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Review of metering services – preliminary recommendations

The Australian Energy Council (AEC) welcomes the opportunity to comment on Review of metering services preliminary recommendations.

The AEC is the industry body representing 20 electricity and downstream natural gas businesses operating in the competitive wholesale and retail energy markets. These businesses collectively generate the majority of the electricity in Australia, sell gas and electricity to over ten million homes and businesses, and are major investors in renewable energy generation.

The mismatch in incentives that troubled the initial implementation of competitive metering has largely been addressed although the review is important to ensuring that the benefits that can be enabled by smart meters are both economically justified and available to consumers. In its response, the AEC has been mindful as to the original objectives of the introduction of competitive metering, and as much to what the changes sought to avoid as they sought to deliver.

Our responses to the consultation questions are provided below. The AEC has not provided a response to every single question to the consultation.

QUESTION 1: BENEFITS WHICH CAN BE ENABLED BY SMART METERS

(a) Are there other benefits which can be enabled by smart meters that are important to include in developing policy under the Review?

(b) What are stakeholders views on alternative devices enabling benefits? What are the pros and cons of these alternative devices?

The AEMC confirmed the issue raised by the AEC and others in its first round consultation that some DNSPs have been investigating obtaining visibility of their LV network through network-owned and controlled monitoring assets strategically placed throughout their network areas. Some have also considered obtaining data from devices such as inverters. The AEC agrees with the AEMC view that installing separate devices to provide data which could be provided by the meter does not appear to be efficient. The AEC supports the AEMC view that to better align objectives, smart meters are capable of providing the additional data most DNSPs are seeking under the current specifications and should be utilised for that purpose.

With an eye to innovation and efficiency, the AEC agrees with the AEMC that the framework should not preclude other devices being utilised for services other than consumption, billing and market settlement, where it is more efficient to do so. However, generally speaking distribution networks have still not forged strong commercial relationships with metering providers and data managers to obtain information on voltage and faults management that might be available, and instead are still pushing for capex to establish a duplicate capability themselves. The AEMC should be concerned that this well intentioned optionality for use of other devices, combined with a mismatch of incentives, will lead to inefficient outcomes and may therefore consider that a rule requiring the AER to test that data cannot be sourced from the market is required.

QUESTION 2: PENETRATION OF SMART METERS REQUIRED TO REALISE BENEFITS

(a) Do stakeholders agree that a higher penetration of smart meters is likely required to more fully realise the benefits of smart meters? If so, why? If no, why not

(b) Do stakeholders have any feedback on the level of smart meter penetration required for specific benefits? Or to optimise all benefits?

The AEMC concludes that it's highly likely that a higher penetration of smart meters will be required for future market services. The AEC agrees and notes the estimates provided of about 50% penetration to enable most of the benefits, largely accruing to DNSP's and more indirectly to end customer, presented in the review paper. The AEC has noted in our previous submission that metering services that are only cost effective at higher levels of penetration are apparently not valued by those customers who are not requesting a smart meter be installed independent of some other value proposition (such as solar PV) even if they might benefit in some way, because they are *services that the customer does not believe they require*.

QUESTION 3: TO REACH A CRITICAL MASS IN A TIMELY MANNER, OPTIONS TO ACCELERATE THE ROLL OUT SHOULD BE CONSIDERED

(a) Do you consider that the roll out of smart meters should be accelerated? Please provide details of why or why not.

(b) What are the merits, costs and benefits of each option?

The question as to the critical mass in a timely manner to deliver benefits is largely subjective. Whilst dated somewhat from its 2016 publication, the Victorian Auditor General Office (VAGO) noted that a few years following the complete rollout of Smart Meters in Victoria that:

...while a few benefits have accrued to consumers, benefits realisation is behind schedule and most benefits are yet to be realised. VAGO further observes that Current estimates suggest that approximately 80 per cent of the expected benefits could be achieved. There are significant uncertainties and risks associated with achieving these benefits, and consumers may experience a higher net cost than the most recent \$319 million estimate.¹

The AEMC's original objective was that the pace of the rollout be driven by its consumer benefit, largely to avoid the costly fiasco that remains the legacy of the Victorian Smart Meter rollout. If new information is available that can directly identify that the benefits have been realised and that 80 percent of the expected benefit has been achieved in Victoria then upon that evidentiary basis a change in rollout rate might be justified. The KPMG AMI Benefits Realisation Report (Draft) (the KPMG report) prepared for the Victorian Government published in November 2019 identified that by far the richest stream of AMI benefits had accrued to networks.² This may dampen increases in network costs to consumers, but the KPMG report does not quantify that cost benefit. The KPMG report does not validate that the VAGO's estimates that 80 percent of the expected benefits were achievable had been realised in the intervening years.

