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Country Energy	Minimum functionality	1	Minimum functionality needs to be further reviewed by the technical working group in conjunction with industry trials, to conclusively prove the viability of relevant technology and validate the ability to achieve the anticipated benefits.	Noted. To be considered by the proposed industry technical working group.
		7	While Country Energy in principle supports the creation of a minimum national functionality, there is some concern in locking in a functionality that is unproven in its application.	Noted. MCE has agreed to a minimum national functionalityViability of functionalities are to be tested via smart meter pilots.
	Scenario	1	We support the distribution network business led roll-out as the preferred scenario, with exclusivity for not only the period of the roll-out but also the ongoing operation and maintenance of the smart metering infrastructure.	Noted MCE has agreed that a distributor led roll-out and exclusivity for at least the roll-out period is preferred.
	Roll-out timeframe	1	We recommend that the roll-out timeframe needs to be further reviewed in conjunction with industry pilots and technology trials. Timelines and targets should be set as part of the legal and regulatory framework, taking into account jurisdictional differences. Achievement of any timeframe will be dependent on the available technology to meet the minimum functionality requirements as well as the existence of sufficient and appropriately skilled resources to complete the change out program.	Noted. Further trials have been agreed to. Any rollout timeframes are a matter for the MCE and individual jurisdictio will
	Costs	1	Many costs remain uncertain, as no meter is currently available to meet the minimum functionality. Country Energy is also concerned to better understand certain assumptions used to estimate installation and communications costs.	Noted. Uncertainty is covered in the analysis by using cost ranges, including specific amounts as a contingency.
	Urban/rural/remote split	1	There is uncertainty regarding the breakdown of costs and benefits between the customer classifications of urban, rural and remote. Country Energy recommends validation of any assumptions through trials.	Noted. Further trials is part of the ongoing work programme for the introduction of smart metering.
	Meter useful lives	3	While Country Energy supports a 40 year life for electromechanical meters, there is some doubt over the estimated useful life of electronic meters. Country Energy has received advice from some meter manufacturers that they will only guarantee the electronic meters for 10 years.	Noted. 40 year life for accumulation meters was used for the final analysis. A 15 year life for smart meters was assumed based on EMCa's view of the useful life of an electronic meter.
	Meter stock assumption	3	The business case has not taken into account the costs associated with writing off existing meter stock, where the asset life is not yet realised. Country Energy believes that this cost should be accounted for within the business case as a relevant cost of the smart meter roll-out. Disposal of these assets is also an area of consideration.	Any accounting charge (write-off) of existing assets is not an economic cost and should not be accounted for in a CBA (N.B. that it typically would be accounted for in a regulatory determination). Disposal costs have been considered in the analysis, as was the potential salvage value. On balance the view was take that the net cost of disposal/salvage would not be material.
	Smart meter installation time	3	Country Energy believes the average installation time is understated; as such the number of installers required is likely to be higher.	Noted. There are a number of different views on installation times. Installation times were based on the experience the relevant consultants.
	VIC costs	4	Country Energy is concerned that the costs provided by Victorian distribution businesses are above the upper bound of costs estimated by EMCa within the business case.	View noted. Some Victorian distributor costs were made available to the consulting team and were taking into account in the analysis. See section 14.5, Phase 2 Transitional Cost Report.
	Communications technology	5	While Country Energy recognises that GPRS and PLC solutions appear to be cost effective, they have not yet been proven in the Australian market as such there is significant risk in relying on these theoretical costs in the business case. PLC has been determined as the most cost effective solution for rural and remote customers; however there is uncertainty that the bandwidth will be adequate to meet the smart meters functionality specification. Should PLC be found to be unsuitable to meet the minimum functionality requirements, it may be necessary to implement a higher cost communications technology for rural and remote customers.	Noted. These issues are covered in further depth in the Stream 6 Report, including through a detailed sensitivity analysis. See in particular Chapter 5, Phase 2 Transitional Cost Report.
	Avoided cost of metering	6	Meter costs by type and jurisdiction used to calculate the avoided cost of new and replacement metering appears to be overstated even on the low range within the phase 2 report. Country Energy's current price for electronic meters and electromechanical meters is below the low range provided within the report. It is also noted that the replacement rates provided for in the business case appear to be quite high compared to Country Energy's current replacement rate for meters. Replacement rate is assumed at 2.7 per cent for electromechanical meters and 7.17 per cent for electronic mete this equates to Country Energy replacing approximately 30,000 electromechanical and 20,000 electronic meters per annum. This is significantly higher than Country Energy's current business as usual replacement rate of approximately 10,000 meters per annum.	Meter costs - point noted. Need to know what meter pricing Country Energy are paying to know what level of overstatement of costs is at issue. The total number of replacement meters calculated is 25,940 across electromechanical and electronic, not 50,000 It is assumed that all replacements of single phase off peak metering where there are two meters and a relay are replaced with a two element electronic meter with ripple receiver.
	Avoided cost of meter reading	7	Costs estimated to read an accumulation meter in rural and remote areas appears to be understated. Costs range between $1.50 on low end and $3.00 on the upper end of the range. Country Energy's average cost for meter reading across the entire distribution area is approximately $1.80 per unit read; thus it would appear that the cost assigned to rural remote reads is understated.	The Country request for information submission had no distinction for meter reading costs for both rural and metropolitan areas. This was the basis for the assumptions used in the analysis.
	Avoided cost of special reads	7	It is also important to recognise that the avoided cost of special reads is likely to be understated, as the regulated charges for special reads are not always cost reflective of rural and remote readings.	The RFI request did ask for special read costs versus special read charges to ascertain the quantum of this issue, because in some instances costs are higher than charges. The Country RFI response gave one number which is the special read charge - therefore this number was used. It is readily accepted that it may understate the real costs particularly for rural areas.

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	Avoided cost of ripple control	7	Based on an analysis of the business case results, Country Energy believes that the avoided cost of investment in ripple control systems are under estimated for both the annual cost saving and the once-off saving from not replacing the ripple control system at the end of its life.	Noted. With more time a more detailed analysis would have been done.
EnergyAustralia	Retailer efficiencies	9	EnergyAustralia is concerned that the methodology adopted by the consultants does not address the issue of inefficiencies in retail markets, which form the basis for its current (manually read) deployment of interval meters with the approval of the relevant regulator. This omission results in substantial shortcomings in the analysis and is a key reason the modelling results should be treated with extreme caution unless substantially modified.	EA's concept of retail market efficiency seems to assume that there are some objectively 'correct' and independently verifiable price signals that an efficient retail market would send, and that any departure from that outcome is therefore inefficient. The approach that was adopted for the CBA makes no judgements about whether prices more closely align with marginal costs after the introduction of smart metering. Rather, the approach considered what prices might be offered following the introduction of smart meters based on the available evidence. This approach is reasonable for assessing the possible range of the demand response that might result following the introduction of smart metering.
	Smart Metering Information System (SMIS)	9-10	Individual AMI systems will form an overall Smart Metering Information System that will operate in participating jurisdictions. However, the costs of developing and operating a SMIS do not appear to have been fully recognised and incorporated into the CBA.	It is not envisaged that there will be a single SMIS; the different SM functionalities require and impact different systems. These impacts have been separately costed in the Stream 6 Report.
	Scenarios	10	EnergyAustralia agrees with the finding that there are significant advantages in a Network led roll-out. It is recognised the scenarios are not defined relative to the existing regulatory arrangements – the NER. This significantly limits the usefulness of the CBA in terms of informing public policy decisions (the RIS).	The consultants were explicitly asked to not take account of existing regulatory arrangements.
	Metering costs	10	EnergyAustralia is concerned over the decision not to identify metering costs and benefits separately and instead combine them with network costs and benefits in the benefits analysis. The CBA assumed throughout that smart metering costs and cost savings sit with networks. Most notably, the scope of the CRAI Network benefits (stream 2) report spans both metering and network benefits without transparently separating these. By contrast, under the NER, smart metering costs sit with retailers. The lack of separation reduces the transparency of the scenario analysis and may contribute to the inconsistencies in the application of the methodology, which in turn result in the incorrect estimation of both benefits and costs. Most notably, it may have resulted in the apparent under-estimation of ongoing metering costs from the CBA.	Table 15.5 of the Overview report shows that smart metering costs change between networks and retailers between scenarios 1 and 2. These costs (and benefits) are not always allocated to networks as suggested by EnergyAustralia.
	Smart metering technology	11	Key elements of the smart metering technology solution discussed in the CBA are immature and the technologies are evolving rapidly.	Agreed. The analysis of technology was based on the best information available at the time of the study.
	Costs	11	EnergyAustralia considers the lower end of the estimated range of the total cost of implementing smart metering is likely to be lower than actual implementation costs. This conclusion is based on a view that some costs may be omitted, while others may be under-estimated.	Noted. The purpose of using cost ranges and allowances for contingency was to account for uncertainty in the estimates.
	Meter hardware costs	11	EnergyAustralia's experience with purchasing first generation AMI meters indicates higher costs per NMI than the costs in the CBA.	Noted. The cost of a mass roll-out of 10 million meters, i.e. as per the CBA, is likely to be less than that experienced by EA to date.
	Meter installation costs	11	EnergyAustralia's experience with installing AMI meters on a door to door basis has resulted in costs to install single phase AMI meters that are significantly higher than those presented in the CBA. EnergyAustralia has not yet been able to determine the costs of installation at a similar scale to that expected in a full AMI deployment. While lower costs are possible, there remains uncertainty until tested.	Noted. There are a number of different views on installation times, and therefore the likely installation costs of a smart metering rollout. Installation times were based on the experience of the relevant consultants.
	Recurrent smart metering costs	12	The allowance for recurrent smart metering costs is not transparent in the CBA and may require further articulation or review.	Recurrent smart metering costs have been included in the analysis. Retailer recurrent cost assumptions are summarised in section 5.1.3 Phase 2 Overview Report. Network recurrent costs are set out in chapter 16, Phase 2 Network Impacts report.
	DB transitional and operating costs	12	The implementation of AMI touches every part of a LNSP's operations. The highly pervasive impact of AMI means that all the IT/business systems throughout the LNSP will require AMI enablement. These costs are significantly understated in the National CBA.	Implementation of AMI **and enablement of all possible AMI functionality** would impact a significant portion of DB's operations. IT costed in the CBA is incremental IT required to deliver the specific benefits valued in Stream 2. End-to-end enablement of smart functionality (i.e. other than meter data and any mandated services) should be decided by business case analysis for any particular DB.
	Retailer transitional and operating costs	12	The implementation of smart metering has far-reaching implications for retailers' operations. However, it appears that these implications may have been under-stated in the CBA due to the under-estimation of current inefficiencies in retail markets.	See response on the inclusion of retail market efficiencies above.
	Market settlement and meter transaction management cost	12	CBA estimate may under-state this cost.	View noted. CBA lower range costs came from the market operators and upper range has 50% contingency on this. The impact of this estimate on the overall CBA is very small.

