Response to

Australian Energy Market Commission
Directions Paper
Real-time data for consumers
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Introduction

The Australian electricity industry has achieved something remarkable- the current generation of smart meters were designed before the energy transition requirements were contemplated. . But despite this, these meters and meter services have done a remarkable job and been remarkably robust for more than 15 years for the use cases they were designed for - network balancing and accurate bills.

But the energy transition is placing many new and emerging functionality demands on these meters, that they were never designed for. One such emerging demand is the ubiquitous consumer requirement for real time data about their energy, as well as real time data necessary for energy suppliers, EDBs, and other third parties to orchestrate CERs behind the meter. Such capabilities and services haven't been part of the design or operating cost models for current consumer meters, and giving rise to these important questions in this Directions Paper.

The energy transition is forcing a rapid set of new and emerging use cases to appear and is radically reshaping the function and role of smart meters into grid edge sensors. For the last several years, a plethora of unregulated real time meters are being deployed 'behind the electricity meter' on homes with real time data apps on mobiles that are included within the service pricing of the' behind the meter' energy asset. CERs such as solar panels, battery, EV charging, water heaters, heat pumps, thermostats to name a few of the real time customer consented energy assets producing real time energy data - all provide such unregulated metering and real time data updates, but at no perceived additional cost to the consumer, these costs are generally absorbed into the general services costs and covered by the general services payments consumers make for the assets and services they receive.

And rapidly, the energy transition is causing consumers to make new purchase and service decisions for energy assets behind the meter each with unregulated metering behind their main

E-meter, where they readily consent for the assets to connect to cloud accounts using their broadband connections in order to have real time updates to their mobile phones.

The definition of real time and the definition of data seems self evident at first glance, but requires careful scoping to ensure correct interpretation and implementation.

This new ‘energy reality’ will continue to drive industry participants to reshape their propositions, offers, and incentives and inducements to generate demand adoption from consumers, offering real time data accessed over mobile apps and included with their energy asset and service propositions. In time, its very likely that the cost of real time data will be absorbed in the design of assets and services.

Question 1: Do you agree with a staged implementation approach for when consumers pay for access to real-time data?

a) Is 15 years the right time-frame for industry to achieve cost efficiencies in delivering real-time data access from smart meters? Are there ways to support industry to reduce this time-frame?
b) Would the marginal cost to each consumer be material in the long-term if costs were smeared across all consumers after 15 years?
c) Are there other ways to facilitate efficiency and equity and support industry to lower costs to consumers?
d) What incentives would our approach create for retailers, MSPs and third parties?

Response

a) The validation of consumer demand is possible to survey and pilot in a way to encourage confidence about demand and the elasticity of demand at different price points. Doing such validation as a first step gives Retailers Consumers and third parties the opportunity for feedback quite early before significant investments are undertaken. The downside of such an apporach is the risk that much time may be wasted delaying implementation, and the result may not be definitive.
b) The principle of building into the lifetime cost of the meter asset, a capability to provide real time data from the meter asset directly seems essential at whatever the useful life of the meter is. The current generation of meters has proven to be robust over a 15 year + useful life but with less dynamic demands than the next generation of meters designed for the coming 15 years of energy transition.
c) Customer demand for real time data is highly elastic and depends on the quality of the data and what use cases are possible with it. Therefore estimated pricing for real time consumer data services is needed to establish the likelihood of adoption.
d) long history of energy efficiency initiatives suggests that homes with higher discretionary income, spending, and energy transition CERs, are more likely to ‘opt-in’ to receiving real time energy if they must pay for it. So subsidisation of real time data costs through other services that are taken up across all socioeconomic segments will be the most likely approach to have more widespread adoption.
e) The incentives will favour companies that are able to bundle the real time data cost into a valuable high margin service that makes the most use of the real time consumer data, that the consumer will value and pay for.

Question 2: Should the prices for real-time data access be published by the AER?
a) How and where should the AER publish prices to access real-time data?
b) What other measures would incentivise retailers to offer real-time data at competitive prices?

Response

a) Publishing standard applicable price may be necessary, but challenging to ensure equitable outcomes for Retailers and other parties in at least achieving a neutral breakeven point.

b) Retailers should be encouraged to have bundled high margin propositions that make best use of real time data , so that the profitability of the bundled services cross subsidise discounting of the real time data prices.

Question 3: Do you agree with our proposed definition of real-time data?
a) Does the proposed definition enable real-time data products and services to deliver the benefits
of real-time data to consumers?
b) What other features of a real-time data definition should be described in AEMO procedures?