From a consumer perspective, the KPMG report identifies Digitalisation, Distributed Energy Resources (DER) and Electrification as likely to lead increased consumer participation and choice.³ Whilst smart meters are enablers for each of these three, the requirement for an active consumer choice in each leads the AEC to conclude that the current customer led rollout is appropriate; as this customer led approach allows for the rollout to proceed at a rate that is a function of the customers own benefit. At present, this means that demand for DER products and services such as solar, or batteries, or EVs, In addition, small tail sites for large customers seeking digital meters for individual stores/sites to take advantage of scale drives digitalisation demand. Electrification (or degasification) may require customer initiated works such as supply and mains upgrades that will drive demand. Along with these three, the fourth requirement of addressing old and replacement network meters rolls on. These four will set the requirements for the pace of rollout. There

¹ Covering note tabled 16 September 2016 <https://www.audit.vic.gov.au/report/realising-benefits-smart-meters?section=>

² KPMG AMI Benefits Realisation Report November 2019 (Redacted version), p8.

³ Ibid, p.23

is no evidence provided that the demand for DER products, or digitalisation, or electrification, is motivated or led by meter installation.

Is there a particular option which would be most appropriate in providing a timely, cost effective, safe and equitable roll out of smart meters?

The AEMC proposes a reduction in the number of customer notices required. The most efficient delivery of a meter replacement is when the metering provider can coordinate several installations in the most efficient geographical sequence. In most cases power is only out for an hour and most jobs are completed in the normal non-COVID situation when many customers are not generally at home so the customer impact is usually minimal. Where a customer cancels an installation, the most efficient response would be for the metering provider to schedule another job within the geographical proximity subject to the customer's consent. If it is convenient for both the customer and the metering provider the replacement can be undertaken at short notice. In this way the customer receives their new meter and the metering provider is not potentially impeded from the installation of an efficient number of meters in a day.

(c) How would each of these options for rolling out smart meters impact the cost profiles of smart meters? (d) Are there other options that you consider would better provide a timely, cost effective, safe and equitable roll out of smart meters?

The important principle to bear in mind here is that the customer initiated roll out is designed to shield customers from the burden of paying for services that they do not require. Theoretical benefits that arise from a dampening in network costs through better network management have been used historically to justify distributor led rollouts at a cost of billions, however those metering services that are only cost effective at higher levels of penetration are clearly not valued by those customers who are not requesting a smart meter. To avoid the customer backlash because consumers pay for smart meters prior to seeing any of the benefits of the technology, in addition to the four requirements of DER, digitalisation, electrification and new and old replacement, there is an option that may accelerate meter rollout that could be distributor led.

QUESTION 4: OPTIONS TO ASSIST IN ALIGNING INCENTIVES

(a) What are the costs and benefits of each option? Is there a particular option which would best align incentives for stakeholders?

(b) Are there other options that you consider would better align incentives?

If the richest stream of AMI benefits has in fact accrued to networks as identified in the Victorian KPMG report, then in the competitive metering environment those services should be (and are) available for purchase to the networks directly from the meter providers. Smart metering enables networks to better integrate DER into their network and avoid compromising system security and reliability. Other benefits to networks such as an end to estimated reads, better outage management or access to demand management (network) products are often not rated highly by end users even though they are promoted by distribution networks. If this stream of smart meter benefits are in fact available at an efficient service costs given the benefits, then the purchase of these services can be readily justified by network providers. Logically, this should also drive-up smart meter installation rates. Such an approach is consistent with the AEMC's discussion in the Directions Paper on developing additional revenue streams from smart meters, spreading the costs of installation and where a party could derive significant benefits from smart meters being installed, that they would bear the cost and initiate that installation.

