout are likely to be included in regulated tariffs, the regulatory incentives on distributors to seek cost savings in the rollout process are likely to be low.¹⁰

ENA considers that this assumption is not justifiable.

The following sections outline why it is not justifiable to assume that:

- competition pressures would be relatively lower under the distributor-led scenario 1, or
- that cost saving incentives are lower in a regulated market.

Comparative competition pressures under scenarios 1 and 2

The assumption in the draft Overview paper that competition for meter service provision would not occur in distributor-led scenario 1, but would occur in retailer-led scenario 2 stems in part from a misunderstanding of the difference between the legal designation of the “Responsible Person” under the *National Electricity Rules*, and the physical provision of services. The draft Overview report assumes that the allocation of legal responsibility to retailers has different implications for the scope of potential procurement of metering services options available to retailers than the same responsibility given to distributors. This is not the case.

The legal implications of allocating either distributors or retailers the role of *Responsible Person* are identical. There is no necessary difference in the scope for either sector to contract with others to deliver those services. The only area of difference comes in the opportunities that may be available to distributors, compared to retailers, to recover the costs of providing services, or to use existing infrastructure to provide services.

⁸ NERA Economic Consulting, *Draft Phase 1 Overview Report*, pg. 34.

⁹ NERA Economic Consulting, *Draft Phase 1 Overview Report*, pg. 166.

¹⁰ NERA Economic Consulting, *Draft Phase 1 Overview Report*, pg. 165.

The designation of *Responsible Person* under the *Rules* represents the allocation of legal responsibility for service provision. Where a party is the *Responsible Person*, that party must ensure that meter and meter data services are provided to a particular set of customers in accordance with relevant legislation and *Rules*. This responsibility does not, however, equate to a responsibility for that party to provide all the services itself. It must only ensure that those services are provided to relevant customers, with ultimate legal responsibility where these services are not provided, or do not meet acceptable standards. Distribution businesses, where they are the *Responsible Person*, will source activities within the meter provider role to achieve the best outcomes under the *Rules*. As they are incentivised to minimise costs, this means that distribution businesses will look for the most efficient option, which may be internal service provision.

Therefore, the characterisation of differences between scenarios 1 and 2 in table 4.1 of the draft Overview report, in describing the *Scope for competition in meter service provision to retailers*, is incorrect. Under both scenarios, either the retailer or the distributor (depending on who is the *Responsible Person*) is “responsible for appointing a meter provider and meter data manager, which can be themselves.”¹¹

The assumption under scenario 1 that distributors will always be the meter provider and meter data manager where it is the *Responsible Person* is also inaccurate in practice. It does not reflect much of the current practice where the distributor is the *Responsible Person* for type 1-4 meters.

Continuing these incorrect assumptions over the scope for competition for meter provision and meter data services in the phase 2 analysis would introduce an unwarranted bias into the scenario analysis which would not occur in practice.

It would have the effect of distorting the analysis outcomes, by skewing the analysis towards a retailer-led rollout. It is also inconsistent with the scenario descriptions provided to the consultants by government officials at the start of the analysis.¹²

ENA therefore considers that there is scope for contestability under both the distributor-led and retailer-led scenarios. The extent to which this scope for contestability leads to cost savings from competition, is considered in the following section.

Cost saving incentives under the regulated rollout model

There is no evidence to support the assumption that a distributor-led rollout supported by regulated cost recovery would necessarily lead to lower incentives for cost minimisation and therefore higher rollout costs. Similarly, there is no reason to think that a retailer-led rollout, characterised in the draft Overview report as a competitive rollout, will lead to lower cost meter provision. The assumption in the

¹¹ NERA Economic Consulting, *Draft Phase 1 Overview Report*, pg. 26.

¹² Smart Meter Work Group Final Scenario Definitions, Scenario 1 – Smart Meter rollout – Distributor-led, 29 July 2007.

draft Overview report is based on there being a competitive market for meter provision, which has not been determined.

The underlying incentives to pursue the most efficient options to deliver regulatory requirements are part of the fundamental regulatory structure. Central to these incentives is the *ex ante* regulatory approach, which allows network businesses to retain for a period the benefits arising from the operating and capital efficiencies they achieve, after which the benefits pass through to customers. This approach is considered to offer strong incentives for efficient network service delivery, such as not to require *ex poste* prudency review of expenditure. This regulatory approach has proved successful and has delivered considerable operational and capital efficiency benefits to customers.

