

March 28th, 2019

Mr John Pierce
Commissioner
Australian Energy Market Commission Sydney NSW 2000

BY EMAIL
Cc Sherine Al Shallah Senior Adviser

Reference: EMO0037

Dear Mr Pierce,

Wattwatchers is pleased to make a submission to this review - AEMC, Stand-alone power systems - Priority 2, Consultation paper, 1 March 2019.

We also appreciated the opportunity to meet with your team working on this review.

We have considerable expertise in metering innovation and are happy to share our experience with the AEMC at any stage.

We anticipate that a more contemporary technology-enabled approach will have benefits and material value to all parties in regard to the future management of standalone power plants, especially at the level of local community micro-grids.

SUBMITTED ON BEHALF OF WATTWATCHERS DIGITAL ENERGY BY:

A handwritten signature in black ink, appearing to be "Murray Hogarth", with a long horizontal line extending to the right.

Murray Hogarth, Director of Communications and Community Networks
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WATTWATCHERS SUBMISSION TO AEMC

INDUSTRY STAKEHOLDER CONTRIBUTION IN REGARD TO:

Review now before the Australian Energy Market Commission (AEMC):

- Reference: EMO0037
- AEMC, Stand-alone power systems - Priority 2, Consultation paper, 1 March 2019

RESPONSE SCHEDULE:

Date: 28th March, 2019

Company Name: Wattwatchers Pty Ltd (trading as Wattwatchers Digital Energy)

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Key Contacts for this Response

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Our Organisation

Sydney-based [Wattwatchers](http://www.wattwatchers.com.au) is a hardware-enabled energy data company. We create utility-grade solutions - mainly deploying behind the power company's meter - at consumer-accessible prices, 'working with' numerous third-party software applications.

We provide the real-time, highly-granular and cloud-connected monitoring, remote-switching and orchestration capabilities that will underpin the digital-and-distributed era for electricity, for use cases including: solar PV performance and

optimisation, virtual power plants, demand response, measurement and verification (M&V), IoT integrations, artificial intelligence, EV deployment, and peer-to-peer trading, continuous payments and smart contracts (with and without blockchain).

Wattwatchers was profiled (p142) in [AEMC 2018 Retail Energy Competition Review](#).

Confidentiality (waived)

Please note that Wattwatchers does NOT regard this submission, in its entirety, to be commercial-in-confidence. It can be used, cited and published as the AEMC sees fit.

Background & Context

Wattwatchers Digital Energy (the trading company for the Energy Saving Networks Group Pty Ltd) welcomes the AEMC undertaking this rule change process in regard to implementing a wholesale demand response mechanism, and we applaud the initiative of the proponents in requesting it.

Our contribution, which follows, comes from the perspective of a homegrown Australian EnergyTech start-up, now into the commercial scale-up phase. As such, and working primarily but not exclusively in the National Electricity Market (NEM), our company's progress and prospects, and our problems, frustrations and opportunities, are substantially shaped by the regulatory operating environment - both for the NEM specifically, and more widely.

Companies like Wattwatchers operate in a very asymmetrical commercial and regulatory environment, which is highly rule-bound, and in which large legacy electricity retailers, network businesses and metering companies are deeply embedded in an increasingly outdated but still powerful electricity system.

The large players also typically run large regulatory affairs teams, backed by extensive legal resources, which are totally disproportionate in comparison to the resources that startups can bring to bear.

We urge that the AEMC, through this rule change process and beyond, specifically take into account the need, and indeed the opportunity to clear a better path for the technical innovation - and the fresh ideas, perspectives and business models that startups and scale-ups bring to the table.

Last year, in collaboration with several EnergyTech startups, Wattwatchers led the drafting of a policy brief for promoting greater innovation in the energy sector; in which the need for deliberate nurturing of the emerging EnergyTech centre was canvassed.

The relevant section included:

1. **Innovation problem** - the current market frameworks, regulatory systems and prevailing business models are inhibiting energy-tech innovation, including restricting opportunities to propose, test, refine and prove-up, and ultimately go to scale with new and better solutions.

How to respond - proposed policy-based solutions include:

- Innovation 'sandpits' within the existing regulatory environments to allow commercial-scale piloting of solutions with targeted regulatory exemptions
- Further investment in incubation and acceleration programs, and energy clean-tech startup support and investment (e.g. grants, loans, financing, venture capital)
- Greater and more-focused use of government procurement to give innovators a head start on gaining market access (e.g. mandate PV with cloud-connected monitoring and control for all government and new buildings with suitable roof spaces)

Although we did not focus on standalone power systems per se at the time, we believe the above sentiments are highly applicable to this area as well.

This Review - Some Key Thoughts

Wattwatchers would welcome any further opportunities to meet with the AEMC team to discuss our technology experience and capabilities, and also our views on how technical aspects of the proposed rule change should be framed and approached.

