

March 27th, 2019

Mr John Pierce
Commissioner
Australian Energy Market Commission Sydney NSW 2000

BY EMAIL

Cc Declan Kelly, Adviser, AEMC - REF: ERC0247, ERC0248, ERC0250

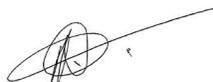
Dear Mr Pierce,

Wattwatchers was not able to attend the public consultation in Melbourne for the Wholesale Demand Response rule change proposals. We are sending this directly to the rule team and intend it to be taken as a public submission which your staff are welcome to post on the AEMC website, even though we acknowledge that the initial consultation period has ended and the process is now focused on the Technical Working Group.

We have considerable expertise in metering innovation and are happy to share our experience with your rule change team or the TWG stakeholders. Metering innovation can lower the cost and increase the benefits of reforms such as demand response. We expect that a more contemporary technology-enabled approach will have benefits and material value to all parties:

1. AEMO will be better able to manage baselines and settlements
2. AEMO will have more visibility and ability to forecast and regulate system security
3. Buyers of demand response will have more certainty and can offer more sophisticated contracts
4. Retailers (assuming most consumers use third party aggregators for demand response and stick with a conventional retailer for energy) will be able to hedge more accurately
5. Wholesale market will see more demand response offered and delivered, which will suppress wholesale prices and reduce volatility
6. Networks and FCAS markets will have more demand response resources at their disposal, due to higher uptake of demand response particularly among households and small businesses

SUBMITTED ON BEHALF OF WATTWATCHERS DIGITAL ENERGY BY:

A handwritten signature in black ink, appearing to be "Murray Hogarth", written over a circular stamp or seal.

Murray Hogarth, Director of Communications and Community Networks
M 0417 267235 E murray@wattwatchers.com.au

WATTWATCHERS SUBMISSION TO AEMC

INDUSTRY STAKEHOLDER CONTRIBUTION IN REGARD TO:

Three related rule change processes now before the Australian Energy Market Commission (AEMC)

- Wholesale demand response mechanism (ERC0247)
- Wholesale demand response register mechanism (ERC0248)
- Mechanisms for wholesale demand response (ERC0250)

IN SUPPORT OF:

- Public Interest Advocacy Centre (PIAC)
- Total Environment Centre (TEC)
- The Australia Institute (TAI)

(This submission is being made at the behest of the above organisations, which are the proponents of the rule change request to introduce a mechanism for wholesale demand response in the national electricity market. It is intended to support them and the AEMC itself during the Technical Working Group stage of this process.)

RESPONSE SCHEDULE:

Date: 26th March, 2019

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

ABN: 47 123 010 588

Address: Suite 2.01, 28 Chandos Street, St Leonards NSW 2065

Key Contacts for this Response

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Our Organisation

Sydney-based [Wattwatchers](#) 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. They 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 demand response at the time, we believe the above sentiments are highly applicable to this area as well. In the intervening period, Wattwatchers has become a technology supplier to two of Australia's three top tier energy retailers that are participating in the 3-year AEMO-ARENA 'emergency pool' demand response program, with a focus on enabling demand response aggregation with residential consumers. This program remains a work in progress.

This Rule Change - Some Key Thoughts

Wattwatchers would welcome any opportunity 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 interfaces levels. We believe that this would assist the AEMC and other participants in this rule change 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).

Our core submissions

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. 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) to protect against data loss, and retention of data in cloud storage for a specified period (e.g. 1 year).
- Specific consideration that demand response aggregators do not have to be licensed energy retailers. Rather, there should be provision for third-party providers of demand response and virtual power/demand plant (VPDP) aggregation services, 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)

- A focus on the technologies and management processes that will empower consumers and also innovative business models in an energy system future that can utilise demand response as a core tool for managing 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 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.

Benefits of this approach

As noted in the introductory letter to this submission, we expect that a more contemporary technology-enabled approach will have benefits and material value to all parties:

1. AEMO will be better able to manage baselines and settlements
2. AEMO will have more visibility and ability to forecast and regulate system security
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5. Wholesale market will see more demand response offered and delivered, which will suppress wholesale prices and reduce volatility
6. Networks and FCAS markets* will have more demand response resources at their disposal, due to higher uptake of demand response particularly among households and small businesses

*Note that Wattwatchers is a partner with AEMO and Solar Analytics (project leader) for an ARENA DER grant aimed at delivering system benefit from the high-frequency voltage and potentially frequency measurements made by Wattwatchers devices. This includes canvassing hardware and firmware modifications that would allow reporting and recording of sub-second measurements (50/200 milliseconds), which could support FCAS.

Conclusion

Thank you for this opportunity to contribute to the rule change process.

We would welcome an opportunity to present to and answer questions from the Technology Working Group, whether formally or informally.