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	Program management cost	12	EnergyAustralia notes that the program management cost estimate is based on an overseas example that applies to a vertically integrated entity. It notes that this does not take into account the higher transactions costs that would be more common for the Australian scenario.	The assumption used in the analysis is based on a mix of overseas and Australian evidence. The view that costs could be higher where the business is not vertically integrated is noted. This is considered to be covered in the upper range contingency used in the analysis.
	Benefits	13	EnergyAustralia agrees that potential benefits [of smart meter roll-out] are substantial and could exceed costs provided the functional specification is appropriate and flexible. However, it does not agree with the assessment of individual benefits. It considers that business efficiencies and avoided metering costs are over-estimated, while demand response benefits are under-estimated.	Noted. The assumptions underpinning the analysis of business efficiency and avoided metering costs are set out in detail in the Phase 2 Network Impacts report.
	Retail market efficiency benefits	13	Overall retail market efficiency benefits are omitted or under-estimated and hence the demand response estimates may require revision.	See response on the inclusion of retail market efficiencies above.
	Demand response benefits	13	There are methodological inconsistencies that result in the omission or under-estimation of demand response benefits from a given level of demand response. The substantial benefits of retail market settlement based on interval data are entirely omitted from the CBA.	The demand response impacts estimated in the consumer report reflect the expected impact on consumers arising from the introduction of TOU tariffs and CPP, which includes a component representing the opportunity costs associated w foregone consumption. The potential allocative efficiency benefits resulting from the introduction of TOU tariffs and CPP is incorporated into the CBA through the estimates of network deferral and generation benefits, resulting from the pricing of electricity more in line with marginal cost. The CBA methodology therefore does not underestimate the likely demand response benefits resulting from prices more closely resembling marginal costs. Market settlement benefits are addressed on pages 102-103 pf the Phase 2, Stream 2 report.
	Benefit allocation	13	An excessive portion of overall benefits is incorrectly attributed to Networks.	Noted. Benefits were allocated based on the scenario being considered. Networks are assumed to receive the majority of the first round benefit from scenario 1. These benefits are expected to be transferred to consumers at subsequent regulatory reviews.
	New and replacement metering	13	The avoided meter costs estimated in the CBA could not be achieved without a substantial change to existing meter replacement policies.It appears the counterfactual on which the avoided metering cost benefits have been calculated would not apply for EnergyAustralia.	Noted. Avoided meter cost estimates were modified for the final report.
	Non-network benefits	15-16	It appears that a substantial portion of benefits have been incorrectly attributed to Networks, and that substantial non-network benefits have been omitted entirely. Two key inconsistencies in the benefits methodology result in benefits being incorrectly attributed to Networks: 1) significant retailer benefits are treated as transfers; 2) the distinction between first and second round effects; The existence of the inconsistencies in the CBA is revealed by the CBA conclusion that Network benefits are maximised under Scenario 2, while retailer benefits are maximised under Scenario 1.	The decision to treat retailer benefits as transfers was made at the overall CB analysis level, not at the retail impacts level. See section 3.7 of the Overview report for a further discussion of the rationale for the treatment of transfers.
	Urban/rural/remote split	18	Principally as a result of the limitations of the analysis in terms of retail market efficiency, EA considers the conclusions for the urban, rural and remote assessment need to be treated with considerable caution.	Noted. Both EMCa and CRA considered differences in the costs and benefits between urban, rural and remote areas. This assessment was the basis for the differences used in the CBA between scenario
	IHD	18	EnergyAustralia does not support the mandatory inclusion of in home displays (IHD) in the functional specification. Based on the experience from pricing trials, and its understanding of the implementation costs, it is unlikely that the benefits will exceed the costs.	Noted. The provision of IHDs has not been included in the national minimum functional specification.
	Consumer benefits	21	Consumer benefits are limited to network service enhancements. The consumer impacts analysis report (stream 4) does not identify a number of likely consumer benefits in the form of retail service and product enhancements.	Noted. There may be other qualitative benefits resulting from the introduction of smart metering . that have not been explicitly quantified in the CBA

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Aurora Energy	Cost/ Uncertainty	1	Given the uncertainty of the estimates, in our view there would appear to be a considerable risk of a cost and benefits swing of greater than 5%.	The range in the analysis is already considerably greater than 5%. An additional 5% change in costs or benefits would affect the net benefit results estimated in the analysis.
ActewAGL	Base case assumptions	1	The reports have failed to clearly and accurately portray the way that ActewAGL Distribution is operating in the ACT. There is a fundamental problem with the consultants' analysis pertaining to ActewAGL Distribution where the analysis is based on ActewAGL only installing electromechanical Type 6 meters when the reality is that ActewAGL only installs Type 5 interval meters.	Noted. The first counterfactual did mistakenly assume accumulation metering instead of interval metering for ActewAGL. However, the cost difference is not significant. The second counterfactual does include all interval meters for ActewAGL.
		6	The error in the base case significantly taints the findings for the ACT, as it assumes that the counterfactual case has no scope for time of use or interval pricing. This means that the outcomes for the ACT are likely to be in reality, less favourable towards smart meters than the report itself concludes.	The final results have been changed to resolve this problem.
	Grouping of ACT/NSW analysis	1	ACT and NSW regulatory arrangements, consumption trends and usage patterns in relation to metering are separate and substantially different, and this affects the case for the roll-out of smart meters in the ACT	Noted. Where feasible given data limitations, we have sought to separately analysis the case for SM in the ACT.
	Justification for roll-out	6	ActewAGL agrees with the consultant's summary on pg. 83 of the NERA Final Overview report that a Smart Meter roll-out is not justified in the ACT on the basis of business efficiency alone.	Agreed.
	NMI numbers	7	The report on pg. 213 failed to give a breakdown or mention the number of NMI's for the ACT, despite this information being readily available.	Appendix E of the Overview Report provides a breakdown of NMI's for each jurisdiction, with the ACT having been included within the NSW figures because it is part of the same NEM region. As outlined below, where possible the results for the ACT have been separately identified. Separately providing information on NMI's for the ACT is not material to the analysis that was undertaken.
	Consumer impact report (grouping ACT and NSW)	8	Tables throughout this document group the ACT in with NSW. ACT operates a different network and in accordance with the operational requirements suited to the ACT network and consumption trends. Thus the ACT must not be analysed in the same way as NSW. The ACT has a peaking winter load and does not experience summer critical peaking. The report also grouped the two in Appendices B and C.	The ACT has been grouped with NSW in many sections of the report, acknowledging that it is part of the same, single NEM region for settlement purposes. Where feasible, the results have been separated for the ACT - see Chapter 9 Overview Report.
	Consumer impact (TOU time periods)	8	Page 28 & 29, tables 3.3 & 3.5 have grouped the ACT in with NSW and reflected NSW TOU times, ActewAGL has different TOU time periods than NSW.	Due to an inability to easily obtain individual load profile data for the ACT, the demand response modelling was conducted for the entire NSW NEM Region.
	Consumer impact (critical peak)	8	The ACT does not experience summer critical peaks similar to those in NSW.	Acknowledged. The NSW NEM region was winter peaking for the base year that was used for the demand response analysis.
	Consumer impact (table error)	8	There is an error with the data written up in table 8.24 "Summary of jurisdictional bill impacts" on pg 99. Figures quoted in tables 8.7 and 8.8 on pg 82 relating to the ACT do not match the figures published/reported on pg 99, table 8.24 for the ACT, both in the "total bill change" and "CPP + TOU" columns/line.	Agreed.
	Consumer impact (solar generation)	9	There could be no avoided costs in the ACT using Import/Export metering for solar generation as ActewAGL Service and Installation Rules require that the solar generation be separately metered. This is done using a twin element meter in most cases.	The avoided cost arises from smart metering allowing solar generation to be installed by a customer without needing to replace the existing meter.
	CRA report work stream 2 (import/export metering)	7	Section 6.2 - ActewAGL has different requirements for metering of PV installations, and purchases 100% of the energy from the customer and requires that the PV energy is individually metered; therefore there are no avoided costs in having import/export metering.	Noted. This reduces the ACT network benefits by 1.7%
	CRA report work stream 2 (meter reading costs)	7	Section 7 - ActewAGL is a multi-utility, providing electricity, water and gas services. As such, our meter reading costs are low as all three services are read at the one visit.	Noted. This suggests there may be little or no avoided meter reading costs in the ACT following the introduction of smart meters.
	CRA report work stream 2 (base case)	7	Appendix F Counterfactuals, F2.1 pg 110 - The consultant carried out the study using incorrect information and believed that the ACT was install electromechanical meters.	Noted and commented on above.
	KPMG report (FRC)	7	Although ActewAGL Distribution did not comment on behalf of ActewAGL Retail, it was noted on pg 66, Table 3 that ACT does not have FRC. T ACT has had FRC since 1 July 2003.	This was a typographical error on page 66, Table 3 Phase 2 Retailer impacts report.
	KPMG report (grouping NSW and ACT)	7	In the case of all the tables, the ACT was grouped with NSW. The problem that arises is that ActewAGL Distribution offer different times for Peak Shoulder and Off-peak for both domestic and commercial periods.	This is accepted, but was done because the measurement of market benefits using the CRA model groups NSW and the ACT, so an assumption had to be made for both. This was made clear in the footnote 102 on page 67 and in the Appendix (see footnote 176 on page 118 in particular). The discussion on page 67 also summarises some of the key features of the ACT
	CRA report work stream 5 (CO_2 reduction)	9	It is difficult to comment on this section as the ACT was grouped in with NSW, but overall it appears that positive outcomes can be achieved in the reduction of CO_2 emissions and peak load demand on networks with either the introduction of smart meters or through the use of Direct Load Control (DLC).	True, but it is worth noting that the CO_2 reduction potential of DLC is relatively limited as compared to that of smart meters, particularly when coupled with enabling technology such as the IHD and/or other innovative information programs.
	EMCa (additional technology)	9	ActewAGL is currently considering the use of Wi-Fi as a communication platform to communicate with meters (water, gas and electricity). We not that this technology was not investigated by the consultants.	Noted. The assessment of technology was based on the most feasible technology to support an AMI rollout.

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CitiPower and Powercor	Scenarios	1	Whilst CitiPower, Powercor and many other stakeholders may have concerns about the absolute values reported, the relative merits of the scenarios tested give a very clear indication that a policy decision to mandate a distributor led smart metering program is appropriate.	Noted. The MCE has agreed that a distributor-led rollout is preferred.
	DB roll-out framework	1	CitiPower and Powercor urge the MCE to implement a regulatory framework which provides for an exclusive distributor-led roll out with full cost recovery. Given that the evaluation of Scenario 1 is based on a 20 year analysis including the ongoing provision of meters and meter data services, it is also appropriate that a mandate reflect this enduring exclusive service provision.	Noted. This is a matter for the MCE to consider.
	Benefits	2	CitiPower and Powercor were surprised to see such a small contribution from improved efficiencies associated with the wholesale market.	The input assumptions that frame this result are explained in Section 6.3 of the Overview Report and have been subjected to some sensitivity testing. The key issue is the degree to which TOU and CPP tariffs are offered by retailers and taken up and responded to by customers. Under the current NER, such implementation and take-up must occur o strictly voluntary basis. The only exception is that retailers could be required to offer some form of CPP and/or TOU tariff as a license condition. This would still not dictate how aggressively the retailers would have to market these tariffs, nor how likely they would be to be taken up by consumers.
	Benefits assumptions	2	Assumptions relating to the take up rate of new tariffs which provide better price signalling include between 55% and 60% of customers remaining on flat tariffs. This is a very conservative estimate and likely to seriously understate the associated benefits, particularly in wholesale market, generation and transmission efficiencies.	The high end demand response estimates consider higher levels of penetration, specifically for critical peak pricin See section 5.1.3, Phase 2 Consumer Impact Report.
ENERGEX	Scenario	1	ENERGEX supports a distribution-led staged jurisdictional roll-out.	Noted MCE has agreed that a distributor led roll-out is preferred.
	Regulatory framework	1	In order to support a successful roll-out of smart meters, ENERGEX emphasises the need to establish the appropriate regulatory and legal framewo and address the transitional issues prior to any mandates or policy decisions.	Noted. Regulatory and legal framework is a matter for the MCE and the jurisdictions.
	COAG objective	1	ENERGEX is concerned that the justification and objectives behind a smart meter roll-out now appear to be significantly driven by perceived business efficiencies and avoided operating costs, rather than the critical drivers of peak demand reduction and the overarching environmental benefits.	Noted. Both business efficiency and demand reduction benefits have been considered as part of the CBA.
	NPV and cost assumptions	2	ENERGEX believes that both the lower and upper findings are NPV negative over the term of the analysis period, with the total cost being significantly greater than the consultants' assessment. Major cost disparities between the CBA and ENERGEX' in-house model include: Information and Data Management Systems capital and operating costs; Communication System capital and operating costs; and on-costs associated with materials and labour.	In the time available it has not been possible to reconcile differences between Energex's analysis and that undertaken as part of this study. Based on information provided at a meeting held between the consulting team and Energex, it appears that meter unit costs are similar but that the aggregate present value assessed by Energex appears to be much higher. In addition, installation costs are higher, IT costs **attributed to SMI** are significantly greater than estimates from any other DB or other source of input and appear to comprise a complete IT replacement, nearly all of which would be to support "smart" functionality rather than metering, and with very short-term refresh cycle and very high incremental opex both of which appear to exceed current levels Regarding Comms costs, both the capex and (particularly) the opex are considerably higher than information provided to EMCa from a range of sources used in the CBA. It is noted that the incremental IT costs assumed by Energex to be required are ten times (or more) greater than those estimated by other DBs.However, the existing Energex IT platforms may differ considerably from other DBs.
	Benefit assumptions	2	Other significant disparities relate to meter replacement programs and ripple control assets, methodology applied to avoided costs and special reads and assumptions relating to import/export metering and disconnects/reconnects, both of which are heavily reliant upon policy outcomes pertaining to tariffs and public safety matters.	General views noted. No changes were made in the approach for the final results.
	Costs	2	ENERGEX is concerned that the actual costs of the proposed roll-out are being significantly understated including the underlying counterfactual assumptions of existing systems and capabilities and the functionality outlined in the analysis.	View noted. Costs have been revised in the final results.
	EMCs report (costs)	2	ENERGEX is concerned that the EMCa work stream, used as a foundation for the NERA Overview cost benefit assessment, specifically states that its report is not intended to be used to support business cases, business investment decisions or regulatory cases.	That was not the intended purpose of the national CBA. The analysis of cost was to inform an MCE decision about a proposed national mandatory rollout of smart metering. More detailed business case assessment should be undertaken for each distributor.

