Powersensor.

20 February 2025

Anna Collyer
Chair
Australian Energy Market Commission
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Response to AEMC Consultation Paper: Real-time data for consumers, ERC0399

Dear Ms. Collyer,

On behalf of Powersensor, I am writing to express our support for the proposed amendments to the National Electricity Rules (NER) regarding consumer access to real-time smart meter data.

We particularly support an open market approach and are in favour of solutions leveraging existing technologies like Powersensor to provide real-time and smart device interconnected data, which can deliver *immediate* electricity bill savings for consumers while reducing the costs and timelines associated with long-term smart meter implementation.

Powersensor manufactures DIY-installed energy, solar, and appliance monitoring solutions for consumers and market participants in Australia and New Zealand. Our solutions focus on intelligent utilisation of tariffs including cost-reflective tariffs, smart load shifting of appliances and solar soaking. The monitoring of solar and appliance data is of particular importance regarding supply and demand management, including emergency grid response.

We serve both the consumer energy resources (CER) and commercial/industrial (C&I) sectors, supporting distribution network service providers (DNSPs) and their retailers with user energy data through a simplified, self-installed distribution channel.

This self-installed distribution channel is critical to an expedited rollout, faster adoption, accessibility and affordability and aligns with AEMC and its strategic goals. Powersensor allows AEMC to provide immediate benefits to consumers without requiring significant industry-wide changes or government intervention.

Powersensor strongly aligns with the Energy Council of Australia's (ECA) assessment that real-time data is crucial to engagement in the CER. Our current technology empowers customers to maximise the benefits of such data, *now*. We have direct evidence from our customer base demonstrating the value of real-time monitoring in achieving cost savings.

Powersensor was founded by DiUS to address market concerns and challenges of DNSP, retailers, distributors, MSPs, generators and AEMO, to provide real-time data and connectivity gaps between its customers. In providing this data, Powersensor is committed to data privacy and security, adhering to all relevant Australian standards and regulations.

Our focus is a clean energy future through low-carbon energy generation to meet net zero 2050, while being aligned with a diversified energy outlook.

We encourage the Australian Energy Market Commission (AEMC) and ECA to leverage existing supply chains and channels for real-time energy monitoring and to foster partnership opportunities with companies like Powersensor by way of provisional and long-term real-time data and customer metrics services, *today*.

Our submission is enclosed, and we invite further consultation with the AEMC.

Kind regards,

Joe Losinno
Founder and CEO

Response to AEMC Consultation Questions:
Real-Time Data for Consumers

20 February 2025

Powersensor Background

Powersensor Business Summary

Powersensor offers DIY installed energy consumption, solar, and appliance monitoring solutions designed for consumers and market participants in Australia and New Zealand. Products like Powersensor enable users to track real-time energy usage and generation at both the meter and down to the appliance level including hard-wired appliances. This provides consumers with insights that help manage (reduce) consumption, optimise costs aligned with tariffs, and enable energy efficiency.

Powersensor's technology offers the greatest reach in the market due to its inverter and electricity meter-agnostic design, ensuring compatibility with a widest range of homes and businesses, including their solar installations. It seamlessly integrates with both smart and analogue meters, in single- and three-phase systems, making it accessible for diverse residential and commercial applications.

Relevance to AEMC Live Data Consultation and Directions Paper

Powersensor's experience is highly relevant to the AEMC's consultation paper on real-time data for consumers. This is because our solution embodies the principles of empowering consumers through affordable technology and readily accessible real-time energy data, a critical foundation in delivering what consumers need - savings and efficiency; whilst advancing our journey to a sustainable future. This is where Powersensor has focussed its energy and engagement in the market since its first customer trial with Powershop in 2016.

The ability to monitor energy usage in real time aligns with the AEMC's objectives of enhancing consumer choice and engagement in energy management. The insights provided by Powersensor can support the integration of consumer energy resources (CER) and facilitate demand flexibility, which are key focus areas in the AEMC's directions paper.