This incentive based approach has been formalised in clause 6.2.6 of the new *National Electricity Rules* to apply to network business. The purpose of the approach is to reproduce, to the extent possible, the production and pricing outcomes that would occur in a workably competitive market in circumstances where the development of a competitive market is not economically feasible. In assuming that the regulatory incentives for cost savings are likely to be low due to the absence of competitive pressures, the draft Overview report is asserting that the incentive based approach under the *Rules* does not achieve its goals. This position is unacceptable in the absence of substantive evidence that the regulatory incentives on distributors do not lead to incentives for cost efficiency.

If there is not sufficient competition in the meter provision and meter data services markets, retailers are likely to face inefficient costs in procuring services, which will be passed on to customers. In this case, a distributor-led rollout approach, where costs are overseen by the regulator, is likely to be the lower cost option.

Distributor experience to date suggests that there is very little evidence of competition in the meter provision and meter data services market to support this assumption, and large scale meter provision other than by distributors, is to date unproven.

It is therefore inappropriate to conclude in the draft Overview report, on the basis of assumption, that:

The competitive supply of smart meters, all other things being equal, would be expected to result in lower cost of meter provision.¹³

Over the longer term, the regulated framework allows for lower capital recovery cost risks provided under the distributor-led rollout approach, as well as scope for longer term capital recovery. This is likely to lead to reduced costs compared to a retailer-led rollout scenario where the threat posed by customer switching between retailers, and the consequent problem of meter churn, increases the need for faster capital recovery.

¹³ NERA Economic Consulting, *Draft Phase 1 Overview Report*, pp. 165-6

In depth scrutiny of distributor capital and operating expenditure proposals is also a normal part of the regulatory process, as is analysis of any contracting arrangements. With the passage of the new *National Electricity Law*, this analysis is supported by even more extensive information gathering powers for the regulator.

It is therefore unacceptable for the consultants to arrive at the conclusion, on the basis of no analysis or evidence, that:

To the extent that competition was, or was unlikely to become effective, it may warrant continuing a mixture of regulation and competitive provision during a transitional phase.¹⁴

Before reaching conclusions on any hybrid or compromise model between a regulated or competitive meter rollout, ENA is firmly of the view that the consultants should undertake at least *some* analysis of the level of competition in the meter provision and meter data service market to support their conclusions.

Relationship between the cost benefit analysis and the rollout objectives

An important part of the cost benefit analysis is a consideration of the scope and degree to which the various rollout scenarios can meet the rollout objectives. The rollout objectives, as determined by the SMWG in the terms of reference for the cost benefit analysis, includes the promotion of competition in electricity retail markets.

The 2004 *Joint Jurisdictional Review of Metrology Procedures (Jurisdictional review)* identified the key interaction between competitive meter service provision and retail market competition. The report from the *Jurisdictional Review*, noted:

...the costs or benefits to customers of a small change in the effectiveness of retail competition may be greater than the costs or benefits to customers associated with the introduction of retailer choice of Responsible Person for metering services.¹⁵

It is therefore important that phase 2 of the cost benefit analysis consider the potentially different impacts that the scenarios may have on the achievement of the rollout objectives. This is particularly relevant when considering the issues of meter churn and the availability of economics of scale for smaller retailers. Each of these issues is discussed below.

Impact of meter churn on retail market competition

A key consideration in comparing the scenario options is to assess whether the benefits of competitive arrangements for meter provision are likely to be greater than the costs. The *Jurisdictional review* noted the possibility that competition in metering services might reduce the scope for competition in the primary retail market, making

¹⁴ NERA Economic Consulting, *Draft Phase 1 Overview Report*, pp. 166.

¹⁵ Essential Services Commission (Victoria), Essential Services Commission of South Australia, Independent Competition and Regulatory Commission (ACT), Independent Pricing and Regulatory Tribunal (NSW), Office of the Tasmanian Energy Regulator and the Queensland Competition Authority, *Joint Jurisdictional Review of Metrology Procedures: Final Report*, October 2004, pg. 48.

the costs greater than the benefits.¹⁶ This concern was also identified in Appendix F of the draft Overview paper.