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Ergon Energy	Scenario	1	Ergon Energy supports an exclusive distributor led roll-out in circumstances where the business case demonstrates a positive outcome, or where it can be made to exist through regulatory adjustments to ensure full cost recovery.	Noted. Examination of the necessary regulatory arrangements was beyond the scope of the CBA.
	COAG objectives	1-2	Ergon Energy is concerned that the CBA does not adequately assess the roll-out of smart meters against each of the original objectives announced by COAG and the MCE. CBA puts significant weight on the objective of business efficiency above all others. Ergon Energy believes equal consideration should be given to all of the abovementioned objectives.	Noted. Equal consideration was given to all of the objectives. See chapter 17, Overview report.
	Risk assessment	2	The CBA papers do not provide a detailed discussion of the risks involved in a national smart meter roll-out.	Noted. Risks arising from the estimates of costs and benefits have been noted throughout the stream reports.
	Technology risks	2	Ergon Energy is concerned that the CBA does not fully address the technical risks associated with a smart meter roll-out. There a currently no meters on the market that meet the minimum functionality set out in the CBA. As a result, the solutions postulated in t CBA are far from mature. Ergon Energy is concerned that the assumptions used in the CBA will result in too many platforms bei changed at the one time. The CBA also fails to take into account that there will be a period of transition whereby legacy and n systems will need to run side by side. A significant issue that is not addressed is where the proposed technology sits within the broac strategic intent of the industry (with concepts such as information management, intelligent grid and field force automation).	CBA does account for legacy and new systems to be run in parallel. The CBA is not a recommended roll-out program and it may be that DBs choose to phase the changes; this would have little impact on the NPV of overall costs. Not all systems will likely need to be changed at once.
	Regulatory framework	2-3	It is essential that the governance framework for a smart meter roll-out is established up-front to provide the necessary certainty for investment. In QLD, changes would be required to safety legislation to obtain the benefits associated with remote disconnection and reconnection. Regulated tariffs will need to be significantly restructured to enable price signals to be sent to customers.	Noted. Governance frameworks are a matter for the MCE and each jurisdiction.
	Business impact	3	If costs are not able to be recovered as they are incurred there will be negative implications for the cash flow and credit rating of DNSPs. This was not captured in the CBA. CBA also doesn't include accelerated write-off of existing meter and load control assets. Impact of smart meter roll-out on future planned projects has not been considered.	Noted. Financial implications for businesses arising from the rollout are a matter of implementation. They are proper not considered in the CBA. This impact has been considered in a generalised fashion with regard to deferral of network augmentation. Consideration on a project-specific basis was simply impossible given the number of network augmentation projects that will be considered over the course of the study framework and the fact that there is virtually no data on any of the except those that are scheduled for the next few years.
			Impact on employees of DNSPs has not been considered (to achieve the maximum benefits from the roll-out of smart meters, major business transformation will need to occur, along with change management project to manage the impact on people and processes).	Agreed. Experience with the Victorian rollout suggests that program management for an AMI rollout can be significant. Program management costs were included in the analysis.
	Labour market	3	The costs and issues associated with attracting and retaining labour resources in a tight labour market environment have not been addressed.	Noted. The labour costs for the rollout were considered in the context of prevailing labour market conditions.
	Impact on community	3	An assessment of the impact of smart meter roll-out on industry and the community has not been undertaken.	The proposed smart meter rollout is for small customers, and therefore would not likely include industry. Our assessment has included analysing the impact on consumers and thereby the community.
	Marketing costs	4	Costs of the required significant marketing campaign have not been captured. It is unclear whether marketing responsibility falls to DNSPs, retailers Governments, or a combination of the three.	This is included in the program management allowance. While this is likely to be a reasonably significant costs, it was considered insufficiently material to isolate as a separate line item.
	Customer impact	4	CBA does not fully address all the impacts on customers of a smart meter roll-out. Costs are expected to be incurred in the first five years of a roll-out and will be passed through. Benefits will not occur at the same time as costs and will not be passed through at the same rate. The impact is an initial increase in prices for customers. Prices of petrol and interest rates are rising concurrently. QLD DNSPs are also going through a regulatory reset and incorporated increased renewable energy targets will have potential to influence electricity prices. The CBA treats the smart meter roll-out in isolation, and this is incorrect.	How costs and benefits are passed onto consumers will be an important transitional issue associated with the regulatory framework developed for the rollout.
	Supply interruptions	4	The CBA does not consider the impact to consumers of supply interruptions associated with a smart meter roll-out.	Agreed. We anticipate that any supply interruptions associated with the rollout will be low because it would ideally be implemented in a way so as to minimise the disruption to customers. The Stream 6 costs make allowance for a significant proportion of meter change overs for business customers to be done after hours.
	Customer behaviour	4	Ergon Energy is concerned about the ability of certain customer segments (lower income) to change their behaviour in ways suggested by the CBA	The demand response estimates have been based on the best available information of the likely response of customers to changes in price. They are necessarily average responses and certain customer segments may have a larger or smaller response according to their individual circumstances.
	Data inputs	5	It appears that some of the factual data provided during the data collection phase has been ignored by the consultants. Ergon Energy provided details of the actual planned meter replacement program for use in the development of the counterfactual. However, the consultants have chosen not to use this information and instead developed an assumed future program.	Ergon's factual data was received and taken into account in the analysis.
		4	Ergon Energy's analysis shows that there is a negative business case under both the best and worst case scenarios, with IT, metering installation and	The consultants have used information on costs based on an examination of information provided by all distributors.

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			operating and communications costs underestimated.	This means that there may be opportunities for cost efficiencies, or alternative additional costs incurred in some jurisdictions over others. The range of costs used in the study reflect the consultant's independent view of the likely range of costs associated with a smart metering rollout, taking account of all of the information available at the time the analysis was undertaken.

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	Methodology	5	As the CBA does not explain the methodology used in undertaking the modelling, it is not useful to compare the quantitative results to those of Ergon's internal model.	The consultants have subsequently met with Ergon Energy to explain the quantitative methodology in detail.
	IT costs	5	The CBA appears to use an Australian wide average for IT costs, rather than business specific costs. Further, the CBA ignores the ongoing refresh costs, both capital and operating, of IT.	The CBA is explicit in that it uses assessments of Australia-wide averages for costs for IT systems, based on the range of input information provided. The analysis explicitly includes ongoing capital refresh and opex costs for IT.
	Meter installation costs	5	The CBA appears to underestimate the cost of meter installation and makes no allowance for ongoing maintenance activity.	The comments on meter installation costs is noted. Meter maintenance is accounted for by assuming that smart meters are "maintained" by being replaced on failure, and the associated cost is included in the analysis.
	Communications costs	5	Capital cost of communications and associated operating costs - the CBA does not take into account the state and configuration and coverage of individual networks.	This is correct. However, the analysis does take account of the different proportions of rural and remote customers in each network. EMCa has been made aware of specific coms backhaul opportunities in some parts of some networks that may be much lower costs than have been assumed in the analysis; however this component of the overall NPV of costs is relatively small and would require detailed (i.e. planning-level) assessment by the relevant Network.
	Cost of capital	5	WACC, hurdle rate, cost escalation and discount rates - significant differences arise as a result of using rates that more closely reflect the operating environment of Ergon Energy.	Agreed. Changes in these parameters will potentially significantly affect the net benefit results. A common WACC assumption was used in each jurisdiction.
	Meter avoided costs	5	Replacement value and maintenance (avoided costs) relating to the meter and load control fleet - Ergon Energy has developed its business case based on its actual planned future meter strategy, while the CBA is based on an assumed strategy. This results in the CBA overstating the avoided costs.	Noted. Ergon has advised of their view that avoided meter costs are too high. Changes were made to the avoided me costs used in the final analysis.
Western Power	Scenario	1	Western Power firmly believes that the distributor-led smart meter rollout is the best overall approach.	Noted. MCE has agreed that a distributor led roll-out is preferred.
	Justification for roll-out	1	Western Power concurs with the MCE consultants' cost benefit analysis showing that a distributor-led smart meter rollout has the highest net present value across all scenarios for WA and can be justified solely by resulting business efficiencies distributors are expected to accrue.	Noted.
	Customer impact	1	Western Power also believes the significant customer benefits including increased choice (and control) over their energy use, is extremely positive	The customer impact assessment has sought to quantify the likely benefits arising from changes in demand response. These benefits include lower customer bills associated with changing the timing of electricity use and overall conservation. There may be other benefits that have not otherwise been quantified.
	Scenario 3	5	Western Power finds the range of DLC benefits to be adequately and comprehensively covered, but does not favour this scenario as it was tailored more specifically for South Australian requirements.	Noted.
	Costs and benefits	5	Western Power concurs with the ranges of costs and benefits provided by the MCE consultants for the distributor and retailer-led scenarios.	Noted.
	Minimum national functionality	5	Western Power supports the minimum national functionality proposed by the MCE.	Noted.
	Avoided cost of meter reading	6	Western Power suggests the assumption of removing meter reading route management requirements may warrant further investigation. Although the current emphasis on field sequence would probably disappear, some form of route management is expected to remain.	Noted. The functionality for smart metering that is assumed in the CBA requires daily reading for all meters. The NMS system automatically manages this data collection - no routes are required. The quantum of total network benefits that is avoided meter reading route management is only 0.7%.
	Supply capacity control benefits	6	Western Power suggests that this functionality may be used to limit the load of particular customers rather than carry out mass load shedding. Western Power is uncertain how the $0.5M avoidable cost was derived, as there are currently no supply capacity control circuits in WA.	Stream 2 report section 10.2 describes this. It is the avoided cost of replacing a proportion of service failures that are due to customers load exceeding the service fuse rating.
	Outage detection	6	Western Power agrees with the potential savings provided by outage detection (i.e. reduction in unserved energy, which is the highest in terms of benefits that could be derived).	Noted
	Consumer impact (take-up assumptions)	7	Western Power suggests the take up rate assumptions for different tariff options are very high (57.5% in WA). Western Power is uncertain how this figure has been derived.	Noted. Take up rate assumptions were developed by KPMG based on their experience and discussions with retailers.
	Consumer impact (retrofitting of devices)	7	Water heaters should be added to air-conditioners and pool pumps as the highest load impacting appliances; retrofitting DLC devices in existing air conditioners will incur a significant cost. In this context, the fact that all air-conditioners may have such a device from 2009 could be explored to derive increased benefits; DLC devices are much more difficult to install on pool pumps.	The retrofitting of water heaters has not been considered in the analysis.
	Transitional costs (meter installation)	7	Western Power does not agree with the assumption that an out of hour allowance of 70-90% should be made when replacing a current transformer installation with a smart meter due to power interruption.	If it can be assumed that the installation can be done live by by-passing CTs then the out of hours allowance is not necessary. The effect on total metering cost is negligible as CT connected meters are only a very small percentage of the total meter stock.