Additionally, Powersensor's emphasis on technology neutrality and affordable, cost-effective solutions resonates with the AEMC's goals of ensuring equitable access to real-time data without imposing excessive costs on consumers, retailers and other market participants.

Our Credentials

DiUS Computing, a technology provider for the energy industry and founder and developer of Powersensor, brings over 20 years of experience consulting to and delivering solutions to many Australian energy stakeholders, including consumers, retailers, distributors, Metering Service Providers (MSPs), generators, and AEMO. In addition, we have a long history of working with gas and water utilities - so we have a broad view of consumer and utility market needs.

DiUS's expertise lies in the establishment and delivery of new and emerging technologies, domain expertise in the Australian energy market, and the application of related technologies and standards to support key industry needs - so we are familiar with proposing & establishing frameworks, architectures and business approaches that incrementally deliver to a key market need.

DiUS was a key technology consultant for the Victorian Advanced Metering Infrastructure (Smart Meter program), which we think is relevant in terms of learnings for this consultation. DiUS has been involved in the delivery of and/or a key advisor in:

- Customer and technology trials;
- The selection of the communications and smart metering infrastructure;
- The implementation of changes to industry participants systems to cater for 30 min (and now 5 min) data;
- An advisor to the ZigBee Smart Energy Protocol to enable the Home Area Network for Victorians;
- Developer for Jemena and UnitedEnergy's Customer Portal that allowed homeowners to visualise their smart meter data and bind devices to their smart meter;
- Developer of a range of consumer energy technology products, including
  - ChargeIQ - Smart grid integrated and tariff aware residential EV charger that was the primary technology deployed to consumers homes and businesses through the Victorian Department of Transport EV trial in 2011,
  - PowerVu - One of the first VEU approved in-home displays in Victoria, which Origin Energy distributed to over 16,000 of its customers.
  - Successful grant recipient working with Victorian Government on the enablement of the Home Area Network (the key gateway from the smart meter into the home).

The challenges and limitations we observed associated with the rollout of our consumer-focused energy technology above inspired the creation of Powersensor.

Peak Demand Cost-Reflective Tariff Trials:
Powersensor collaborated with the trial project team from Ergon Energy Network and its electricity retailer delivery partner, Ergon Energy Retail, to pilot a new evening peak demand period. This initiative was part of broader cost-reflective tariff reform programs aimed at optimising electricity pricing structures and encouraging efficient energy usage.

As part of the trial, Powersensor provided real-time energy, solar, and appliance data to a selected group of Ergon Energy Network and Retail customers during peak tariff periods. This initiative aimed to help customers:

- Understand the cost impacts of their energy usage in real-time.
- Monitor and reduce their peak energy consumption.
- Shift appliance usage to off-peak periods to lower costs.
- Gain insights into their overall energy usage and upcoming bills.
- Improve their connection and engagement with electricity billing and management.

By facilitating more informed energy decisions, the trial aimed to drive meaningful reductions in peak demand, supporting a more efficient and sustainable electricity network

Delivering what consumers need NOW

At Powersensor, we share AEMC's vision for a sustainable energy future and delivering savings and efficiencies to consumers through access to the right technology and real time data. It's why we created Powersensor in 2016.

We believe that to truly deliver on what consumers and the market needs, the AEMC should embrace and support solutions like Powersensor that are constantly working with consumers to deliver on their needs - because whilst real time data is critical, supporting consumers with solutions that leverage real time data for theirs or the markets purposes is where the benefit is derived. In terms of what is being proposed in the consultation paper, we see merit in this approach, albeit there are still details to work

through, however, we do not believe consumers can wait for an industry wide solution to access real time data and deliver on its associated benefits.

Furthermore, existing solutions and technologies can already provide real-time data access and deliver benefits to consumers. There is a real opportunity here for the AEMC to undertake activities now, like engaging with Powersensor and the marketplace to trial ways of enhancing the proposition for real time data, this would inform this consultation process and deliver a more effective longer term solution.

Powersensor addresses a key friction point hindering widespread adoption of energy technology solutions: *the high cost and complexity of traditional, electrician-installed energy technology*. Our DIY solution empowers Australians with affordable, accessible, and real-time data on both solar energy generation and overall household electricity and appliance usage, accelerating costs savings to the consumer whilst enabling the transition to a more sustainable future.