QUESTION 5: THE CURRENT MINIMUM SERVICE SPECIFICATIONS ENABLE THE REQUIRED SERVICES TO BE PROVIDED

(a) Do you agree with the Commission's preliminary position that the minimum service specification and physical requirements of the meter are sufficient? If not, what are the specific changes required?

(b) Are there changes to the minimum service specifications, or elsewhere in Chapter 7 of the NER, required to enable new services and innovation?

(c) What is the most cost-effective way to support electrical safety outcomes, like neutral integrity? Would enabling data access for DNSPs or requiring smart meters to physically provide the service, such as via an alarm within the meter, achieve this?

(d) Do you agree smart meters provide the most efficient means for DNSPs to improve the visibility of their low voltage networks? Why, or why not? What would alternatives for network monitoring be, and would any of these alternatives be more efficient?

(e) Can smart meters be used to provide an effective solution to emerging system issues?

There is considerable argument and supporting material that specifying additional meter functionality could increase the available benefits without significantly increasing metering costs. The problem with specific changes is that any attempt to future proof metering against a thirty-year asset life will inevitably fail. The South Australian Governments Smart Meter Technical Standards and the Export Limit Requirements for Distributed Solar each address South Australia's current problem. New issues and appliances and connection requirements will likely emerge over time.

The AEC's view is that the current minimum metering specification does not disable innovation. Proponents for an upgraded meter technical specification have argued for example that there is no additional cost to meters being required to make meaningful measurements of network voltage and frequency⁴ as an example. Whilst this may be so, the technical specification does not overcome problems with innovation created by split incentives, and may in fact impede innovation normally obtained through the pursuit of additional revenue streams as networks wait for upgrades to the metering spec instead of pursuing the commercial avenues available for fulfillment.

What disables innovation is mainly a lack of alignment of incentives, often creating "turf wars". In addressing split incentives and embedding user pays principles in the regulatory framework then the solutions needed for emerging systems issues will be found. The metering infrastructure may be a part of those solutions. Conversely, the constantly changing value of emerging energy issues, many of which undoubtedly will not have been identified yet, will drive a constant requirement to update metering to meet revised technical specifications. Given the changing nature of technologies and issues, and the impacts these will have on the requirements of technical specifications, the AEC would prefer an approach that puts well aligned incentives in the right places as opposed to constant revisions of mandated minimum specifications.

QUESTION 6: ENABLING APPROPRIATE ACCESS TO DATA FROM METERS IS KEY TO UNLOCKING BENEFITS FOR CONSUMERS AND END USERS

(a) Do you agree there is a need to develop a framework for power quality data access and exchange? Why or why not?

(b) Besides DNSPs, which other market participants or third parties may reasonably require access to power quality data under an exchange framework? What are the use cases and benefits that access to this data can offer?

(c) Do you have any views on whether the provision of power quality data should be standardised? If so, what should the Commission take into consideration?

A framework is always required for a financial exchange and any clearance and settlement facility. The AEC's concerns here would be that the value of the market for access to power quality data is small in comparison to the technical specification required. Therefore, the AEC prefers an incremental framework that allows in the first instance for bilateral exchange and creates an obligation to make power quality data available to consumers and other end users in an accessible and standardised form. NERA's option⁵ to set minimum content requirements to standardise contracts and agreements on data exchange between market participants is our preferred approach. The facility through which that standardised format is delivered to consumers and end users may evolve over time as driven by demand.

(d) Do you consider the current framework is meeting consumers' demand for energy data (billing and non-billing data), and if not, what changes would be required? Is there data that consumers would benefit from accessing that CDR will not enable?

⁴ Dr Martin Gill, Making AEMC dumb meters smart submission to South Australian Smarter Homes consultation <http://www.drmartingill.com.au/index.php/category/submissions/> accessed at

https://www.energymining.sa.gov.au/data/assets/pdf_file/0007/368782/Dr_Martin_Gill_smarter_homes_consultation_feedback.pdf

⁵ AEMC, Review of the regulatory framework for metering services, 16 September 2021. p.31

The AEC encourages the AEMC to ensure that any cases for change presented in addition to the CDR are both⁶:

- a) Likely to benefit a reasonable portion of customers, and;
- b) Proportionate to the costs.