ENA is concerned that the assumptions adopted by the consultants in describing scenario 2 do not allow an accurate analysis of the effect of a retailer-led rollout on electricity retail competition.

The description of scenario 2 in the draft Overview paper assumes that competitive meter provision does not impede competition in the end-use market by retailers.¹⁷ This is because the consultants assume that there are options for retailers to avoid this outcome, including through agreements between providers to minimise meter churn. Putting aside the potential implications that such arrangements could have for compliance with the *Trade Practices Act 1974*, there is little evidence in practice that retailers and meter service providers would have an incentive to enter into such agreements. It is also difficult to understand how a meter market where there is no meter churn could adequately be described as a competitive market.

Simply assuming that the potentially significant issue of meter churn will be resolved through undefined means is inappropriate and undermines the integrity of the cost benefit analysis. It would significantly distort the analysis outcomes if the potential effect of meter churn were simply assumed away. Meter churn has the potential to act as a barrier to customer switching, tending to advantage the incumbent retailer.

It is therefore essential that the cost benefit analysis include an assessment of the scope and practicality of arrangements required to avoid barriers to competition in the electricity retail market, such as meter churn, and the realistic incentives that providers and retailers may have to enter into agreements of this type.

Differential scope for cost efficiencies available to large and small retailers

Another area of concern is the scope for economies of scale in meter provision. The draft Overview report correctly identifies that economies of scale in meter provision are likely to lead to a reduction in the overall costs of a rollout. These economies of scale are available to distributors, and to a lesser extent, large retailers. The reduction in economies of scale available to large retailers occurs due to the fact that they cannot conduct a purely house to house rollout strategy, and there is likely to be an inefficient duplication of assets leading to higher costs compared to the distributor-led scenario. ENA expects that this difference will be picked up in the analysis of the relative costs of the rollout scenarios.

A retailer-led smart meter rollout would create barriers to entry for new retailers and prejudice existing small retailers by virtue of economies of scale. The existence of economies of scale mean that smaller retailers would not have as many opportunities to achieve cost efficiencies in procurement and rollout strategies, which will reduce their ability to compete with larger retailers. It is therefore not valid to assume, as the draft Overview report does, that:

¹⁶ *Joint Jurisdictional Review of Metrology Procedures: Final Report*, October 2004, pg. 43.

¹⁷ NERA Economic Consulting, *Draft Phase 1 Overview Report*, pp. 28.

Because all retailers would be required to rollout meters to their customers, it should not impact adversely on end-customer price competition amongst existing retailers.¹⁸

This differential impact on retailer competition may not be a problem if the analysis on the rollout of smart meters was only concerned with the most efficient rollout approach, independent of other market issues. However, as mentioned above, the rollout scenarios must also be assessed with reference to the rollout objectives, which include promoting competition in electricity retail markets.

Conducting the analysis with reference to the rollout objectives might lead to the conclusion that it is desirable to achieve *both* economies of scale and retailer competition by choosing a distributor-led rollout. This conclusion might not be reached, however, if the analysis is undertaken in isolation to the rollout objectives.

¹⁸ NERA Economic Consulting, *Draft Phase 1 Overview Report*, pg. 28.

5. Conclusion

ENA supports the acknowledgement in the draft Overview report of the primary role of assumptions about competition in any cost benefit analysis of smart meter rollout where it states that:

Any assessment of the benefits from metering competition would need to be balanced against the scope for metering market participants to exert monopoly power and thereby lead to higher costs.¹⁹

The report then acknowledges that the analysis of mandatory meter rollout under Phase 1 does not include an analysis of the likelihood of competition developing in meter provision. However, the report nevertheless assumes that under the distributor-led smart meter rollout scenario competition is absent in the provisioning of metering and related data management services. By contrast competition is assumed for the retailer-led smart meter rollout, where it is expected to provide pressure for the reduction of costs related to the provision of services. ENA finds no justification for these assumptions which will have a fundamental bearing on the outcomes of the cost benefit analysis in phase 2.