The Problem: Costly and Complex Access to Real-Time Data

- **Expensive Installation**: Traditional systems (including Real-time/Smart Meters) require a truck roll and installation by an electrician, adding significant cost and hassle for homeowners.
- **Industry solutions are not a quick fix:** Industry change across all market participants is slow and will take many years, including a high cost in rollout and deployment of any solution - consumers need help now.
- **Limited Insights**: While real-time data proposed (voltage, current, and phase) provide the fundamental engineering units needed to derive power, on their own they do not offer the level of detailed monitoring and format that consumers need—leaving it to the market to fulfill these demands. Powersensor bridges this gap by delivering comprehensive tracking of solar generation, individual circuits, and total energy consumption in a way that is easily understood by everyday users—empowering smarter energy decisions.
- **Lack of Integration**: Our solution seamlessly integrates with smart home devices and other home energy management technologies, whilst real time data is an important facet of the overall solution, understanding what consumers need and providing integrated solutions at an affordable price is what delivers for them.
- **Limited Adoption**: High costs discourage widespread adoption of energy monitoring, hindering the ability to optimise renewable energy use.

Powersensor: The DIY Solution

- **Affordable Access:** Our easy-to-install solution eliminates the need for electricians, making energy monitoring accessible to all Australians.
- **The only VEU Approved solar compatible DIY product:** Powersensor is the only DIY-installed VEU-approved product under the IHD category that fully supports homes with solar, providing both imported and exported energy data and optionally tracking gross solar generation.
- **Fast Installation:** Powersensor empowers homeowners to quickly set up the system themselves. Which provides a simplified, self-installed distribution channel.
- **Comprehensive Insights:** Tracks solar generation, overall electricity usage, and identifies energy-saving opportunities.
- **Actionable Data:** Gain valuable information to optimise solar usage, reduce energy bills, and contribute to a greener future.
- **Upgradeability:** Powersensor seamlessly integrates with third-party smart energy solutions, like Home Energy Managers, enabling advanced home energy optimisation.
- **Portability:** for the rental market and relocation to different premises.
- **Works with out-of-range meter installations:** Powersensor can bridge the gap for consumers in apartments and housing estates where centrally installed electricity meters are typically out of communication range.

Summary

Providing consumers access to live energy data will deliver tremendous value for not only the consumer, but energy market participants, service providers and the market operator - it is in fact the very reason we created Powersensor.

Strong consideration needs to be given to whether a meter based solution (as proposed in this consultation paper) is sufficient. Ensuring a frictionless and simple model for consumer engagement and activation is paramount, whilst enabling and integrating with existing/new market based solutions is critical so that the entire ecosystem can deliver the desired outcomes for consumers. Without both these aspects included in the introduction of real time data access, deploying meters with real time data will likely not make the desired impact.

The Victorian experience has shown that simply providing meters and live data is insufficient. True savings and accelerated adoption of sustainable energy solutions depend on consumer engagement and delivering tangible benefits - so that bridge between providing real time data and consumer engagement with solutions is essential.

Proper engagement with consumers will not only raise awareness of the opportunities to save, but also encourage behaviours that will reduce cost, enhance network resilience and accelerate Australia's electrification journey. To achieve this, greater focus needs to be given on how to better engage consumers and market ready solutions, like Powersensor, that support them whilst ensuring the provision of real time data is safe, secure, scalable and efficient.

Powersensor was conceived and designed with the guiding principle that it must be low cost to build, operate and install, be able to quickly adapt to market changes and crucially due to the difficulties of accessing meter data, provide monitoring independent of an electricity meter.

While Powersensor offers an alternative method for monitoring real-time data, we believe our fully independent-of-electricity-meter approach greatly simplifies access to real-time data for our customers. Even though Powersensor replicates the power 'measurement' function we find Powersensor provides the fastest and most cost-effective solution while giving customers full control over who can access their data.