As well as this submission, we can on request provide additional information in regard to Wattwatchers solutions at the hardware, software, communications, cloud infrastructure and user interface levels.

We believe that this would assist the AEMC and other participants in this review process to better understand how digital technologies for the energy sector are evolving rapidly, and are rendering much of the traditional body of regulatory and technical requirements out-of-date and unfit for purpose in an increasingly distributed, bidirectional electricity

system in which consumers will have ever greater involvement as ‘prosumers’, who can generate and store energy themselves, and as the owners of data (i.e. consumer data rights).

The standalone power system future is an added dimension, which will lead to communities as ‘prosumers’ as well as individual consumers. We submit that enabling technologies can do more to enable competition than more traditional rule-based attempts to ‘protect’ consumers.

Our core submissions

In regard to developing a model for transitioning local edge-of-grid communities to move off the main electricity market in a local microgrid, Wattwatchers has been an early driver and ongoing supporter of taking a consumer-engagement focused approach.

We framed and advocated exactly this approach at the Energy Networks Australia ARENA A-Lab series in 2017, which was run to support the realisation of the Network Transformation Roadmap co-developed with the CSIRO.

Subsequently a potential project was developed in collaboration with a leading research organisation, to be led by them, but thus far it has not gained funding support. The project was borne out of a realisation that energy consumers will be better able to make good and informed decisions about the future of their electricity systems, including potentially migrating to local microgrids, if they are supported by strong data that is relevant to them and the communities in which they live and work. Additionally, they also would be better able to manage the implementation and ongoing operations of such local microgrids.

High-level points that we would like to share via this submission include:

- Metering and control technologies in this space should not be bound by the current requirements for billing meters (i.e. NMI pattern-approved) and also the AEMC minimum specifications under chapter 7 of the NER and in addition those introduced as part of Power of Choice. In our submission, these are outdated given the rapid evolution of superior digital technologies including cloud-enabled services. NMI pattern-approval, for example, is based on the National Measurement Act (1960), legislation that predates decimal currency much less the digital revolution. This does not mean abandoning relevant requirements to protect consumers and ensure integrity in the system, for example Class 1 accuracy* for metrology (the same as current billing meters) and a minimum of 5-minute time-and-date-stamped

measurements, reported in real-time through the cloud, logging in devices for a minimum period (e.g. 14 days, or longer) to protect against data loss, and retention of data in cloud storage for a specified period (e.g. 1 year).

**There are precedents for this in certificate schemes such as the Clean Energy Regulator in regard to LGCs and state-based energy saving certificate schemes.*

- Specific consideration that microgrid services providers do not have to be licensed energy retailers. Rather, there should be provision for third-party providers of microgrid services, as well as demand response and virtual power/demand plant (VPDP) aggregation services, for managing the enablement and coordination of sites to participate in demand response programs. Wattwatchers, for example, will soon begin rolling out a technology-led project to aggregate 5000+ homes, businesses and schools by enrolling participants through community partner channels, and deliberately not through energy retailers or network businesses. It is an open question whether Wattwatchers becomes the 'aggregator' in this model, or alternatively is an enabler for other aggregators (which could include retailers that accept Terms & Conditions to ensure that end-consumers have ultimate decision-making control, and ownership of data, and remain unfettered if they wish to switch to another retailer). An important consideration is that the future for standalone power-systems at multi-site/community level should specifically allow for a competitive marketplace for microgrid service providers, with designed-in portability i.e. no technology lock-in, with industry-standard cloud infrastructure such as APIs (see more below).

- A focus on the technologies and management processes that will empower consumers and also innovative business models in an energy system future that can align standalone power systems as an integral adjunct to a high DER penetration grid. Wattwatchers, again by example, has just launched our 3.0 cloud infrastructure 'Mercury', including a streaming API, which will scale to hundreds of thousands of our devices, each of which produces a standard operational minimum of 106,000+ data points a day, delivered in real-time to the internet, compared with 48 for a typical smart meter. Our cloud can integrate with other softwares and hardwares, including smart meters (NMI pattern-approved/AEMC min spec). We are currently the second technology provider in the world after Tesla to integrate with GreenSync's Distributed Energy Exchange (deX), and expect to integrate with the planned AEMO API as soon as it is available. To ensure portability for consumer sites, and interoperability between technologies and aggregator business models, this AEMC process should pay particular attention to issues such as open standards, industry-standard cloud infrastructures, machine readable formats and suitability for emerging solutions e.g. IoT, AI.

Conclusion

Thank you for this opportunity to contribute to the review process. We also would welcome an opportunity to answer further questions, including via presentations.

Finally, as noted in the introductory letter to this submission, we expect that a more contemporary technology-enabled approach will have benefits for, and will add material value to the process of transitioning to more community-based standalone power systems.