The draft report acknowledges that the consultants were asked to assume that the meters are owned by distributors within the distributor-led rollout scenario. Within this constraint, it is possible for contestability and competition in the provision of metering and meter data services to distributors, as noted in the draft report.

In fact we would argue that the use of third party meter providers and meter data aggregators providing these services for distributors is possible under both a retailer or distributor-led rollout. Yet the draft Overview report only applies this option to the retailer-led rollout.

Further, the retailer-led scenario assumes that it is feasible to facilitate transfer of customers between retailers such that it does not impede competition in end use markets. ENA does not agree that the barriers to competition imposed by meter churn can simply be assumed away.

It is not clear to us how the differences in scenario assumptions outlined above have influenced on the outcomes of the Phase 1 cost benefit analysis. However, we note that in Phase 2 the consultants will form a view as to the likely effect of competition in metering provision and how this might have an impact on the costs and benefits of the distributor and retailer-led scenarios. The report goes on to state that the competition assumption will not be subject to assessment stating that:

The issue of the feasibility of competition in the meter provision...is beyond the scope of this study but warrants further investigation.²⁰

¹⁹ NERA Economic Consulting, *Draft Phase 1 Overview Report*, pg. 166.

²⁰ NERA Economic Consulting, *Draft Phase 1 Overview Report*, pg. 166.

Notwithstanding the above, ENA is concerned that the authors have explicitly accepted the assumption that regulatory incentives on distributors to seek cost savings are likely to be low. ENA strongly disagrees with this assertion.

Under current regulations, network businesses are provided with incentives for cost reductions through an *ex ante* regulatory approach which allows distribution businesses to access the benefits arising from cost efficiencies for a period of time, before they are passed on to customers. Further, during the expected longer term regulated cost recovery phase the distributor is insulated from pressures to seek early cost recovery. This is expected to lead to lower costs to customers relative to what would occur under a retailer-led rollout. This occurs because retailers are exposed to accelerated cost recovery pressures given the ongoing threat that customers may switch to an alternative retailer.

Ultimately we agree with the sentiment expressed in the draft Overview paper where it is conceded that:

Unfortunately, it is more difficult to determine by how much competition might be expected to lower these costs.²¹

On this basis, ENA considers that the analysis in phase 2 should not include assumptions over the relative cost pressures provided through competition, compared to regulated pricing. The analysis should instead focus on areas where clear conclusions can be drawn in comparing the retailer and distributor-led scenarios. These areas include, *inter alia*:

- Scope for economies of scale under the different scenarios
- Scope for distributors to use existing infrastructure to deliver metering and communications services
- Differential impact of economies of scale on small retailers under the retailer-led rollout scenario
- Incentives for accelerated cost recovery under a retailer-led rollout compared to a distributor-led rollout, and the impact this would have on costs for customers, and
- Related costs of inefficient meter churn and potential impact of meter churn costs on customer charges and competition in the electricity retail market.

These issues will have a real bearing on the final costs faced by customers under the various rollout scenarios, and require detailed analysis, rather than reliance on assumptions and economic theory.

Any alternative to this outcome would mean the cost benefit analysis would be based on unsupported and implausible assumptions that would bias the outcomes of the final cost benefit analysis. This would undermine the COAG and MCE intent to

²¹ NERA Economic Consulting, *Draft Phase 1 Overview Report*, pg. 166.

conduct a genuine cost benefit analysis to determine the most appropriate and efficient rollout scenario and approach.

Analysis of specific functionalities

Introduction

This attachment includes a discussion of some of the specific functionalities considered in the phase 1 report. It highlights some areas of concern in the analysis, and inconsistencies in approach between different functionalities. This detailed discussion is intended to assist in clarifying the costs and benefits under consideration in the phase 1 report.

Remote daily reading (functionality 9)

The analysis of the remote daily reading functionality concludes that the costs of including the functionality in the meter is low, however the systems investment necessary to take advantage of the capability could, in the higher cost band, outweigh the benefits. This leads the consultants to recommend that the functionality be included in the meter, but allow retailers to decide to invest in systems on the basis of their own business case. The analysis also assumes that distributors would have no incentive to voluntarily invest in the required meter data communications management and meter transactions management systems to support this functionality.