We foresee a number of issues that may arise and will be crucial to the adoption of real-time data by consumers as proposed under the ruling. While the proposed ruling may enable consumers to access real-time energy data, it is unclear whether this will reduce access costs compared to existing solutions. Additionally, the **15-year meter lifespan** presents a challenge in keeping pace with market and technological advancements.

The **AEMC appears to favor direct meter access** for real-time data; however, there is no mention of the required **physical interface** or **Home Area Network (HAN)** for data access. The choice of the **physical layer** will significantly impact the cost of third-party devices in the home and ultimately shape the **customer's user experience**. The selected interface must also accommodate premises with **centralised meter installations**, such as **apartments and multi-dwelling sites**.

For real-time data adoption to be successful, several factors must be considered:
- **Cost to the customer** for accessing live data.
- **Ease of access** for both consumers and third-party services.
- **Accreditation and approval processes**, including cost and time required.

Finally, implementing **different methods** for accessing **real-time data** versus **interval data** will introduce unnecessary barriers and friction points, making adoption more complex. A streamlined,

cost-effective, and standardised approach is essential for maximising the benefits of real-time energy data access.

Response to AEMC Consultation Questions:
Real-Time Data for Consumers Rule Change Proposal

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:
Powersensor acknowledges the 15-year timeframe as tied to the typical meter replacement cycle. While agreeing that secure and reliable real-time data access has costs, the necessity of a 15-year rollout period is unclear, especially given there are readily available market solutions today. Many meters already support local live data access, and distributors are planning WiFi integration for next-gen meters, suggesting the incremental cost for local access is already incorporated in the meter cost. The primary additional cost would be for secure remote access and data storage, particularly if a centralised server model is adopted.

Powersensor envisions a tiered approach: free access to locally served data, and a user-pays model for provision of the technology and for hosting a centralised live data access. The latter cost could decrease over time with reduced communication and standardised storage expenses, and could well be provided by the market or a government body.

Crucially, our proposal leverages existing market solutions to accelerate the availability of real-time data access which would provide more immediate access to real-time data for the industry whilst also informing a long-term meter-based strategy.

This allows for immediate benefits realisation to consumers, industry and government, and includes valuable insights into potential changes in consumer behavior and market impact before committing to a costly and lengthy meter implementation lifecycle and the cost of implementing the supporting rule changes and governance structures.

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:
Yes, we agree that an independent government body like the AER should publish real-time data access information.

In terms of price, transparency is critical in creating an open and equitable approach for all consumers. Whilst we understand the necessity to recoup costs for the service, we feel that the cost of such a service should be the same irrespective of which retailer a consumer is with.

Additionally, we do not see any reason for an additional cost in providing access to real-time data from the meter using a local interface, to say within the home. There may of course be an additional cost for physical devices or for access to a cloud server or API based solution.

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:
Powersensor believes a comprehensive real-time data definition should encompass not only the engineering unit and granularity, but also guidance on accessibility, usability, governance and relevance, all within the framework of expanded regulations like the Consumer Data Right for Energy (CDR). This means considering data access methods (physical layer, APIs, webhooks…) and using standardised formats with targeted data provisioning aligned to consumer needs.

AEMO procedures should reflect these aspects, specifying data access, formats, and potentially tiered granularity levels, while adhering to CDR requirements for data security and consumer consent. This approach ensures real-time data products and services deliver meaningful consumer benefits, balancing granularity of data with usability, relevance and cost.

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:
We feel that adding this layer of data administration and management to retailers and the industry at large will only add to the current cost of providing energy to consumers and therefore, would advocate for the process to be fully digital. There is no reason why consumer access to real time meter data can't be immediate upon installation or if already installed, it should be immediate.

Most retailers have an existing digital relationship with their customers. Implementing additional self-service capabilities to front the provision of access to real time data (we expect this would be supported by a centralised managed service/platform to facilitate the access) would minimise the administrative burden and improve the consumer user experience.

This is an eminently more scalable approach and also supports enabling market readily available solutions to support specific consumer needs, in particular around orchestration and control of energy devices.