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	Transitional costs (communications)	8	Western Power suggests that the basis for the consultant's assumptions for urban areas is generally reasonable. The recommendation to use GPRS is unclear when Next G is likely to be the network with largest country coverage. The power line carrier assumption for distributor-led rollout in rural and remote areas is not currently practical for Western Power's distribution network. This also overlooks the opportunity to leverage off Western Power's considerable mobile and fixed radio infrastructure. Although the consultants assume mesh radio to be unsuitable for rural and remote areas, Western Power suggests it is possible to achieve path lengths that would make such a system practical. Western Power also suggests that its mobile and fixed radio infrastructure could be used as a backbone connection to the data centre.	The comments regarding the urban assumptions is noted. The comments regarding 3G in rural areas is also noted; however the cost of 3G meters is higher than GPRS meters a the difference in coverage is small. The choice of GPRS vs 3G is for each DB to make; EMCa has used what currently appears to be the lowest lifecycle-cost technology for the purposes of the CBA. Regarding leveraging existing radio infrastructure, and as noted for other jurisdictions, the analysis does not take account of particular technologies already available on a limited basis within a jurisdiction; these would be analysed at a planning or design-level analysis, but such detail is not material to a policy-level analysis.
Centre for Credit and Consumer Law, Griffith University Law School	Benefits to consumer	1	There is a continuing lack of direct benefits for consumers given the provisional nature of evidence identified thus-far.	The consumer benefits that have been quantified include those associated with bill changes resulting from the introduction of time-of-use tariffs and critical peak pricing.
	Scenario	1	We support Scenario 1 for a Distributor led roll-out based on the evidence outlined in the CBA.	Support noted. The MCE has agreed that a distributor-led rollout is preferred.
	Jurisdictional differences	2	We welcome the acknowledgement of jurisdictional differences with regard to the cost-benefits of the roll out of smart meters and that in Queensland there is a case for a DLC roll-out.	Support noted.
	HAN	2	We support the recommendation for inclusion of Home Area Network (HAN) as part of the minimum functionality requirements for Smart Meters because of the potential positive impact on demand response.	Support noted.
	Rural and regional QLD consumers	3	The nature of competition, as identified in the CBA, will link competitive tariff offers naturally to areas where there is competition. For instance, the Overview Report states that retailers have a stronger incentive to offer these tariffs where they face competition for customers that are currently paying more than the underlying cost to serve them i.e. in urban rather than rural areas. On this basis competitive offers in Queensland will be restricted to the South-East contestable corner.	Statement noted.
Consumer Action Law Centre	Allocation of benefits	1-2	Upon evaluation of the overall costs and benefits as presented in the Phase Two CBA reports, it appears that business will reap most of the benefits and consumers will bear the brunt of the costs of a smart meter roll-out. It is not clear that business benefits will be passed onto consumers.	How benefits and costs are passed onto customers will be an important part of the regulatory arrangements that should accompany any rollout of smart metering.
	Cost pass through	2	The majority of benefits are the result of business efficiencies, including avoided costs of meter reads and manual disconnections/ reconnections. While NERA anticipates that these will flow through to customers in the form of lower tariffs, we are concerned that any benefits will only be passed through subsequent to consumers bearing the costs of the roll-out through paying for the initial installation and capital costs of the meters.	See comment above.
	HAN	2	Based upon the elasticity rates provided in NERA's case studies, there is no guarantee that many consumers will be able to shift their load. We are particularly concerned about the ability of low income consumers, retirees or families with young children who are at home during the day. We recommend the approach that an optional 'add on' of HAN enabling technology is considered, resulting in opportunities to reduce the meter cost of the rollout and potentially accommodate the estimated numbers of customers that choose to use this functionality and install IHDs.	The elasticity estimates used in the demand response analysis are averages based on international trials. It has not been possible to accurately determine as part of this study how individual customer segments may be able to respond to TOU and CPP.
	Impact of CPP	3	We are concerned that consumer fatigue over prolonged periods of extreme weather will reduce the impact of CPP and subsequently demand management, rendering CPP ineffective as a demand management tool.	The effect of consumer fatigue is acknowledged, but not directly included in the estimates of demand response. Quantitative evidence of the implications for demand response of fatigue was not available.
	TOU/CPP pricing	3	We are particularly concerned by NERA's observation that in jurisdictions with retail competition for small residential customers, changes in network tariffs may or may not be passed through to customers. This is of increasing concern as this will potentially dilute the tariff signals to consumers, and further distort demand response. It is important that, should TOU/CPP pricing be introduced, there is a policy framework to provide consumer protections, particularly those that ensure electricity remains accessible and affordable to low income and vulnerable consumers.	The approach to providing incentives for retailers to pass on distributor time of use tariffs will require further investigation. The issue of whether and how certain classes of customers should be insulated from those price levels and structures will require both regulatory and government policy consideration.

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Integral Energy	Uncertainty of results	1	Integral Energy agrees with NERA's conclusion that the CBA is subject to a number of uncertainties including the need to finalise the national functional specification.	Agreement noted.
	Scenario	1	Integral Energy agrees with NERA's conclusion that a DB-led smart meter roll-out best satisfies the MCE's assessment objectives.	Support noted. The MCE has agreed that a distributor-led rollout is preferred.
	Roll-out timeframe	2	Overall, Integral Energy's preliminary view is that a realistic timeframe for completing the roll-out would be by 2017.	Roll-out timeframe preference noted. This is a matter for the MCE and each jurisdiction.
	Costs and benefits	3	Integral Energy is concerned that the analysis fails to capture all of the costs and benefits that would accrue to retailers and customers.	View noted. Submission does not contain specific information that could be assessed
	Demand side response	3	CBA does not capture the potential for a greater demand side response as the result of the Federal Government's imminent greenhouse policies, including the introduction of an emissions trading scheme. Integral says it is presumably an issue of timing.	The implications of the national emissions trading scheme on tariff design has not been quantified in the analysis, because tariffs were designed to be cost reflective of current revenues. The implications for retail prices of the introduction of the carbon reduction trading scheme is uncertain, and therefore has not been included in the analysis.
	IT systems and meter churn costs	3	CBA significantly understates the costs associated with a retailer led roll-out scenario in relation to meter churn and the increased complexity of IT systems.	The costs of churn were considered. Assumption is that if meters churn (and the level of churn may not be great, but is essentially unknown at this stage) it will be because there is a net benefit to some party in doing so. The CBA should not included the cost of churn unless it was to also account for the presumed benefit. The analysis assumption to ignore churn is defensible, given the assumption that individual churns will take place only if they are net-positive, and assuming a relatively low level of such churn.
	Roll-out costs	3	CBA may have failed to adequately cater for specific local distributor conditions and therefore potentially understate the costs faced by those businesses in implementing the required solutions.	As stated previously, the analysis is based on generalised assumptions. These may over- or under-state the costs for a particular DB, but the most relevant differences (such as different meter mixes, urban/rural/remote, meter board differences, labour costs by jurisdiction etc) have been taken into account, as is described in the Stream 6 report
	HAN	3	CBA ignores the potential benefits to retailers from delivering additional services through the HAN.	These benefits have been acknowledged but are not quantified in the analysis.
	Allocation of benefits	4	May have misallocated the relative share of the net benefits between distributors and retailers (if the benefits initially accrue toDBs rather than retailers, then DB led roll-out would be likely to have occurred already).	Noted. Under the distributor led scenario, distributors are expected to receive the benefits in the first instance, before these benefits are transferred to customers in the form of lower revenue requirements at a subsequent regulatory revie Distributors have no incentive to undertake a smart metering rollout even where there is a positive net benefit case within a regulatory control period because the distributor is unable to capture all of the net benefits over the life of the assets.
	Regulatory framework	4	It will be crucial that a regulatory regime is put in place that ensures that DBs are able to recover their full costs of undertaking a smart meter roll-out.	Noted. Regulatory arrangements for the rollout is a matter for the MCE and jurisdictions.
	Customer net benefits	4	There are currently a number of policy and regulatory barriers that prevent participants from fully realising the benefits including tariff controls at both the DB and retailer level. Taking positive steps to remove or reduce those barriers would therefore be desirable.	Noted. Barriers to the realisation of benefits would require further consideration as part of a rollout.
WACOSS (Western Australian Council of Social Service)	TOU tariff	1	WACOSS has concerns regarding the need for additional modelling of the impact of higher-than-expected TOU tariff allocation on a CBA.	Increasing the TOU take-up rate assumptions would be expected to increase the potential demand response benefits associated with a rollout of smart metering in WA. In light of the already positive net benefits of the rollout, a higher take-up rate would further increase the net benefits of a rollout in WA.
	IHD	1	WACOSS is concerned about the extent to which IHDs would illicit a demand response, and over what period of time such response would prevai	Noted. The evidence on the effectiveness of IHDs to elicit demand response is mixed. See discussion in section 7.1, page 58 of the Phase 2 Consumer Impact Report.
	Allocation of benefits	2	While WACOSS readily acknowledges that smart meters have the potential to promote gains in the area of network and distribution efficiency wit energy markets, such gains also carry the question of how both the costs and the benefits for consumers might be fairly allocated.	How benefits and costs are passed onto customers will be an important part of the regulatory arrangements that should accompany any rollout of smart metering.
	Low-income consumers	3	WACOSS believes that many households living on lower incomes will have difficulty responding to pricing signals such as critical peak pricing and the TOU tariffs enabled by smart meters.	The elasticity estimates used in the demand response analysis are averages based on international trials. It has not been possible to accurately determine as part of this study how individual customer segments may be able to respond to TOU and CPP.
	Cost and benefit pass through	3	That the passing through of costs associated with the implementation of smart metering will precede any possible, direct flow-through of benefits t consumers highlights the need for additional attention to be paid to the manner in which these benefits are allocated.	Agreed. This is a regulatory decision on the cost/benefit allocation associated with a smart metering rollout.
	Remote connect/ disconnect	4	WACOSS maintains that the remote connect/disconnect option of smart meters will also require robust hardship regulations are in place for vulnerable consumers.	Agreed and acknowledged in the Phase 2 Overview Report, section 18.6.
	Pre-Payment meter functionality	4	If present in a meter, Pre-Payment functionality would require the introduction of significant consumer protection regulation to mitigate against negative outcomes particularly for disadvantaged consumers.	View noted. See page 204, section 18.6 for a discussion of consumer protection issues.

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Energy Networks Association (ENA)	Scenario	1	ENA supports a distributor led mandatory national smart meter roll out that prioritises regions where benefits are clearly identified.	Noted. MCE has agreed that a distributor led roll-out is preferred.
	Cost recovery	2 7	The probability that investors will not be able to retain full benefits of the roll-out provides support for full cost recovery by distributors. DBs are unlikely to have a business case for investing in smart meters unless there are full cost recovery provisions in regulation.	Noted. Arrangements for the recovery of costs will be a matter for the regulatory framework, which is beyond the scope of the CBA.
	Regulatory framework	2	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.	Noted. Legal and regulatory framework is a matter for the MCE and jurisdictions.
	Uncertainty of results	4	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.	View noted. Uncertainty has be addressed by the use of range estimates for the costs and benefits.
	Public education	4	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.	Noted. The need for public awareness campaigns was acknowledged as part of the analysis.
	Pilot projects	4	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.	Agreed. This is a matter for consideration by the MCE.
Landfill Gas and Power	Scenario	1	We support a model in which smart meters are rolled out by the distributor.	Noted. MCE has agreed that a distributor led roll-out is preferred.
	FRC	2	We note that Full Retail Contestability is still under review, and advise that we perceive the two issues to be inter-related; a mandated smart meter rollout to residential and small business customers only has merit if it is accompanied by deregulation of those customers.	View noted. This is a policy matter for consideration by the MCE.
	DLC	2	We would also express our support for Direct Load Control device rollout as a means of achieving firm demand reductions.	Support noted.
TEC Total Environment Center	Greenhouse emissions	2	TEC's primary concern is that in its current form the CBA aims to capture only modest greenhouse emissions reductions.	View noted. Any reductions in greenhouse emissions would need to be based on conservation of electricity resulting from the introduction of smart metering. The analysis reflects the most recent evidence on energy conservation resulting from the introduction of time-of-use tariffs, critical peak pricing and direct load control.
	Carbon pricing	2	We are also concerned that the carbon pricing models used in Phase 2 are based on very conservative scenarios which do not reflect the prices expected under the Emissions Trading Scheme which is to commence in 2010.	The carbon modelling was conducted in the absence of detailed understanding of the design of the proposed ETS. This necessitated the use of conservative carbon price assumptions.
	Additional trials	2	We also strongly believe that further trials are essential. We recommend that a 10% target for overall reduction of (average, base-load) consumption is adopted . We also believe that trials are need to test the conclusions to date.	Noted. MCE has agreed to support smart metering trials in some jurisdictions, refer to 13 June 2008 MCE communiq
	Large electricity users	2	We also note that the investigation so far has been limited to residential consumers. Considering that commercial and industrial users consume more electricity as a proportion of the total, we urge the MCE to initiate a similar investigation regarding these users.	The focus of the national smart metering rollout is small customers. Many larger customers already have an incentive to install a smart meter, and many have such meters installed.
	HAN	2	TEC supports the consultants' recommendation for the inclusion of an interface with a HAN for each meter. Maximising greenhouse benefits is dependent on additional features above the smart meter alone – such as DLC and/or provision of IHDs – and for these, inclusion of a HAN is essential.	Support noted.
	Reduction in electricity demand	3	What is not clear is the degree of these potential reductions. Nonetheless, a more efficient system with greater certainty for demand forecasting and probable benefit of reduction in emissions is a worthwhile endeavour.	Support noted.
	DLC	4	Where there is no smart meter, the overall benefit from DLC only is lower, because there are no price signal or conservation impacts. It may be a cost-effective solution but does not adequately address climate change concerns.	Distinction between DLC and other demand response benefits from TOU and CPP are noted.
	IHD	4	It is clear from the many trials here and elsewhere that IHDs are a primary necessity for maximising consumer information and greenhouse benefits. Without IHDs the meters are not particularly smart and only offer the potential to deliver incidental greenhouse gas reductions.	The international trial evidence on the effect of IHDs on demand response is mixed. More recent evidence from EnergyAustralia suggests that IHDs may have a positive impact on demand response. This was the basis for its inclusion in the demand response estimates.
	Import/export metering	5	TEC is pleased that the facility for metering net import or export has been included in the minimum functionality for meters.	Support noted.
	Renewable energy production	5	TEC strongly supports the facility for tariffs to support renewable energy production, and notes that it should refer to the gross amount generated at the site. Unfortunately, the minimum functionality only refers to the net figures, and we are disappointed that there has clearly been no proper consideration of the potential for the meters to measure gross production.	Noted. The assumed import/export functionality supports recording of net energy flows. Gross metering would require a two element smart meter, which has not been specifically considered as part of the analysis. See page 158, Phase 2 Overview report.