At present, customer awareness of the CDR is low, and the CDR is already enabling data that the customer won't use.⁷ Developing more user cases associated with metering data will not lead to greater benefits if customer uptake is minimal. This is particularly important in scenarios where the proposals simply amend already functioning processes within sectors.

QUESTION 7: FEEDBACK ON THE INITIAL OPTIONS FOR DATA ACCESS THAT THE COMMISSION HAS PRESENTED

(a) What are the costs and benefits of a centralised organisation providing all metering data? Is there value in exploring this option further? (e.g. high prescription of data management).

There are a number of historical and analogous industry projects that could help inform this discussion. First would be the expansion of the Market Settlements and Transfer System (MSATS) to account for full retail competition (FRC). Consideration of a "Meter Data Central (MDC)" is not new, and various proxies such as the AEMO DER register may also provide insight onto the incremental effectiveness of the higher prescription data required in any MDC approach. As always, opponents to step change concepts such as centralised data where cost benefit is sketchy to non-existent tend to be those who have already heavily invested in the existing design and who would face large transitional costs; such as consumers and existing industry participants. Proponents tend to be those who have little, or nothing invested, even if they are unable to quantify the gain.⁸

More recently, the Five Minute Settlement Project highlighted that whilst reading meters and settling the resulting transactions six times more often is conceptually trivial, the required functional and technical changes reached deep into every part of industry.⁹ What is known is that the project costs exceeded estimates by hundreds of millions of dollars¹⁰, and that the project delivery was years behind schedule. What is apparent from experience is that the costs and benefits for most industry wide projects are generally revealed well after the decision to spend.¹¹

⁶ AEC, submission to the CDR Strategic Assessment Consultation Paper:

<https://www.energycouncil.com.au/media/umhhdogv/20210902-aec-submission-to-cdr-strategic-assessment-consultation-paper.pdf>

⁷ Ibid

⁸ In recent years, retailer data collection and use in the National Electricity Market has become burdensome. Participants are required to provide data to multiple agencies, both in a systematic and ad hoc manner. These frequent requests are driving up costs, but it is unclear what benefits consumers are seeing from this additional data. The AEC submission to the ESB Data Strategy Consultation Paper provides additional sources:

<https://www.energycouncil.com.au/media/fvadyncu/20201127-aec-submission-to-esb-data-strategy-consultation-paper.pdf>

⁹ 5 Minute Settlement Starts. Energy Insider, Australian Energy Council, 30 September 2021.

<https://www.energycouncil.com.au/analysis/five-minute-settlement-starts-tomorrow/>

¹⁰ AEC consultants originally estimated retail industry costs at \$150 million, Midway through the project an AEC survey of its members' costs, by then well scoped, estimated a cost in the order of \$200-\$300m. On top of these would be similar magnitude costs incurred by networks and metering providers. AEMO costs were \$121 million as reported to its 5MS Executive Forum, see: https://aemo.com.au/-/media/files/stakeholder_consultation/working_groups/5ms-meetings/ef/2019/5ms-executive-forum-20-february-2019-meeting-notes.pdf

¹¹ Metering projects are particularly vulnerable to a failure to understand costs and benefits as the Victorian Auditor General noted when he identified in 2015 that Victorians paid a staggering estimated \$2.239 billion in metering charges with total costs forecast to increase for a reported \$746.58 million in benefits.

From our qualitative perspective, the benefits of a centralised data storage option must be weighed against the alternative options for providing access to the required data across many data holders, such as via APIs. The AEC has not done the granular work required to identify the costs and benefits of centralised metering data. If others provide substantive quantitative evaluation as part of this submissions process then the issue might be justifiably explored further.

(b) What are the costs and benefits of minimum content requirements for contracts and agreements for data access to provide standardisation? Would such an approach address issues of negotiation, consistency, and price of data?

(c) What are the costs and benefits of developing an exchange architecture to minimise one to-many interfaces and negotiations? Could B2B be utilised to serve this function? Is there value in exploring a new architecture such as an API-based hub and spoke model?

(d) What are the costs and benefits of a negotiate-arbitrate structure to enable data access for metering? Is there value in exploring this option further? (e.g. coverage tests or nonprescriptive pricing principles).