ENA is concerned to ensure that there is parity of consideration of this functionality between the retailer and distributor-led rollout scenarios. It would not be acceptable to assume no (or private) investment in backend systems for individual retailers, and then include the cost of backend systems in the distributor-led rollout scenario on the basis that distributors have no incentive to invest in this functionality otherwise.

ENA recommends that all scenarios should include the same assumptions for investment in backend systems where the functionality is included in minimum functionality.

Remote connect/disconnect (functionality 12)

The analysis recommends that the remote connect/disconnect functionality be included in the minimum functionality for meters, with a performance level equivalent to Case B. As noted in Appendix A of the Overview paper, Case B appears to require high speed communication capabilities. The consideration of costs of this functionality assumes that high speed communications are otherwise justified (by allocating no incremental costs for communications infrastructure).

This conclusion raises the question of how decisions over incremental functionalities will influence decisions over the communications infrastructure needed for the core functionality and vice versa.

ENA seeks clarification on whether the analysis of the core functionality will influence conclusions reached for this functionality, particularly if the analysis of the core functionality concludes that lower speed communications are appropriate.

This is particularly important when considering appropriate alignment between the Victorian and national meter functionalities and performance levels.

Interface with other load control devices (functionality 15) and Interface to home area network using open standard (functionality 16)

ENA has some concerns with the description of functionality 15, and areas of differentiation of this functionality compared to the provision of an interface with a home area network (functionality 16). ENA considers that some of the assumptions under functionality 15 do not reflect current practice and standardisation efforts, and require amendment.

The description of functionality 15 includes a number of assumptions over the nature of the proposed interface between the meter and load control devices. These assumptions are that:

- the interface in the appliance would need to communicate directly with the smart metering communications infrastructure, instead of being routed through the meter, and
- the device installed on air conditioners and other high energy use appliances to allow remote load control must be able to operate on the basis of whatever smart metering communications technology and protocols are in place in the region, and these will largely be proprietary systems.

Both of these assumptions are unnecessary for the characterisation of this functionality, and do not reflect the current standardisation work being undertaken in this area through Standards Australia.

ENA is involved in this standards development process, by chairing this process and providing several network business members on the relevant committee developing the standards. The current work of the committee is in developing standards for both a demand response enabling device (DRED) and the demand response capability in the relevant appliance (for example, an air conditioner). Depending on the configuration adopted, the DRED can be located in the appliance and incorporate the demand response capability, or can be located elsewhere.

As ENA understands it, functionality 15 is akin to the second case, where the DRED is located in the meter, with a remote interface to the appliance that includes a direct load control capacity.

The standards development process is looking to ensure that the interface between the DRED and the appliance is on the basis of an open standard. One of the communications approaches under consideration is a Zigbee interface. It is likely that other options for this interface will also be enabled.

This means that both of the assumptions noted above for functionality 15 are unrealistic when considering the practical application of the current standardisation process.

Instead, functionality 15 should be considered on the basis of a direct communications interface with the DRED in the meter, using whatever smart metering infrastructure communications technology and protocols are in place in the region. This means that the appliance itself does not need to communicate directly with the smart metering communications infrastructure, but instead it must communicate with the DRED.

Further, the second assumption above is likely to be incorrect as the interface between the DRED and the appliance is also intended to be standardised through the Australian Standards process, and is very likely to be based on an open standard (as is preferred in any Standards development process). Appliances therefore will not need to communicate with proprietary systems, meaning their application is unlikely to be limited by their compatibility with the communications infrastructure available in the region.

This means that the interface to the appliance can be very similar to the interface with the home area network. The cost of this functionality is therefore likely to be similar to providing an interface to a simple In Home Display (IHD), for instance a traffic light IHD. Where the capability to interface with an IHD is included in the base functionality (as is being considered in functionality 16), providing for direct load control of appliances is expected to be at zero incremental cost.

The difference between functionalities 15 and 16 (putting aside the new case C analysis) is then any differences between a relatively simple home area network (that is able to provide simple on/off type signals to high load appliances) and any additional costs/benefits from a home area network that might also interface with an IHD. Additional costs of the interface under functionality 16 are likely to be small if the IHD is a simple traffic light type device, but will be higher if the IHD has more advanced capabilities.