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	Further demand response modelling	6	We support a recommendation from the St Vincent de Paul Society and the Consumer Utilities Advocacy Centre that the MCE should: "put in place milestones that allow for review and update of the modelling as relevant information becomes available to market participants …", which would assist their recommendation that, "a formal process for review be developed and articulated to further inform the cost benefit analysis."	Noted. This is a matter forfurther consideration by the MCE
	CPP	6	The findings of this CBA are not in fact a good indicator of how deeply the conservation effect may bite, particularly over time.	Concerns noted. The conservation effects reflect an analysis of the best international evidence on the conservation effect of TOU, CPP and DLC.
	TOU	6	There is also a fundamental flaw in most of the discussions about time of use tariffs, that is, that their sole purpose is to encourage load shifting in the form of knee-jerk responses to peak pricing. By virtue of being a vehicle of informing customers about the fluctuations in electricity price, they may also encourage load reduction. Just as there is variable evidence in the Australian trials that load reduction will occur, there is similarly variable evidence that it will not occur. The virtue of an IHD is that it can inform a customer not only about prices (to which demand may be relatively inelastic) but also about carbon costs and greenhouse emissions, which may elicit more interest and, potentially, a much larger response.	Estimation of demand response from TOU pricing has been based on international trial evidence. Further information from Australian trials will assist in assessing the likely demand response associated with these tariff arrangements in Australia.
	Education program	7	We agree with NERA that there must be a proper education program about smart meters and tariff structures, particularly on the potential for ameliorating dangerous climate change.	Agreement noted.
Tasmanian Council of Social Service	Smart metering rationale	1	The primary rationale for undertaking a mandated national roll-out of smart metering and direct load control technology remains unclear to us. We have therefore found it difficult to address those aspects of the CBA relevant to our constituents and to draw definitive conclusions.	Noted. The rationale for the introduction of the CBA is to provide both business efficiency and potentially energy reduction benefits.
	Increased cost to consumer	1	The major issue for our constituency arising from the CBA is the likely increased cost to consumers of a smart meter roll-out – and the apparent absence of guaranteed, clear-cut and timely net benefits.	Noted. The allocation of costs and benefits between businesses and consumers will be a matter for consideration by the AER as the relevant regulator.
	Benefit to consumer	3	The CBA assumes that the benefits will be passed on to consumers in lower network prices – while this may be true, it is not certain. It is likely that distributors will seek to recoup the costs of meters and installation in the first price re-set after the meters have been rolled out and could delay passing on the savings to consumers until these savings were actually realised (after the subsequent re-set/price determination at the earliest).	How benefits and costs are passed onto customers will be an important part of the regulatory arrangements that should accompany any rollout of smart metering.
	TOU and CPP pricing	3	In addition, the benefits of time of use (ToU) tariffs and/or critical peak pricing (CPP) that might be enjoyed by some consumers (such as those who are in the workforce and at work in peak consumption/cost periods) will be a cost to others who cannot adjust their electricity usage.	Agreed. The analysis has considered a voluntary take-up of TOU tariffs and CPP rather than a mandatory introduction of these tariff structures to all customers.
	Consumer protections	4	TasCOSS shares the concerns of NERA Economic Consulting that smart meters usage will raise additional consumer protection concerns, particularly for vulnerable households	Agreement noted. See the December 2007 MCE Decision in relation to the planned consumer protection and safety review
	Consumer education	4	In addition, we agree that prior to any roll-out of the new technology, information must be provided to consumers about smart metering and associated tariffs.	Agreed. Provision of consumer information will be important to the success of any innovative tariffs adopted.
	Smart meter applicability	5	Major problem of Tasmanian consumers is the continued affordability of household electricity. TasCOSS believes that there are better solutions for Tasmanian consumers than a large-scale roll-out of smart meters, and we believe that the CBA demonstrates that consumers in Tasmania do not stand to benefit greatly, if at all, from a national smart meter roll-out.	Concerns noted. The study was not asked to consider whether there may be better ways of achieving the benefits compared with a large scale rollout of smart meters.
Public Interest Advocacy Centre	Consumer protections	2	PIAC welcomes aspects of the findings made in the current Report that further consumer protections will be required to be in place before any roll-out occurs.	Noted. The need for consumer protections and their form will be a matter for the MCE to consider further.
	Quality of results	3	PIAC has serious concerns about the accuracy of the long term forecasting of the costs and benefits of smart meters in the Report.	Concerns noted. The analysis was undertaken based on the best information available. Further trials are expected to improve the understanding of the costs and benefits.
	Scenario	3	PIAC endorses the Report's findings that a distributor led roll-out is the most appropriate roll-out model.	Noted. MCE has agreed that a distributor led roll-out is preferred.
	Business case for smart meter roll-out	3	The Report asserts that there is no commercial sense for distribution network service providers (DNSPs) to install smart meters as a business initiative as no one stakeholder would benefit. However, DNSPs in NSW have already installed more interval meters than the rest of Australia, as a business initiative. This directly challenges the Report's assertion.	The Report indicates that an accelerated rollout of smart meters would not likely arise from the initiative of any one p of the electricity supply chain because the benefits do not necessary accrue to the same party incurring the costs. This study has not considered whether replacing worn out meters with smart metering provides positive net benefits or not, which may be the justification applying in New South Wales.
	Participating stakeholders	3	Furthermore, the Report's assertion makes it unclear which stakeholders in the National Energy Market must be involved in a roll-out in order for benefits to accrue. The need for a range of stakeholders to be compelled to participate in order to capture sufficient benefits to justify a smart meter roll-out also means that it may be difficult for consumers to recoup their costs incurred in a roll-out.	Noted. The allocation of costs and benefits amongst stakeholders will be an important regulatory consideration.
	Mandated roll-out	3	PIAC supports the continuation of the practice of a market driven gradual roll-out, driven by the commercial decision making of the DNSPs, as opposed to a mandated national roll-out.	Noted. The study was not asked to consider a gradual rollout of smart metering infrastructure.

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	Allocation of benefits	4	More broadly, PIAC echoes other consumer advocate concerns that existing regulatory frameworks will not equitably redistribute benefits to consumers to offset the costs they incurred for the installation of the meter.	The allocation of costs and benefits will be an important implementation issue.
	HAN	4	PIAC supports the inclusion of a HAN.	Support noted.
NEMMCO	Cost assumptions	1	The assumptions behind different scenario costs and how these were validated are not always clear. For example 9.0% ($610m) of the variance between Scenarios 1 and 2 is Meter Cost. It appears that the difference comes from additional modem and technology refresh costs for Scenario 2. The assumption appears to be that over the twenty year cost benefit period, modems in metering installations will need to be replaced if retailers manage the implementation, but wouldn't be replaced under a distributor-led roll out. The suggestion is that networks would use data communications technology that would operate for twenty years and that retailers couldn't do the same. This assumption may need further clarification and validation, since it is not obvious why any data communication technology is going to have a longer life than an alternative given the rate of change of such technology. Furthermore, it is difficult to see why retailers wouldn't contract to use the same technology as the network is fit is more cost effective.	It is correct that that the main difference is due to meter / technology assumptions. This is explained in the Stream 6 Report. Sensitivities allow the reader to assess the impact. A bespoke technology that is dedicated to smart metering, such as mesh radio, is likely to be maintained for this purpo for longer than a "public" technology, such as GPRS or 3G, which is more likely to be superseded on a shorter timescale since it meets a range of public purposes which arise and evolve, and smart metering is a minute componen of that need Views are noted. EMCa's views on this are stated in Stream 6 Report (chapter 5), along with sensitivities to allow the reader to apply different assumptions. The consultants consider that he balance of probability is that there would be some differences in the mix of technologies used between the scenarios
Metropolis	Retailer vs. distributor costs	1	It simply defies logic that the cost of smart meters could be substantially more and the benefits substantially less under a Retailer-led roll-out than a Distributor-led rollout. NERA Economic Consulting states that "the consideration of scenarios in the analysis is not intended to inform a view as to the relative merits of one scenario over another." But these words belie the assumptions in the consultants' reports, which strongly imply that the assumptions are absolute and that Distributors are more capable of implementing smart meters than Retailers.	Concerns noted. The analysis considered the likely differences in costs and benefits between each of the scenarios in detail.
	Meter data management and meter provider markets	3	NERA Economic Consulting states that "we have not been asked to analyse in detail the feasibility of competition in the meter data management and meter provider markets." The assumptions – particularly those in the EMCa and CRA reports – create a false, unbalanced and misleading impression about the merits and shortcomings of each the scenarios with the potential to misinform the MCE.	View is noted. Responses to specific views of the submitter are outlined below.
	Benefits	3	Of concern is CRA's own assessment "that the benefits of a Retailer-led rollout are substantially the same for a Distributor led roll-out". The reduced benefits that CRA speculate under a Retailer-led rollout are – in terms of value – insignificant. Moreover, the basis upon which CRA argues that the benefits would be reduced under a Retailer-led rollout are highly suspect – being based on Distributor claims that they are "unenthusiastic" about using third party services and would not have direct access or control of meter functions.	Noted. The assessment of differences in benefits between retailers and distributors reflect CRA's views as to the potential for distributors to obtain load management benefits under scenario 2. CRA assume that those DBs with existing ripple control systems would maintain those systems rather than make use of capabilities provided by retailers through smart metering. For this reason load control benefits were assumed to be 50 per cent of those estimated in scenario 1.
	Meter churn	5	EMCa assumes that under a Distributor-led rollout of smart meters there will be no meter churn for the "period of the assessment" – locking the market into a technology solution for up to twenty-years with no opportunity to take advantage of new and evolving technologies. This is one assumption with which we completely agree. We strongly argue, however, that meter churn is a necessary and vital component of the market. Monopoly based metering services will very clearly diminish service and product innovation, constraining retail competition. But an effective rate of meter churn is a sign of a healthy and vibrant retail market.	If churn brings further benefits, then these would need to be quantified. The costs of churn have not been included in the analysis for Scenario 2. Similarly, Metropolis has not quantified the benefits. The balanced view is that each met will be churned only if doing so has a net positive benefit.
	Analysis assumptions	6	The assumptions are too extreme and no proper examination has been undertaken to determine the strengths and weaknesses inherent in any scenario.	Noted. All of the assumptions used in the report have been based on evidence, where available, or the independent vie
Metropolis/ Centurion Appendix 1	Cost of communications infrastructure	1	In a competitive market, density implications drive technical innovation aimed at eliminating the use of data concentrators and reducing capital and operational costs for point-to-point communications. Point-to-point meshing technologies are now available that allow between five to fifteen meters to share a single GPRS (or 3G) modem at a cost less than concentrator based mesh-radio solutions – with the addition of a HAN at no extra cost. Point-to-point solutions allow any retailer – through any accredited Metering Data Agent – to communicate directly with any meter for which it is responsible. As such, Metropolis Metering Assets is today deploying such solutions to residential sites with the "contractual certainty from the retailers sufficient to underwrite rolling out such a system".	View is noted. There is a wide range of mesh radio solutions, of which the (presumably) Zigbee-based mesh is one.