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:

Powersensor supports MSPs ensuring multi-party, interoperable, and secure access to real-time data. However, to truly empower consumers and foster a competitive marketplace, it's important there is a central approach that manages access to the data, and allows for a 3rd party (product or organisation) to access a consumer's real time data. Additional requirements are needed to support the provision of real time data, including registration (and de-registration) of 3rd party devices, data standardisation for seamless exchange, clear data retention and portability policies to prevent vendor lock-in, and secure data retirement processes. The consumer facing service that delivers on access and these capabilities is probably best provided to consumers through their electricity retailer, with MSPs fulfilling their obligation around interoperability and security.

These measures, combined with multi-party access, will drive innovation and ensure real-time data benefits both consumers and the energy sector as a whole, whilst ensuring the right governance surrounds access.

This access enables connecting to devices within the consumer site to address key use cases like:
- *Load appliance shifting.*
- *Integration of renewable energy data.*
- *Supply including solar self-consumption including energy technologies such as batteries and electric vehicles.*
- *Peak demand management.*
- *Emergency response management, including appliance ramp down or shut off.*
- *Solar generation and export.*
- *Cost-reflective tariff support.*

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:
We believe consumers should request access to real-time data or provide consent through their electricity retailer, but with central management of this capability. This provides the best blend of simplifying the process for a consumer, but providing scale and access for all interested (and registered) parties.

This would be supported by a single, accessible protocol for sharing data to accredited sources and would streamline the process and promote a consumer-centric approach, encouraging a variety of secondary market solutions to both enhance customer experience and value.

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:
Powersensor supports clear, specific, and manageable third-party access consent for real time data, aligning with some of the CDR regulations for informed consent and data security.

However, to enhance consumer control and transparency, we recommend:

- ***Accessibility:*** *Ensuring the ease of data sharing between third parties, centralised access to energy data.*

- *Granular Control: Consumers should choose specific data types to share, and easily withdraw consent.*
- *Standardised Consent Forms: Mandate separate, specific consent with clear language, outlining the purpose, data types, and third-party identity.*
- *Simplified Withdrawal: Ensure withdrawing consent is as simple as granting it, with immediate cessation of data use and clear confirmation.*

These measures adapt valuable parts of existing CDR protections and provisions, enhancing consumer control and transparency in smart meter data sharing.

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:
Powersensor supports aligning third-party access requirements with existing CDR guidelines, including ACCC accreditation. Additionally, AEMO accreditation under the NER would provide energy-specific oversight, though the process should be streamlined. To further strengthen data protection, robust record keeping, penalties for non-compliance, and ongoing monitoring of data security and privacy safeguards are crucial. These however, need to be balanced with providing opportunity for new providers to enter the primary and secondary service market.

Provision should be made for access to anonymised, standardised data, consistent with real information feeds to allow for new and innovative service development. This comprehensive approach ensures responsible data use, fosters trust, and promotes innovation in the energy sector.

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:
Powersensor believes that several features of the CDR can be effectively adopted to govern third-party access to real-time energy data:

- *Accreditation: Maintaining ACCC accreditation ensures that only trusted and capable organisations with robust data security and privacy practices can access consumer data.*
- *Consent and Authorisation: Requiring explicit, informed consumer consent for data sharing, with granular control over data types and usage, aligns with consumer rights and promotes transparency.*
- *Data Minimisation: Restricting data collection to only what is necessary for the specific service being provided protects consumer privacy and prevents unnecessary data accumulation.*
- *Data Security: Enforcing strict data security standards, regular audits, and compliance with industry best practices safeguards consumer data against unauthorised access and misuse.*
- *Privacy Safeguards: Aligning with the Privacy Act and CDR privacy safeguards ensures responsible data handling, covering data collection, use, disclosure, storage, and retention.*
- *Transparency and Accountability: Mandating clear policies, procedures, and accountability for data handling practices fosters trust and empowers consumers.*

By adopting only the critical CDR features while ensuring ease of accessibility, the energy sector can ensure responsible and secure access to real-time data, promoting consumer trust, fostering innovation, and driving competition in the evolving energy market.