Interface to home area network using open standard - case C (functionality 16)

The consultants have introduced a new case for analysis under functionality 16. The case is the provision of a “smart thermostat” that is able to change the temperature setting of new and existing air conditioners. Gaining this functionality for existing air conditioners would require a site visit to retrofit the capability.

ENA is familiar with the capability discussed in this case C, but considers it is not appropriate for consideration as part of functionality 16.

Both functionality 15 and 16 consider the potential costs and benefits of including an interface in the smart meter for remote load control of *future* appliances that have built into them a capacity to respond to a remote signal. This analysis has been intentionally separated from consideration of scenario 3, where *current* appliances are retrofitted with a load control capacity.

The installation of thermistors (the Case C option) is part of the current trials in retrofitting inverter air conditioners with direct load control capacity. As such, they are intended to be included in the definition of “installation of simple switch receivers *as appropriate* on air conditioners” as described in scenario 3.

There are also some practical issues in using thermistors for remote load control that will limit their use in the future. Thermistors were adopted as part of the current direct load control trials to assist in controlling “new generation” inverter air conditioners, where switching the compressor was not a viable option as air conditioner system diagnostics interpreted the remote switching as a fault. The use of thermistors represented an effective “work around” for this problem.

Despite the use of thermistors in this way in controlling legacy appliances, temperature control is unlikely to be a preferred demand management approach for new appliances that have built in demand response capabilities. This is because changing the temperature set point is only a proxy for lowering the air conditioner demand in these air conditioners.

An alternative (and more effective approach) for these types of air conditioners in the future is likely to involve limiting the maximum demand, where, in a load control event, the air conditioner manages its compressor cycling to stay below a specified maximum demand. This capacity is expected to be built into these air conditioners in response to the current standardisation process, and will operate in a market that also includes air conditioners that employ a compressor switching approach. Both of these load control approaches would be achieved through the interaction of the DRED and the capability of the appliance, as outlined above.

Open standards and interoperability (functionalities 23 and 24)

A key assumption in the retailer-led rollout scenario is that customer transfer can occur without meter churn through agreement.²² As noted in the body of this submission, this type of approach has not been the practice in the 1-4 meter type market where such arrangements have possible for a significant period of time. This is particularly important as the assumption over meter churn has clear implications for the costs and benefits of pursuing open standards and device interoperability. This is noted in the draft Overview report where the consultants state that:

...there is considerable merit in analysing the relative costs and benefits associated with providing open standards and interoperability of meters and back-end metering infrastructure, as this can facilitate cost differences between the retailer-led and distributor-led scenarios.²³

This would not be the case where meter churn were not a concern.

²² NERA Economic Consulting, *Draft Phase 1 Overview Report*, pg. 30.

²³ NERA Economic Consulting, *Draft Phase 1 Overview Report*, pg. 35.

ENA urges the consultants to give further consideration to the case for open standards and interoperability in their final phase 1 report, in light of meter churn issues under the retailer-led rollout scenario.

In addition, the potential benefits of interoperability for the party responsible for the rollout should also be considered. There is considerable scope for inefficiency where, following procurement of services, the *Responsible Person* is locked into proprietary systems where there is no vendor product flexibility without complete system replication. This is effectively an unregulated monopoly. This outcome has the potential to significantly increase costs for customers and should be part of the analysis.

Other items for consideration

Stream 2: Network benefits and recurring costs

This part of the cost benefit analysis makes an assessment of what it refers to as “network benefits”.

It is expected that efficiency benefits achieved by distribution businesses, in either operational or capital expenditure, will be passed through to customers through the normal operation of efficiency benefit sharing schemes under the regulatory regime. For example, to the extent that smart meters slow the demand for network capacity, this will be reflected in regulatory asset bases and the benefits pass to the customers in lower network tariffs.

Similarly, a number of the benefits identified are currently defined as excluded services, for example import/export metering. Where this is the case, the savings are more appropriately attributable to customers, as opposed to the distribution business, as the charges avoided are for excluded services which are charged directly to the customer concerned.

These benefits should not be interpreted as benefits that accrue to the network businesses. Therefore any attempt to attribute the full value of expected savings to distribution businesses under the cost benefit analysis should be treated with caution.