(e) Are there any other specific options or components the Commission should consider?

NERA's options of:

- Establishing minimum contents requirements to standardise contracts and agreements on data exchange between market participants, and;
- A negotiate-arbitrate option for access disputes

Are of apparent low cost to design and establish. Given the lack of a defined need for the more detailed framework at this stage the AEC recommends adopting this approach.

QUESTION 8: A HIGHER PENETRATION OF SMART METERS WILL ENABLE MORE SERVICES TO BE PROVIDED MORE EFFICIENTLY

(a) Are there other potential use cases that third parties can offer at different penetrations of smart meters? What else is required to enable these use cases?

(b) Noting recommendations in incentives and the roll out, are there other considerations for economies of scale in current and emerging service models?

The AEMC notes from stakeholder submissions that a faster and more efficient roll out of smart meters could better contribute to economies of scale and scope in installing smart meters by lowering the costs per unit.¹² Data from the ENA stabs at the level of meter penetrations required for efficient delivery¹³, though the method of calculation is not apparent. Interestingly, in the footnotes it is revealed that the ENA has indicated that networks could provide most of these services at 10-20% penetration, although they could be considered less efficient than the optimal indicative penetration.¹⁴ Networks have a history of front-running these kinds of arguments that serve their interest, but that end up costing consumers in the long run. As the Victorian Auditor General reminds us of the network led Victorian rollout, "the success or otherwise of the smart meters program cannot be properly scrutinised without an understanding of the costs of achieving the benefits."¹⁵

If history is any guide, then the evidence provided by prior experiences in the push for greater penetration must also be a consideration in the push for economies of scale. For example, where benefits relate to the early replacement programs avoided costs of accumulation meters, then these costs are replaced by the

¹² AEMC, Review of the regulatory framework for metering services, 16 September 2021. p.76,77

¹³ Ibid p77

¹⁴ Ibid p77

¹⁵ Realising the Benefits of Smart Meters, Victorian Auditor Generals comments,

<https://www.audit.vic.gov.au/report/realising-benefits-smart-meters?section=#31626--auditor-general-s-comments>

higher and earlier costs of smart meters¹⁶ and do not represent additional value from their replacement with a smart meter.¹⁷

Economies of scale are always an important consideration for our industry through theoretically spreading the costs of servicing (such as a metering rollout) over a larger amount of customers. But lower per unit costs do not come necessarily by chasing scale.¹⁸ Accelerating metering rollout may produce constraints, such as skilled labour or supplier constraints. Further, demand is an important factor in any decision to scale. Finally, in any accelerated rollout accumulation meter costs are replaced with smart meter costs which are higher. The quantitative reduction in these gaps provided by scale seems elusive, and there is ample evidence from previous attempts at scale that any benefits realisation by consumers remains uncertain.¹⁹ These should be the major considerations to any further deliberation on economies of scale, with any technology fascination with other potential uses subjected to the burden of proof against them.

QUESTION 9: IMPROVING CUSTOMERS' EXPERIENCE

(a) Do you have any feedback on the proposal to require retailers to provide information to their customers when a smart meter is being installed? Is the proposed information adequate, or should any changes be made?

The Commission proposes to introduce a requirement for retailers to provide information to their customers when a smart meter is being installed. The proposed requirements appear reasonable and complete.

(b) Should an independent party provide information on smart meters for customers? If so, how should this be implemented?

Given the existing retailer requirements, this seems unnecessary and duplicate. However, sites such as Service NSW or Energy Made Easy²⁰ may plausibly be an alternate or further source of information about metering for customers.

(c) Should retailers be required to install a smart meter when requested by a customer, for any reason? Are there any unintended consequences which may arise from such an approach?

This is an interesting prospect, as customer initiated meter installation is a key feature of competitive metering but also assumes a benefit will accrue to the customer as a result of their initiation. That is that a customer is generally seeking the benefit of a new service or price and that can only be enabled and commenced by the installation of a smart meter. If a customer seeks a smart meter for other reasons, such as altruism, then the AEC imagines that the cohort will be small and the impact low.