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	Interoperability	2	It is not reasonable to conclude that the choice of communications technologies and system architectures will differ between the scenarios such that negative cost and benefit assumptions apply only to one scenario while not the other. The choice of available technologies applies equally to both scenarios. The Distributor-led rollout assumptions: 1) come at the cost of innovation and advancement in delivery of further services; and 2) locks the market into a solution-suite chosen at the onset of the rollout for 15+ years without change. This conflicts with the rankings in table 17.1 (page 189 of the NERA report) which says a Distributor-led rollout would lead to greater "efficiency and innovation in electricity business operations" and better promote "the long-term interests of electricity consumers" than a Retailer-led rollout. It is absurd to suggest that a either a modem or a meter might be changed – which implies that there would be two Metering Providers for a connection point – one for the modem and one for the meter. This is very unlikely to happen in practice. The consultants do not discuss the use of open (or even standard) protocols to enable interoperability between deployed meters – regardless of what communications medium is used – and data collection and transactional management systems so that any MDP can communicate with any meter to which it is assigned. Open protocols negate the need to replace modems (comm. modules) at the meter, which is simply another form of churn.	View is noted. As stated in the Stream 6 report, EMCa considers that the same technology options will not suit each scenario, to exactly the same degree. This is not a correct interpretation of the assumption. The Stream 6 assumption is consistent with the views expressed by Metropolis that, with contestability, there is likely to be innovation, and that this may take the form of better meters and/or better communications paths to those meters . The Stream 6 cost estimates, as they relate to these scenarios, include the cost of facilitating such innovation (through separating the modem from the meter) but, as stated above, do not include the costs of churning the new meters themselves. This does not assume two metering providers at a given NMI. There is discussion of interoperability in the Stream 6 and Stream 1 Reports. Consultants consider that open protocols do not necessarily imply that the communications path to the meter would never be upgraded.
		3	It is not reasonable to assume that parties would choose to adopt practices that are clearly not in their own commercial interests. Why would Retailers, or their appointed Metering Providers, deliberately install non-interoperable smart meters that invite meter churn and drive up their own service charges to accommodate the risk? This assumption would not create a barrier to customer transfers – it would create a situation in which meters would be guaranteed to churn. Adopting this approach requires the Metering Provider to charge the Retailer more in service fees to off-set the churn risk. As such, it is not in the Retailers' or Metering Providers' interests to do this – particularly given that more commercially orientated Metering Providers (read: Metropolis) will be waiting to offer lower prices to replace those meters.	View is noted. This is a commercial judgment call - balancing the risk that an integrated meter may make it more like that the meter is churned, with the extra cost of providing a meter with separate modem, but which may make it less likely that the meter is churned. This matter also depends to a considerable extent on the Responsible Person provisio in the NER over this period. The impact of the "modem separability" assumption is stated in the Stream 6 report and could be considered by policymakers in regards to the matter of meter ownership.
	Communications technology in rural areas	3	Why wouldn't a Distributor make its distribution network available for DLC and/or PLC, in a competitive market, under the right commercial terms? Assuming that PLC is a viable communications technology there is no reason to assume that a third party could not enter into a commercial arrangement with a distributor to utilise its network and cover the cost of deployment and ongoing operation. Late in 2007 the distributor hosting the Victorian PLC trial concluded that the PLC system would materially impact the quality of supply to many customers beyond regulatory limits for harmonics and/or voltage flicker. PLC is a very low-bandwidth communications mechanism and may not support the minimum functional specifications. Given the uncertainty regarding the effectiveness of PLC it would seem prudent to err on the side of caution and assume GPRS/PSTN for both scenarios in this analysis. PSTN (as described by EMCa) is not an acceptable option as it does not deliver the minimum functional specifications. It must be accepted that a minimum number of remote sites may not be suitable for remote communications in any form.	For reasons explained in the Stream 6 Report, EMCa considers that PLC in particular is too tightly integrated into a distribution network for any DB to realistically be able to provide access to the Distribution Network for use by anoth party. In regard to DLC, the costs are similar for mesh radio, which is an option that is available to parties other than DBs, as is assumed in the Stream 6 report. It is conceivable that a DB may choose to install a PLC system and to provide a communications service, in a scenario where retailers (or independent metering service providers) are responsible for the meters themselves. This is not explicitly presented, as it is not one of the defined scenarios. However the sensitivity analysis in the Stream 6 report (e.g. the Rural PLC sensitivity for Scenario 2) provides the information required by policymakers to assess this sub-option. EMCa has investigated concerns about quality of supply associated with the PLC Victorian trials, as explained in the Stream 6 report. Sensitivity information on technology assumptions are provided in the Stream 6 report. The Stream 6 report acknowledges that PSTN does not fully deliver the minimum functionality, and that the options for remote communications are limited; the cost materiality of this issue is relatively small and could be further investigat in refining any jurisdictional policy decisions, following a decision to proceed with a roll-out.
	Quality of supply data	4	Quality of supply data (including events, sags/swells, etc.) is collected daily by Centurion and can be delivered to each distributor on a daily basis with metering data. Centurion offers a direct access portal to Distributors for network diagnostic purposes.	Noted. It is not clear whether this information can be adequately integrated into distributor network management systems in order to provide sufficient information to optimise the operation of the network. The results have therefore not been adjusted, but the cost effectiveness of this approach could be considered further.
	Smart grid systems	4	The functionality of smart grid systems and smart meters operate quite independently. A smart grid system still needs to remotely monitor and con network assets, switches, etc. for planned and unplanned outage management purposes, regardless of whether smart meters are deployed or have load control capabilities at the connection point.	Agreed. However, the study has focused on the rollout of smart metering as compared to smart grid systems.
	Outage notification	5	It is not confirmed that PLC supports outage notification. Point-to-point and point-to-point mesh solutions support both 'last gasp' and 'ping' outage notification options.	Noted. PLC will require further trial work to confirm its suitability as a communications platform to support smart metering.

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	B2B transaction hub	5	The assumption that only one party (either the Distributor or the Retailer) can communicate directly with the meter and the other must utilise a "transaction hub" is noteworthy only because the consultants assume that Distributor benefits will be diminished if it is not the party controlling the communications. It is not explained: 1) how a "transaction hub" better ensures that retailers are communicating (and thereby controlling) only those meters for which they are responsible; nor 2) why Distributors would be "dependent on the actions of retailers" if retailers could initiate transactions directly with the meter. It is not reasonable to assume that Distributor 'benefits' would be diminished under a Retailer-led rollout because smart meters functions could not be utilised directly, without acknowledging that Retailer 'benefits' would be equally diminished under a Distributor-led rollout. Retailers also benefit from performing functions in real time rather than relying on a transaction hub. Transactions include - special reads, remote connections, product reconfigurations, time switch settings, in home display communications, etc. The argument goes both ways if it is assumed (incorrectly!) that only one party can have direct access and control of a smart meter's functions. However, technologies easily allow for both Retailers and Distributors to directly access smart meters without the need for a transaction hub. Something that third party Metering Providers and Metering Data Agents currently deliver!	For the same reasons that MSATS is used currently, a transaction hub is assumed to be more efficient means of managing the (changeable) Retailer/Responsible Person/MDP/Customer/LNSP relationship, ensuring it is synchronised with those relationships (as per MSATS) and being a more efficient way of managing the transactions than building a maintaining individual B2B interfaces between the different parties. The cost of this hub is small. It seems axiomatic that DBs will be dependent on retailers in regard to DB-initiated transactions, if retailers (or any party other than DBs) is not the Responsible Person. View is noted. Network management signals must be given priority. Any system must comply with the NEM objective. EMCa has assumed that the meters would not have the capability of being "managed" by more than one party, according to their roles. This was considered, but input suggested that this would result in a much more costly meter. Therefore the analysis assumes that the meters are designed to bind to a single NMS (which is managed by a single party) and that all functions which involve other parties take place through back-end IT interfaces including, where it is most efficient, a B2B hub.
	Role tracking	6	It is not reasonable to propose assumptions that ignore known market practices. MSATS tracks all market role changes and provides all participants with updated role changes and is the database of record for role assignments. Distributors are required –and currently – synchronise their systems against MSATS change request notifications at all times. Distributors currently use it to track thousands of transfers between Retailers each day so that network charges are properly applied. MSATS is also used to track changes in Metering Providers and Metering Data Agents across the NEM. Why assume that under a Retailer-led rollout Distributors would not be able to keep track of role changes when it is something they are required to do on a daily basis right now? This assumption suggests that Distributors do not conform with NEMMCO's MSATS/CATS Procedures and are currently incapable of keeping track of transfers/role changes at sites for network billing purposes. Centurion & Metropolis maintain all participant relationships in their respective databases and restricts direct access to meter functions to the current Retailer and Distributor at each connection point.	The Stream 6 analysis assumes the use of MSATS in the way described by Metropolis.
	Meter data management	7	Of the "sixteen accredited Metering Data Providers in the NEM" today – one (Centurion) is independent and not aligned with any Distributor. As the overwhelming majority of Distributors will continue to in-house this service under a Distributor-led Rollout – Centurion will be out of business! It is an accreditation requirement that Metering Data Providers maintain all interval data for a period of seven years. A well designed data store is also required to facilitate data validation, substitution and estimation processes, which rely on historical data. As such, the availability of a secure data store (with DRP) is included in the cost of the MDP Meter Data Management Systems – saving the market approximately $100 million in unnecessary infrastructure duplication. Centurion offers Distributors and Retailers data aggregation services to negate the need to invest in: 1) large volume data-warehouses; and 2) billing and trading systems upgrades to aggregate interval values.	Information is noted. It appears to be consistent with the assumptions made by Stream 6.
	Distributor system enhancements	7	No explanation is given for the assumed increase in Distributor systems costs under a Retailer-led rollout. In fact, this assumption contradicts the Meter Data Management assumptions above.	The reasons for the differences are explained in sections 7.5 and 8.6 of the Stream 6 report.
	Economic regulation	7	The cost of economic regulation has not been considered.	Agreed. The cost of regulation, nor the economic cost of no regulation was not explicitly considered as part of the study.
	Economic compensation	7	The cost of economic compensation to existing service providers has not been considered.	Agreed. This is a matter for the MCE.
Metropolis/ Centurion Appendix 2	Comments on approach adopted in the CBA	1-5	Appendix 2 provides a high level description of alternative assumptions that could have been made in the analysis and the likely implications for the results.	The implications of alternative assumptions have been noted. The assumptions made in the analysis reflect the views of the consulting team having regard to all of the information available during the course of the study. In some instances is possible that different assumptions could have been made however, the consultants are confident that the appropriate assumptions have been made in all areas which might have a material impact on the results and conclusions. Where appropriate sensitivity analysis has been undertaken to address uncertainty that may have been present.
	Innovation in provision of meters	2	The evolution of smart metering technologies will stagnate under a Distributor-led rollout, because Distributors are limited to regulated cost recovery. The opportunities, and incentive, to purchase 'improved' technologies will be limited - discouraging further investment in product research and development by vendors/suppliers.	Innovation in metering technology will develop in response to demand and supply conditions in the meter supply market. Given the long life of meters, the likely economic opportunity to introduce innovative metering technology will likely not differ between a distributor-led as compared with a retailer-led rollout of smart metering. It is agreed that retailers are likely to have a greater incentive to compete on services provided via innovative metering technologies, while distributors may have lower incentives to invest in these technologies. This highlights the importance of retailers being able to negotiate with distributors on the metering functionalities provided to their customers under a distributor-led rollout.
PowerWater	NT market design	1	The CBA does not adequately reflect the considerable uncertainty in future NT market design.	Noted. Changes in the NT market design have not been considered in the analysis.
	Capturing benefits and costs	1	The statement "the inability of any one stakeholder to capture all of the benefits may therefore mean that there is no business case foamy individual stakeholder to undertake smart meter roll-out" does not relate to the NT market. Power and Water Corporation is currently the sole provider of all electricity services.	Agreed. If there was a positive business case, Power and Water Corporation could undertake smart metering rollout without needing a mandate.

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	Uncertainty of results	2	Given the Report identifies a variation in net benefits in the best case scenario (DB-led) of between -$3 million and +$23 million, there appears significant room for concern.	Noted. The range reflects uncertainties in the estimates of costs and benefits.
	Meter installation costs	3	While on paper it may be possible to achieve the $60-$80 per meter estimate, the Corporation believes that $126 per meter is more realistic in the current NT market. This is based on installation prices received in a recent tender ($323 per meter with asbestos boards and $235 without).	View noted. It is assumed that the information provided is not for a comprehensive roll-out. Submitter does not comment on the particular installation cost assumptions made in the Stream 6 report