Response

a) Possibly- Further clarification is suggested. To be useful for emerging sophisticated AI energy transition use cases, real time data may refer to several things-
   i) the capture of real time analogue composite energy flows.
   ii) The conversion in real time into output streams of digital representation snapshots of the raw composite energy flows at a real time frequency rate of 6K samples and more per second.
   iii) The output of raw energy digitised representations values to endpoints in real time.
   iv) Although the real time sample rate may be 6K + per second, but the real time intervals for transmitting data may be at 1 second intervals to accommodate limitations of the AMI.

b) Other characteristics-
   i) Specifying high resolution digital sampled streams in real time will be an integral part of future real time data. The frequency of sampling is essential , where a 1 second sample rate has very limited utility compared to a 6K + per second frequency real time sample. Certain types of backhaul communications are not really designed for real time, however some are. From a human factor perspective, real time refers to the human perception that from the moment they took an action that a perceived response occurred, usually a roundtrip of 1-2 seconds. From a machine to machine perspective, a real time interaction is a specific time such as under 1 second for messages to be sent and received between DERMS orchestration, and the device under control and includes communication latency factors.

c) Supplemental data- Clearly defining what is meant by data. There are different categories of data. One category appears to be in-scope for this document. Others appear to be out of scope.
   i) The first being raw energy or scaled energy data that is used for network balancing and power quality and whole home data necessary for billing. Presumably this is what is referred to as the data in real time data for customers that customers are proposed to pay to access.
   ii) The second category of data may be referred to as supplemental analytical insight data that is generated by third parties through algorithms, inference and

other such methods. This requires the local high resolution data generated by next generation metrology locally, and processed locally by applications to generate supplemental analytical insight data.

iii) Such supplemental data may be generated by the plethora of energy smart assets, appliances, devices, CERs and other smart home services mainly behind the meter throughout the home, though such data may be generated by devices that are attached to DERs and grid resources.

d) Customer consented data and non-consented data- following consumer privacy and consent principles, supplemental data related to energy CERs that is Customer consented is common now in homes across Australia. There is also supplemental energy data that is anonymised and has no consumer PII associated with it, and is non-customer consented data. An example may be aggregated data across multiple network nodes for planning that has no PII associated to it.

Question 4: Do you agree with the obligation on retailers to provide real-time data access?
a) Are the proposed timeframes of 10 business days and 20 business days sufficient to enable retailers to give customers access to real-time data?
b) Are there circumstances where the obligations on retailers to offer and give real-time data access upon customers' request, and the timeframes within which to give access should not apply?
c) Are additional obligations on retailers required to enable the provision of real-time data access
to consumers?

Response

a) Switching on access to real time data that is a provisioned feature of the smart meter should be able to be done along similar timeframes of similar operational processes.
b) There are a variety of installed meters with different capabilities installed. If a meter change, or update is required, additional time considerations are needed.
c) The people and processes required to provide a real time service may require additional development of operational systems.
d) There should be a transition or harmonisation period permitted

Question 5: Do you agree that MSPs should ensure multi-party, interoperable and secure access to real-time data?
a) Are there requirements that we should impose on MSPs in addition to multi-party, interoperable
and secure access obligations?

Response

a) MSPs are an essential part of the solution for in-scope real time data. Ultimately the result needed includes those requirements, but achieved at a sustainable price for the MSP and for the Consumers. Providing local data from a data port on the meter

addresses many of the costs and other concerns that a cloud based data service would entail for customer access to real time data. But this might require new capabilities on meters

Question 6: Which consumer consent pathway do you consider to be the most practical and why?
a) Are there any barriers to implementing this pathway?
b) Are there any viable alternative pathways that better deliver outcomes for consumers?

Response
The energy supplier- Retailer has a consented relationship with the customer and if selling data access requires consent that is already existing in many cases. An authorised 3rd party data service for the consumer may act as a data processor for the Retailer, in which case the existing consents may suffice. However, the 3rd party may act as a data controller directly with the customer for the special data services that ingets the Customer data. In this case, a new customer consent is required and registration of the 3rd party as an authorised receiving party acting with customer consent is needed.

a) No, customer consents occur frequently with all customers who use consumer technology today from websites to devices to mobile apps.
b) Encouraging Retailers to bundle 3rd party apps under their services, greatly simplifies customer consent, and produces additional revenues and margins for the Retailer.

Question 7: What should third party access consent look like?
a) Should the form of consent be left to third parties to determine?
b) Should there be specifications placed on the form of consent that third parties must obtain from
consumers? If so, what could this look like?
c) Should the process for the withdrawal of consent also be specified?

Response

a) Fortunately, there are many existing examples and templates of consent in every country. It is essential that the customer remain in control at all times to to provide, pause, and withdraw consent for any reason for any customer consented service.
b) Providing a template and best practice guideline should be sufficient, along with a clear understanding of the penalties for non-compliance and breaching customer consent guidelines.
c) Absolutely- and should be simple for the customer to withdraw, pause, and re-instate with the slide of a button on their mobile app.

Question 8: Should additional requirements be placed on third parties that request access to consumer data?
a) Should third parties be accredited by AEMO under the NER?
b) Are there any other safeguards required to ensure third parties do not misuse data?

Response

a) Registration should be light touch. Self certification process for 3rd parties should be available acceptance of best practice and principles, simple questionnaire to confirm understanding.
b) Only as normally done today already in data privacy and data protection for consumers.

Question 9: What features of the consumer data right (CDR) can we adopt?
a) What specific features of the CDR would be beneficial to apply to third parties who seek access
to real-time data?

Response

a) reuse and refer to existing best practice principles and guidelines.