Could there be unintended consequences? Perhaps “denial of service” type attacks where vast numbers of customers target a particular retailer (for perhaps unrelated reasons, such as their generation mix) to demand a smart meter installation and overwhelm their systems? Perhaps if this reason (ie by request) were to be quarantined from the compliance penalty regime as no harm can flow from it, then the AEC imagines that most retailers would facilitate such a request. They may try to turn it into an opportunity from the customers perspective.

QUESTION 10: REDUCING DELAYS IN METER REPLACEMENT

(a) Do you have any feedback on the proposed changes to the meter malfunction process?

¹⁶ Realising the Benefits of Smart Meters, Costs and Benefits of the AMI program, <https://www.audit.vic.gov.au/report/realising-benefits-smart-meters?section=#31629--3-costs-and-benefits-of-the-ami-program->

¹⁷ Such as introducing a 'backstop' date or dates by which time all accumulation meters or manually read interval meters must be replaced; for example, 90% of meters required to be smart meters by 2030.

¹⁸ A practice sometimes known as “diseconomies of scale”.

¹⁹ Even at scale, in the Victorian AMI rollout the benefits associated with the uptake of innovative tariffs and demand management had achieved only 2.5 per cent of expected benefits after 5 years, and the benefits that come from network operational efficiencies (largely remote reading) had only achieved 49.32 per cent of expected benefits in the same period. <https://www.audit.vic.gov.au/report/realising-benefits-smart-meters?section=>

²⁰ <https://www.service.nsw.gov.au/transaction/compare-energy-plans-energy-made-easy>

Changes would appear to be unnecessary given the improvements in the customer experience. There is also continuing difficulties with industry cooperation. Because the replacement of 'failed' meters is subject to more flexible timeframe obligations than 'customer initiated' meter installations, Metering Coordinators use family failures to level demand and schedule metering work efficiently. This is especially important for rural and regional areas where the volumes of 'customer initiated' metering work are low and spasmodic.²¹ Applications to AEMO for an extension to timeframes enable more efficient allocation of resources.

(b) Are there any practicable mechanisms to address remediation issues that can prevent a smart meter from being installed?

Most of these are outside the control of installers and would require the customer to accept accountability for the rectification before a meter installation can proceed. Defects such as the presence of friable asbestos (which cannot be worked around and must be removed), meter panels and meter enclosures in disrepair, panels that represent a fire risk, the lack of an operable fuse, or lack of space on the meter panel to allow for the installation of a smart meter all require costly rectification. The most practicable mechanism would be to simply fund the remediation; in practice this is how many of these issues were dealt with in the mandatory AMI rollout in Victoria (with generous cost recovery). Generally, the AEC does not favour the concept of socialising the costs and privatising the benefits.

QUESTION 11: MEASURES THAT COULD SUPPORT MORE EFFICIENT DEPLOYMENT OF SMART METERS

(a) Do you have any feedback on the proposal to reduce the number of notices for retailer-led roll outs to one?

The AEC supports the proposal to reduce the number of notifications required for a retailer-led roll out to one.

(b) What are your views on the opt-out provision for retailer-led roll outs? Should the opt-out provision be removed or retained, and why?

(c) Are there solutions which you consider will help to simplify and improve meter replacement in multi-occupancy premises? Should a one-in-all-in approach be considered further?

The one in all in question poses complex contractual issues that are best advised upon by market operatives (MC's MP's, Retailers and Networks). Therefore, the AEC does not intend to comment on this section.

QUESTION 12: FEEDBACK ON OTHER INSTALLATION ISSUES

(a) Do you have feedback on any of the other installation issues raised by stakeholders? Are there any other installation issues the Commission should also consider?

QUESTION 13: IMPROVEMENTS TO ROLES AND RESPONSIBILITIES

(a) Are there any changes to roles and responsibilities that the Commission should consider under this review? If so, what are those changes, and what would be the benefit of those changes?

The AEC is not aware of any proposed changes that could create efficiencies through a reallocation of roles and responsibilities. Consideration of any such proposed changes should take into account the costs already generated in establishing the current framework as well as the incremental cost of further change.

Please contact the undersigned at David.Markham@energycouncil.com.au should you wish to discuss.

Yours sincerely,

²¹ Vector Energy, Submission on the Review of the Regulatory Framework for Metering Services, February 2021

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