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	Asbestos boards	3	The Report appears to assume that asbestos boards will not be replaced during the roll-out, which is contrary to the Corporation's current policy.	This is correct and is based on discussions with a range of DBs. If the replacement of asbestos boards is Corporation policy, then a smart meter roll-out would facilitate this; it is not axiomatic that the cost of replacing asbestos boards is an economic costs attributable in total to the smart meter rollout for CBA purposes
	Installation cost of single phase meters	3	In 2006-07, the Corporation engaged a consultant to investigate the economic feasibility of rolling out interval meters in the NT. The consultant found that the average cost of installing a single phase meter was $107.81. This estimate is subject to inflation, but even without it, it is significantly higher than the current Reports' estimates.	The difference in installation costs is acknowledged. The absence of information on the basis for the consultant's estimate does not allow for a critical review of the reasons for the difference.
	Meter costs	3	The Stream 6 Report identifies the total costs for meter purchases in the NT in the range of $261 to $418 per meter. The Corp. considers these costs to be relatively low. This is due to the study utilising a minimum economy of scale of 250,000 meters. In the NT, based on the potential regulated market of Darwin-Katherine, the number of meters required is likely to be less than 60,000. Consequently, the Corporation could not achieve the same economies of scale.	The economy of scale arguments are acknowledged. There is a counter argument, that the Corporation could obtain the advantages of economies of scale through entering a joint purchasing arrangement with another DB. Should other DBs undertake a major rollout of smart metering then the market price for smart meters would reduce even for those that acquire them in smaller volumes.
	Communication	3	The IT communication costs for all options identified in the Stream 6 for the NT appear below average. Although only 5% of Darwin-Katherine customers are classified as rural, the distances that the communications network will need to cover are significant. Further, there is a shortage in existing communication infrastructure.	The communications costs tend not to be distance-related (for PLC or for point-to-point solutions, to the extent that there is coverage)
	Complexity of smart meters	3-4	Although smart meters would provide the Corporation with a cheap alternative to the current prepayments meters (token-operated), they increase the complexity for customers who have a varying degree of literacy.	View noted. There is a contrary view that with smart meters once the customer has paid at retail point of sale to have more credit put on their meter it happens without further action by the customer (credit is remotely communicated to the meter). There is no token to lose or be broken, no token mechanism on the meters to be vandalised etc.
	Manual disconnection and reconnection	4	The Reports appear to assume that our disconnection and reconnection costs are related to our charges and that the fee is applied to both the disconnection and reconnection. Recent investigations have suggested that the actual cost for a business hours disconnection and reconnection in the same day is $19.27 (flat rate). This is significantly lower than the $50 to $60 identified in the Stream 6 report.	Costs noted. The charge is what customers pay.
	Avoided cost of meter reading	4	The Corporation will be unable to achieve the assumed avoided meter reading saving in the near future due to staffing implications. If smart meters were only rolled out in the Darwin-Katherine System, the Corporation would be required to operate two systems. It is therefore unlikely that the resources required would reduce; it is in fact more likely to require increased staff numbers to manage the dual systems.	Most of the benefits from the avoided meter reading cost is the result of not requiring staff to physically take meter reading. The need to maintain two backend systems might increase costs however, these increases would be more than offset by the reduced costs arising from no longer being required to read electricity meters. Where current electricity meters are read at the same time as water meters, then these costs may not, in practice be avoided.
ETSA Utilities	Avoided cost of meter replacement	email	Meters replaced in 2007 - 4,000; meters planned for replacement in 2008 - 7,500 - 8,000 as part of our bulk meter replacement programme. The ETSA bulk meter replacement programme was $1.2m in 2007, so double that for 2008, i.e. $2.4m. 800-1,000 meters are replaced each year due to faults, i.e. 0.075 - 0.094% pa. Worth about $0.45m pa. This still is a far cry from the avoided cost stated by CRA in section 6.1 of $8.5m - $14.5M pa (Table 67, App. H) for a meter replacement programme. ETSA figure for 2008 planned plus unplanned 2.4 + 0.45 = ~$3.0m.	Noted. There may be some overstatement on the meter replacement quantities in the CBA arising from the assumptions used. However ETSA's total replacement rate each year is less than 1% which implies metering lives over 100 years. is suggested that while this may be workable in the short term over the next 20 years it is not sustainable. Also the avoided cost of metering includes new meters for new customers (growth). The assumed customer growth number in the CBA for SA is 1% to 1.2% (provided by SA). This is 8180 to 10,483 new customers per annum that all need meters. This is another $2.4m to $3m on top of ETSA replacement costs of $3m gives $5.4m to $6m even on very reduced replacement levels. However if as noted in SA comments below the growth rate of new customers is 1.88% then the total cost of new meters should be $4.6m to $5.8m. Adding this to the SA estimate of replacement meters gives $7.6m to $8.8m which is getting closer to the CBA numbers. The adjusted CBA estimates of avoided costs were substantially revised compared with the earlier results, reflecting the new information provided by ETSA.
	Meter replacement rate	email	CRA's estimate of meter replacement rates of 2.70% for elec. mech. & 7.17% for electronic meters (6.1.1) are orders of magnitude higher than our rate of about averaged 0.40% pa, on average.	See comments above. If the failure rates of smart meters are similarly better than our assumptions then the whole of life cost for smart meters would reduce proportionately.
	Growth rate	email	The growth rate range for SA also seems a little low at 1.00-1.20% (Appendix E, Table 65) as we estimate it to be around 1.88% pa.	See discussion above.
	Time switch replacement	email	ETSA Utilities does not have a replacement plan for time-switches specifically. If a time-switch fails at a controlled load installation (e.g.. supply for water heating), both the meter and time-switch would be removed and a new two element meter (with integrated electronic time-switching) installed. Individual time-switches (mechanical or electronic) are replaced on failure with new electronic time-switches. ETSA installs time-switches of three different types/ ratings and in the immediate past 12 month period replaced approximately 2,700 units. The cost of time-switch installation was approximately $970,000 which includes an estimation of $270,000 for labour. Requests for time-switch adjustment are received mainly from retailers and are managed via the MW defect notification process. In the immediate past 12 month period, ETSA attended approximately 120 metering sites for adjustment of time-switches. The cost would involve labour (& transport) only estimated at $12,000. Section 8.2 estimates that ETSA spends $1.7m pa on time switch replacement, which should be adjusted to $970,000 pa.	Noted. The time switch failure rate does look unsustainably low as a number that can be used across the 20 year CBA period. Our estimate is that there are some 144,000 time switches in ETSA based on 18% of customers having off pe hot water. 2700 replaced each year is only a rate of 1.8% implying a >50 year life. The cost of installing new time switches should also be considered.

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	Prepayment meters	email	The report estimates the cost of installing PPM is $3m pa for SA. This is equal to 10,000 meters pa. 10,000 meters per year for the life of the model is not sustainable. Aurora's plan is to have 10,000 prepayment meters in Adelaide within 3 years, so if they achieve that the $3m figure is correct but not for each year of the business case. But it is hard to see the net benefit in the model as the cost is to Aurora as they pay to have them installed for their new customers, we would earn say $1.5m to install them at a margin of no more than 12%, i.e. profit of $180K over the 3 years. Aurora have installed ~42,000 in Tasmania over 12 years. They believe that the figures in the CRA report were obtained by estimating Aurora's figures and adding 2 other retailers doing the same in SA. This is fanciful. 1% of the existing population of meters for 20 years is an over estimation of the requirement for PPM and an over estimation of the benefit.	Noted. The 10,000 meters is based on the Aurora numbers for 3 years. However there is no indication that this is the saturation level. The net benefit is that with AMI the customer does not have to pay for meters to be replaced to have prepayment tariff capability.
	Meter installation rates	email	The rate used for SA is 14 - 16 meters per day excluding difficult installations. We discussed the assumptions behind this with Phil Perry e.g., no commissioning, and still feel that the rate is too high. We believe the rate for SA should be closer to 10 per day. The time to install comms is not included here but is significantly understated.	The rates that were used for SA in the CBA were lower bound 10 to 18 per day and upper bound 8 to 12 per day depending on meter type. The time assumed to install integrated mesh radio data collector and meter is 1 hour in addition to the installation time for a meter - total 1.5 hours. Given that collectors are self configuring for meters attached to them, this is adequate time to setting up the upstream communications.
	Installation costs	email	We have previously provided revised install costs (17/3/08), which have been confirmed as received but not as yet included in the reports. The costs in the table for SA are significantly lower.	The reports were finalised before these revised counterfactual installation costs were received. The increases in the counterfactual unit costs were mainly to do with increasing the travel time resultant increases of between 10% and 20% to the upper bound counterfactuals. The revised install costs were incorporated in the final adjusted CBA results.
	Customer fatigue in heat waves	email	Heat wave in 2007/08 was 14 consecutive days, the longest on record (albeit late in the summer), so if climate change is becoming evident, this type of event will become more probable in the future.	The impact of consecutive peaks on demand response has not been explicitly included in the demand response benefits. For that reason the demand response estimates may be considered as an upper bound in areas where consecutive peaks occur.
	Difficult installations	email	The issue of difficult installations for SA, particularly asbestos meter boards, has been understated. In our response to the issue, we stated that we do not have a problem with these boards. That did not mean that we do not have any. What we would have gone on to say is quizzed on this is that we have safe work procedures for handling these boards and if at all unsure even then we request the customer to replace the board before fitting new meters. The NERA report talks about new meters that fit the same holes and footprint of existing common meters but this would not be practical for the great variety of meters that exist out there. An estimate is in SA, 1% of residential and 5% of small business meter boards would be asbestos. Another issue is that the new meters are much lighter and only last 10 - 12 years, the wiring supports the meter to a great extent and double sided tape would more than adequately fix the new meter to an old asbestos meter board if in good condition and a customer could not afford to replace it. The number of difficult installations due to wiring we estimate to be 3.3% (based on our experiences with recent bulk meter changes across SA) with an average cost to the customer of $500 (assuming 3 hours for an electrician to rectify).	The Stream 6 report does not assume that asbestos boards do not exists; rather it assumes that there is a percentage of "difficult installations" which would include asbestos boards and also rewiring and difficult access installations. The comments regarding a means for cost-effectively managing asbestos situations is noted. The Stream 6 report assumes between 5% and 15% incidence of "difficult installations" (all types) and costs for SA ranging (depending on meter types) from around $75 to $190 per urban single phase difficult installation. It is not clear whether this aggregate assumed cost impact is inconsistent with the information provided by the submitterThe adjusted CBA estimates have therefore not been changed in response to this comment.
	Scenario	email	We have had input into the ENA submission, and therefore agree with its key points. We support the position of a Distributor led roll-out of SMI where the business case supports the benefits outweighing the costs.	Noted. MCE has agreed that a distributor led roll-out is preferred.
	TOU tariffs	email	The introduction of TOU tariffs we agree would be critical to the success of an SMI roll-out to deliver the assumed benefits as would the installation of some form of in-home display paid for either by the retailer or customer. Displays need not be a separate device these days but a unit would be required to send a display to some screen in the home such as the TV or PC.	View accepted. No implications for the final report results.
	Value of deferred augmentation	email	In our case with small zone substations of 4MVA and little spare capacity for customers failing to switch off load on the last day of a heat wave, even if we were to defer augmentation for 1 year the benefit is about $400k. The risk of deferring augmentation needs to be accepted by the community as the consequence of an error in sustained reduced capacity supported by customer behaviour is load shedding at the peak time of use, i.e. 4 - 6pm. The real risk for us is that augmentation deferral would not be realised in subsequent years of the business case for that jurisdiction .	Noted. The risk of network deferral benefits being realised due to consecutive peak days has not been explicitly considered in the analysis.
	Cost recovery	email	For businesses such as ours to deliver mostly societal benefits which we are not discounting in any way, there must be a structure in place for full cost recovery.	Noted. Regulatory arrangements for cost recovery are a matter for the MCE and jurisdictions.

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ACOSS	National Rollout of SM	2	Suggest that there may be less risky, less expensive, more immediate, more consistently applicable means to increase efficiency, manage demand and reduce consumption.	Noted. The CBA was asked to consider the benefits and costs of smart metering and direct load control only.
	National Rollout of SM	3	Support program of trials designed to test and evaluate technologies and customer response, along with real world costs and benefits.	Noted. MCE has agreed to conduct substantial trials in most jurisdictions.
	Existing meter stock	6	Analysis should consider the cost of the existing meter stock being made redundant.	The redundancy of the existing meter stock is a sunk cost that is properly not included in the economic CBA.
	Existing meter stock	6	The cost of disposal of the existing meter stock should be included in the analysis.	The treatment of the existing meter stock is not relevant to a decision about whether to rollout smart meters, and is therefore not included in an economic cost benefit analysis. How the existing meter stock is subsequently treated will be an issue for consideration as part of the implementation of a rollout of smart metering.
	Treatment of benefits	7	Concern about the regulatory treatment of business efficiency benefits, given costs will be passed through to customers during the rollout, while benefits will not be passed through until subsequent periods.	Noted. It is not likely that the cost of disposal would significantly affect the total costs of the rollout. Noted. This issue will be important consideration as part of deciding how benefits are shared between users and businesses.
Eastern Metropolitan Regional C	Functionality 16	1	Supports inclusion of an interface with a HAN in the functional specification, as an essential tool to educate and encourage consumers to improve energy efficiency	Support noted.
St Vincent de Paul Society CUAC	Distributor-led rollout	1	Agree that a distributor-led rollout is appropriate.	Noted. MCE has agreed that a distributor led roll-out is preferred.
	TOU tariffs	2	Concerned about the take-up rate assumptions for TOU tariffs in the Victorian demand response analysis. Believe that distributors will likely move all customers to TOU, leading retailers to do the same. A higher take-up rate is believed to significantly affect the modelling outcomes and therefore the overall costs and benefits. Would like further modelling of different take-up rate assumptions to be undertaken.	Concerns noted. Increasing the take-up rate assumptions would be expected to increase the demand response benefits.
	Demand response	2	Concern about the uncertainty surrounding the likely demand response resulting from the provision of an HAN and IHDs. Recommend that a revised CBA include new trial information as it becomes available.	Noted. There is considerable uncertainty about the demand response benefits arising from the provision of IHDs. Further trial work in Australia is expected to provide further information on this response in due course.
	Functionality 16	3	Believes that the take-up rate assumptions for TOU/DLC and TOU/CPP are overly optimistic given they are based on voluntary take-up.	Noted. The take-up rate assumptions were based on international experience, and a range was considered, including a lower bound of zero, to reflect the uncertainty involved.
	Functionality 16	3	Should investigate the option of providing HAN technology as an optional addition to the meter, rather than incorporated in the national minimum functionality. This would lower the cost (as it is included only for those households that make use of the functionality).	Noted. The MCE has agreed to include the HAN in the national minimum functional specification. Including the capability for a HAN in some but not all meters would result in the potential loss of benefits from the provision of DLC. These benefits were found to outweigh the cost of providing the capability in all meters. This result critically depends on the likelihood that the DLC up take assumptions are achievable.
	Review process	4	Should incorporate a formal review process of the cost/benefit results as information emerges from trials being undertaken in Australia.	View noted. This is a matter for the MCE.
	Allocation of costs	4	Believe that low-volume customers will face a disproportionate cost increase associated with the rollout. Recommend that MCE implement pricing principles that allocate the costs of the smart meter rollout (or a higher proportion thereof) to higher consumption households.	View noted as a matter for consideration by the MCE.
	Pass through of benefits	5	Given that customers will be paying the costs of a rollout, there is concern that any efficiency benefits will be kept by the business during the regulatory period before being passed back to customers. To address this concern, recommend that business efficiency benefits be passed back to customers on an annual basis as part of the regulatory framework. Recommend that an annual review process be implemented to ensure that customers' receive the benefits.	The allocation of costs and benefits will be an important implementation issue.

