Mr Mitchell Grande
Australian Energy Market Commission
GPO Box 2603
Sydney NSW 2000

6 February 2023

Dear Mr Grande

Draft Report: Review of the regulatory framework for metering services

SATEC welcomes the opportunity to make comments in respect to the Australian Energy Market Commission's (AEMC) draft report for the regulatory framework for metering services.

We note specific comments to various topics covered in the report. Our comments relate to those areas SATEC can provide insight and add valuable comments to the industry and stakeholders.

SATEC appreciates the opportunity to contribute to the AEMC's review of the regulatory framework for metering services and would welcome further discussions with AEMC if that would be of assistance.

Please contact the undersigned by email at ron@satec-global.com.au or phone on +61 (2) 4774 2959 if you have any further questions.

Yours sincerely,

Ron Davis

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Managing Director | SATEC (Australia) Pty Ltd

Implementation of Accelerated Target

The proposed accelerated rollout can enable cost benefits through economies of scale. Technology advancements in metering are meeting demands such as DER, CER, FCAS or other services such as flexible trading. An accelerated rollout could also lock consumers into lesser able smart metering technology given the advancements in the smart metering industry taking place.

An accelerated rollout can enable innovation. The challenge is adaptation of such advancements by those service providers that choose to implement existing Business as Usual (BAU) style solutions and limiting consumer choice. SATEC is aware of instances of a consumer choosing enhanced metering technology solutions under Power of Choice (PoC), only to have the service provider deny their request and force implementation of the service provider's chosen technology.

The current NEM situation has reduced the number of Meter Data Providers (MDP) and Meter Providers (MP) compared to what was previously available prior to PoC implementation. Less competition from MDPs and MPs ultimately limits consumer choice in any available technology compliant to PoC rules.

The accelerated rollout could improve consumer choice in hardware or technology, or allow consumers to purchase and own their NMI approved smart metering hardware thus reducing their ongoing costs as is done in other jurisdictions such as New Zealand. This could be enabled with the idea of 'bring your own device' concept giving consumers more choice in technology PoC compliant compared to the service providers limiting available options and ultimately true consumer choice.

Given global geopolitical issues, processor (chip) supply shortages are evident today within the supply chain, as well as other componentry. Supply and demand challenges could exacerbate costs to consumers if manufacturers cannot meet timely demands or if global shortages within the supply chain increase.

Implementation of the one-in-all-in approach

SATEC has invested in providing NMI Approved solutions for multi-occupancy installation needs. In particular, the multi-channel-metering-solutions provided by SATEC and other global metering manufacturers provide significant cost savings in installation time and space. These new industry solutions offered through advancements in metering technology remove some needs to replace or upgrade existing switchboards whilst improving safety such as with Low Power Instrument Transformers (LPIT) or High-Accuracy-Current-Transformers (HACS). LPIT technology is based on existing Current Transformer (CT) technology, however the secondary circuit of the CT produces low alternating current through the use of significant 'more turns' or windings of the secondary circuit within the CT.

Common fuse environments with legacy metering installations often coincide with limited installation space. Where hyper-dense metering installations exist, demand for non-traditional installations can be required. Examples of hyper-dense metering installation include multi-occupancy installations within apartments, shopping centres and data centres co-location facilities.

Installation challenges can also be solved through use of new metering technology that reduces installation space requirements such as DIN devices that comply with PoC requirements, or NMI Approved multi-channel-metering-solutions in compliance with PoC. Additionally, new LPIT CT technology such as SATEC's High-Accuracy-Current-Sensors improve accuracy outcomes for consumers and provide improved safety in installations. LPIT technology further allows for retro-fit installations with split-core CTs that could limit the need to replace or upgrade existing switchboards.

LPIT technology has been assessed and approved by the National Measurement Institute (NMI). NMI is currently in the process of advising the International Organisation of Legal Metrology (OIML) based on their adoption of such new technology and has advised OIML of their existing draft proposals. Measurement Canada implements such LIPT technology and IEEE have draft proposals in consideration.

Minimum contents requirement for the basic PQD service

SATEC believes that many markets, and consumers for that matter, will require power quality data. For example, EV chargers which will become market participants requiring FCAS compliance will need effective metering solutions and will benefit from a single meter with multiple communications ability to satisfy operator, DNSP, MDP and retailer requirements will necessarily grow in demand. Consumer Energy Resources (CER) are seeing a proposed demand for community batteries, or “batteries as a service” driven by certain stakeholders. Power quality data is also extremely important with the data centre industry.

Power quality data, within international standards exceeds the ability of many metering within PoC installations. Power quality should be based on high-sampling, and conditional response from smart metering devices.

Power quality requirements, in respect to the metering review, is focused on minimal data with respect to the power quality global standards. Power quality data standards include, but are not limited to IEC EN50160, Power Quality Data Interchange Format (PQDIFQ) as well as others.

Phase angles can assist with commissioning ensuring correct wiring. Given correct installation and commissioning practices, phase angles can also assist with tamper detection.

SATEC sees the benefit of harmonic measurement within power quality data. Inverters today with CER installations could cause additional harmonics, necessary for additional Zero Export controllers due to issues with harmonics introduced to an electrical system. Zero Export functionality also exists within smart metering hardware such that control functions can provide a solution for DNSPs or grid providers without an addition of a secondary controller for this function.

Utilising the right exchange architecture for the basic PQD service

The Shared Market Protocol (SMP) could be enhanced through multiple communication pathways from the smart meter. Presently, smart meter data is mostly processed within a single time, within a 24-hour period. This once per day processing limits communication and architecture design.

Multiple simultaneous communications is possible from smart metering - e.g. dual, triple or quadruple communications simultaneously separated communication paths for a smart meter.

The SMP is mostly enabled by multiple individual meters installed. This functionality can be assisted by multi-channel-metering. Various stakeholders could access data directly, and in real-time, compared to a market settlements data style approach with daily processing of data made available presently.

Regulatory measures to enable innovation in remote access to near-real-time data sooner

Across the NEM are smart meters with low level communication instilling restrictions considering of the low latency communications deployed – e.g. RS-232 based 9600bps. The current mass deployment of 1:1 style RS-232 topologies limits stakeholders from real-time access, DER functionality or demand side participation applications for instance. Serial based, 1:1 (RS-232) communications lessens openness and real-time data access for multiple participants and service providers.

Through use of multiple communication channels or enhanced technology such as Ethernet, not only higher bandwidth and responsiveness is enabled but also potential shared communication without disruption of service delivery. The large bottleneck limiting near-real-time data is in old serial communications which lack flexibility and high availability of data compared to modern systems that facilitate improved communication architectures.

Regulatory measures to enable innovation in local access to near-real-time data sooner

Consumer real-time data can be offered via Ethernet, hardwired or WiFi enabled smart meters in a standardised web-server. Ethernet protocol supports simultaneous communications via TCP Socket enablement, thus allowance for multiple participants to communicate to a Network Interface Card (NIC) simultaneously, with increased bandwidth compared to traditional “serial communications”, thus allowing for the SMP, or other service providers to access data without need of secondary devices or additional metering hardware.

One challenge in the “bring your own device model” would be the standardisation of NITP-14 processes to verify that the smart meter and comparable “bring your own device” would correlate accurate data. Consumer unnecessary complaints to their retailers or service providers could be based on the “bring your own device” being inaccurate, untested and unsupported in thus preventing unnecessary consumer complaints should errors be present. The “bring your own device model” could assist consumers keeping costs down should it be possible for the respective consumer to purchase and own their PoC compliant smart meter with enhanced communication ability such that they are not only dependent on the limited choices offered by service providers.