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AGL	Communication costs	1	Concerned that the main difference between the retailer-led and distributor-led rollout is communication costs, which are subject to a degree of conjecture.	Noted. Allocation of costs between retailer and distributor led scenarios undertaken based on a view of likely differences in communication costs.
	National assessment	3	Concerned about a rollout of smart meters in some but not all jurisdictions. Indicates that the achievement of maximum efficiency and competitiveness of retailing rely heavily on economy of scale with uniform national systems and processes	View noted. The results suggest that the net benefits in some jurisdictions may be negative. It is unlikely that these costs would be outweighed by the benefits associate with uniformity in the timing of the rollout. The specification of a national minimum functionality is to ensure that the meter specification is similar across all jurisdictions.
	Functionality 16	4	Supports recommendation relating to inclusion of functionality 16.	Support noted.
	Retailer versus distributor-led	4	Further work should be undertaken to assess the costs and benefits associated with market efficiency or inefficiency relating to competition or lack of competition in smart metering provision.	View on further work noted. This is a matter for the MCE.
	Functionality 23 and 24	5	Supports an open standard that allows third party access to both hardware and software layers.	View noted.
	Non-smart meter DLC	6	Supports DLC rollout via smart meter rather than as a stand-alone DLC approach to preserve a national approach to the rollout.	Support noted.
	Costs	6	Study findings should be treated as preliminary estimates and a further cost review/technology trials be undertaken prior to final decision on the rollout is made.	Noted. The MCE has agreed to conduct substantial trials in most jurisdictions to better understand the costs and benefits.
	Franchise model	6	Could be considered as part of a future review of the impact of competition on costs and benefits. Need to consider the appropriate governance structure.	Noted. Governance arrangements are a matter for the MCE and jurisdictions.
	Feasibility of PLC	6	Considerable uncertainty about the technical feasibility of PLC suggests that further testing should be conducted.	Noted. Further trial work will be conducted to determine the feasibility of PLC technologies.
Origin Energy	Underlying detail of the Scenarios	1	Origin believes that while the four scenarios chosen are appropriate, some of the underlying detail is misconceived. For example, distributors may have a significant role in the deployment of AMI where this is undertaken in a contestable environment. Practically, distribution businesses (and other vendors) would "lead" a mandated rollout, and retailers (and by association their customers) would contract and pay for these assets and services over time. This, as Origin sees it, is the key difference between any rollout approach selected; either offers of AMI services are made to affected retailers on a contestable basis (as per current National Electricity Rule provisions), or AMI is prescribed and regulated through the relevant regulator (most likely the AER).	The scenarios were developed by the Smart Metering Working Group following consultation with stakeholders. They were intended to provide a spectrum of options for a possible rollout of smart metering. While distributors may have a roll to play in a contestable rollout of smart metering infrastructure, to draw a clear distinction between the scenarios, this possibility was excluded from the analysis.
	Results of the scenario	2	Origin also believes that defining the scenarios as "distributor-led" or "retailer-led" prejudices perceptions around them. A more appropriate description of scenarios 1 and 2 would be an exclusive or contestable rollout approach, since in essence, these descriptions more accurately describes the market conditions in which AMI would be deployed. Origin would emphasise that the benefit of AMI to consumers and market participants is not limited to the means of a rollout, but the efficiency, flexibility and responsiveness to change that the market demonstrates once the technology has been deployed.	The terms 'distributor-led' and 'retailer-led' were developed by the Smart Meter Working Group following consultation with stakeholders. The labels were developed for ease of reference. Scenario 1 was in essence a distributor exclusive rollout while scenario 2 was a potential contestable rollout of smart metering infrastructure.
	Results of the scenario	2	Scenario 1 has certain advantages over alternatives tested in that it provides some degree of certainty around roles and responsibilities, however additional costs inherent with exclusive provision of metering have not been measured over the study period (for example, the loss of dynamic efficiency and locking the market into a particular technology solution for an extended period of time).	Consideration was given to the potential benefits and costs associated with scenario 1 as compared with the alternative scenarios. This led to different assumptions surrounding the possible technology that would support the scenario. Quantifying the inefficiency between a regulated versus contestable approach was not considered feasible as part of the
	Efficiency and innovation in electricity business operations	2-4	The incentive to innovate will be reduced under an exclusive rollout because: retailers will only have the option of negotiating with a single provider of AMI should they seek services and functionalities above any regulated minimum; this negotiation will have to be repeated for each monopoly provider of AMI if the retailer chooses to provide the enhanced services to their customers across jurisdictions or even with jurisdictions or even within a jurisdiction where more than one monopoly provider has a geographic territory within its borders; there is little guarantee that any innovation developed will not simply be offered to a retailers competitors once the investment has been made by the intiating retailer. This outcome is less likely to occur under scenario 2, since retailers would be free to negotiate capabilities above the minimum specification according to their individual circumstances and requirements, and are able to approach an optimal number of parties on a competitive basis in procuring such services.	This statement highlights the necessity of providing a mechanism to facilitate negotiation of services and functionalities by retailers with distributor providers of AMI. Whether this problem is less likely to occur under scenario 2 depends on an assumption about the likely effectiveness of competition in AMI supply.
	Efficiency and innovation in electricity business operations	3	The higher level of business efficiencies determined under scenario 1 relative to other scenarios is based on the assumption that use of concentrators as part of the communications system will be commonplace. Origin would ask if the purpose of the rollout is to provide AMI services to consumers if it is intended to optimise the operation off the monopoly poles and wires business. To the extent any benefits can be captured by the monopoly infrastructure business, these can be realised in a number ways, independent of the rollout scenario chosen.	The purpose of the analysis was to estimate the net benefits associated with each rollout scenario. There was no specific purpose for the rollout considered as part of the analysis. It is acknowledged that some of the benefits considered in the analysis could be achieved in ways separate from AMI.

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	Efficiency and innovation in electricity business operations	3-4	The assumption that the communications technology in rural areas under scenarios 2 and 4 would be PSTN ignores other available communications technologies currently in use (such as wireless wide area networks). This assumption is quite limiting and significantly favours scenario 1 in terms of network efficiency benefits. It is doubtful that retailers would be satisfied with a PSTN solution, given the alternatives available.	The technology assumptions used in the analysis were developed by EMCa, who also undertook detailed sensitivity analysis. The actual technology used will be based on available technology and relative costs/benefits at the time of a specific AMI rollout.See Chapter 5, Phase 2 Transitional Cost Report.
	Efficiency and innovation in electricity business operations	4	Basing the significant reductions in benefits associated with load management under scenarios 2 and 4 upon the retention of control over load management systems by distributors is untested in the market and is not sufficient of itself to warrant the approach adopted in the analysis. The heavy discounting of distribution business efficiency benefits under scenario 2 and 4 relative to scenario 1 (described on page 57 of the Overview Report) suggests that these benefits owe more to network optimisation brought about by the strategic placement of data concentrators rather than the deployment of advanced meters to end use customers. To the extent that the benefits that accrue to the regulated network business depend on communications platforms that are not contestable, the cost to consumers due to the loss of competitiveness should be offset against these benefits.	The outage detection benefits assumed under scenario 1 are based on an assumption that distributors can better manage network outages with the information provided through AMI. The technology assumptions for scenarios 2 and 4 do not allow for sufficient information to be obtained to manage network outages in a similar way, and thereby CRA discounted the benefits for those scenarios.
	Efficiency and innovation in electricity business operations	5	Origin considers that improvements in business efficiency and innovation (including price signals for efficient investment) are more likely to occur in scenario 2 than any other scenario tested in the analysis.	Noted. The Phase 2 reports explain the justification for a different view. See in particular the summaries in sections 6.4 and 5.1.4 of the Phase 2 Overview Report and the respective CRA and EMCa reports for detailed analysis.
	Promoting the long term interests of consumers	5	On page 191 of the Overview Report, NERA contend there is a strong relationship between the first objective and the NEM (and MCE assessment) objective of promoting the long term interests of consumers. For the reasons discussed above, Origin believes that at the very least Scenario 1 and 2 would be equally ranked on both objectives.	The analysis of the objectives follows the detailed analysis contained in the reports. Scenario 2 was ranked second to scenario 1 for the objectives: efficiency and innovation in electricity business operations; and promoting the long-term interests of consumers; because the net benefits were higher under scenario 1 as compared with scenario 2.
	Network participation under scenario 2	5	It is assumed that distribution businesses would not participate in the provision of AMI in scenario 2, as discussed on page 67 of CRA International's stream 2 report. Origin does not consider this a plausible assumption. To the extent that distribution businesses have commercial advantages in the supply of AMI, it is unlikely that none would participate in the market. Secondly, current market rules require distribution businesses to make an offer for Type 4 (remote read) metering services where requested by the Responsible Person. Such offers are made on a commercial unregulated basis.	This assumption was provided to the consulting team as part of the definitions of each scenario. These definitions were developed by the SMWG in consultation with stakeholders.
	Technologies applied	5-6	Conceivably, line carrier communications technology may be the most viable and cost effective technology in a particular area or areas under scenario 2. It would therefore have a competitive advantage over alternatives (since the cost of acquisition for a new retailer would include the cost of an alternative communication technology). Should an alternative be chosen by a particular retailer, there would presumably be sufficient commercial drivers for this to take place.	Communications technology is rapidly evolving and the most cost effective approach at the time a rollout is undertaken should be considered. For the purpose of this study, EMCa analysed the available technologies and their respective costs in detail before deciding upon the costs to use in the analysis.
		6	Therefore we consider the exclusion of line carrier technologies entirely from scenario 2 to be unreasonable. Furthermore, there may be the potential for MDAs to utilise these systems in an open protocol environment and distribution businesses may willingly allow this and price access according	Power line carrier technologies were considered by EMCa in scenario 2 as a sensitivity - see page 37 Phase 2 Overview Report.
	Consumer impacts	6	While Origin agrees that the rollout of AMI and new pricing approaches may create challenges for different customers, consistent with our views on customers experiencing financial hardship we believe that self identification is the best approach to remedy problems identified. Origin has discussed the inherent difficulty associated with identifying customers in financial stress of vulnerable to such stress in a number of submissions in recent years. We believe that new mechanisms are unnecessary as the same issues around financial stress exist today, regardless of tariff structure.	The functionalities enabled by AMI are a significant shift from those available through current metering technology. The potential for hardship amongst particularly vulnerable customers, particularly due to the remote disconnection functionality warranted the inclusion of an explicit recommendation requiring household facing financial stress to be explicitly identified. See the December 2007 MCE decision on the planned consumer protection and safety review.
		6	Origin would further note that TUO and CPP market contracts are in use at present in some jurisdictions (with full retail contestability). Such contracts are subject to retail and marketing codes, product disclosure guidelines as well as the relevant Fair Trading legislation.	Existing protections may not be sufficient to address the consumer challenges associated with the rollout of smart metering. The consumer protection considerations have been developed taken into consideration existing requirements on retailers.
	The role of the scenarios	7	Clearly the purpose of regulation is to mimic the competitive market. There has not to date been a case put as to why the competitive provision of AMI will be inefficient and would require regulatory intervention.	Section 18.3.1 of the Phase 2 Overview Report discusses the importance of a mandate for a smart metering rollout. Regardless of the rollout approach adopted, there is a case for a mandate require AMI to be rollout.
	Incentives for delivering smart meters at least cost	8	Origin strongly disagrees that contestable metering provision would require regulatory oversight, as retailers will have a powerful incentive to minimise costs that they pass through. In an environment where competition is deemed effective (such as Victoria), such regulation is likely to be counterproductive. In remaining jurisdictions, retail prices have a regulated ceiling which again would encourage retailers to minimise costs. In any event the price discovery process for AMI under contestability (whether competition is effective, or retains some price oversight until it becomes effective) will be more efficient than if left to a regulatory process.	The discussion on page 199 of the Phase 2 Overview Report indicates that "In the absence of competition providing the incentive for least cost delivery of the smart metering infrastructure under the retailer-led approach, the default is for retailers to have the costs included through regulated prices." Where competition is effective, there would be no need for regulatory oversight.

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