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Dear Madam/Sir

Comment on GEMS Act Review Draft Report

As one with 37 years of close involvement with the E3 program and its predecessors, I fully support the continuation of the GEMS Act and the enhancement of the E3 program with regard to expanding the scope of coverage, increasing the stringency of MEPS, continuing energy labelling and strengthening compliance.

I will confine my comments to two issues only: demand response and program impact analysis.

Demand Response

I make the following observations in my capacity as chair of Standards Australia committee EL-054 *Remote Demand Management of Electrical Products*, which is responsible for AS/NZS 4755 *Demand Response Capabilities and Supporting Technologies for Electrical Products*. Having been a foundation member of committee EL-054 since its inception in 2005, I have personally drafted several parts of the standard, covering both the demand response of end-use electrical products and the control technology (Demand Response Enabling Devices, or DREDs). The committee has just finished drafting a new part of AS/NZS 4755, to be published in 2019, covering demand response for internet-enabled electrical products not requiring a separate DRED.

I am also secretary of IEC (International Electrotechnical Commission) Technical Committee 59 Working Group 15, *Connection of Household Appliances to Smart Grids and Appliances interaction*. The WG prepared IEC Technical Specification (TS) 62950, *Household and Similar Electrical Appliances – Specifying Smart Capabilities of Appliances and Devices – General Aspects*, published in 2017.

The Department will be aware that the E3 Program has previously supported mandating AS/NZS 4755 demand response (DR) capabilities for air conditioners, electric water heaters, pool pump controllers and home chargers for electric vehicles (EVs). The main objective was to provide a low-cost platform for the management of peak demand. My company prepared a cost-benefit analysis and consultation regulation impact statement (RIS) for the proposal.¹

After extensive consultations with electricity distributors and retailers and the appliance industry, a Decision RIS for the COAG Energy Council was provided to the Office of Best Practice Regulation. The proposal was halted after the change of Commonwealth Government in September 2013. Nevertheless, the process encouraged many international air conditioner manufacturers to gain a commercial advantage by introducing models compliant with AS/NZS 4755.3.1, and so enabled electricity suppliers to offer customers cash incentives to purchase these products and enter into demand response contracts. As you may be aware, the Energex PeakSmart program has resulted in

¹ <http://www.energyrating.gov.au/document/consultation-regulation-impact-statement-mandating-smart-appliance-interfaces-air>

the enrolment and regular remote control of over 100,000 AS/NZS 4755.3.1 compliant air conditioners.² Since then, AS/NZS 4755.3.5 for battery controllers has also been published, and batteries with these capabilities are available in Australia.

Large scale DR has been recognised as an essential element in a modern, renewables-intensive electricity system, by the Finkel Review, the Australian Energy Market Operator (AEMO), the Energy Security Board (ESB), the Energy Networks Association (ENA), CSIRO and others. Much of this DR can be, and will be supplied by the type of appliances and products covered by the GEMS Act. Indeed, it was the involvement of the E3 program, and the expectation by industry of regulation under GEMS, which led to the current availability of so many models of DR-capable air conditioners in Australia.

The GEMS determination for air conditioners does not require compliance with AS/NZS 4755.3.1, but – through its referencing AS/NZS 3823 – does require suppliers to disclose the status of their products with regard to AS/NZS 4755.3.1. This information was formerly included on the air conditioner energy label, and with the transition to the new climate zone label it will still be available on www.energyrating.gov.au. AS/NZS DR capability is of interest to many consumers, as evidenced by the fact that *Choice* now includes this information in its air conditioner product reports.

Given that the E3 program has been instrumental in developing DR capability to this point, it is curious that the GEMS Review Report states (p78) that “Inclusion of this additional role to the GEMS Program would be a significant shift and is unlikely to be the most effective approach to increasing demand response initiatives within the National Energy Market.”

The extensive support which E3 has given to DR in the past was based in the recognition that the E3 program was ideally placed to provide a technical and regulatory platform for a residential sector DR service market. It was always recognised that other stakeholders (energy suppliers or aggregators) would need to build on this platform to develop the DR service market. This has indeed occurred in Queensland and is likely to occur in other states as well. While E3 involvement via the GEMS Act may not be *sufficient* on its own to increase residential sector DR initiatives in the NEM, it is a *necessary* condition.

One factor which inhibited the consideration of mandating AS/NZS 4755 compliance in 2013 was legal advice that the GEMS Act only empowers the Minister to regulate with regard to the energy use and energy efficiency of products, not their demand response capabilities. As technology develops, it will be more and more difficult to separate these characteristics. Therefore, to put the Minister’s power beyond doubt, I propose the following recommendation (to follow Rec 36)

The GEMS Act should be amended to explicitly empower the Minister to regulate with respect to demand response and other “smart” capabilities of products, with regard to the definition and measurement of performance, specifying minimum performance levels and regulating the disclosure and labelling of product capabilities.

Modelling and Projecting Program Impacts

Having prepared more cost–benefit analyses and impact projections for the E3 program and its predecessors than any other consultant, I am naturally interested in the methodologies and assumptions. While these have evolved over the years, I and others have been careful to document assumptions and methodologies in great detail, and have been happy to have them peer reviewed. My latest work in this area (cited on p61) was a limited analysis undertaken in the context of the

² <https://www.energex.com.au/about-us/contact-us/frequently-asked-questions/peaksmart-air-conditioning-rewards>

development of the E3 triennial work program. It relied on compiling (and in some case trying to reconcile inconsistencies in) impact analyses undertaken by different consultants at different times, and advice from E3 on the implementation dates for programs, some of which have since been significantly delayed or abandoned altogether.

Furthermore, the brief was to consider the impact of all mandatory product energy labelling and MEPS programs so far implemented in Australia, beginning with energy labelling for refrigerators and freezers, implemented under NSW and Victorian State legislation in 1985 (the same program as now regulated under a GEMS determination). As the GEMS Act has been in place for only 5 of the 33 years since, it is not correct to style these estimates as simply “benefits of the GEMS regulation.”

It is not clear what assumptions or values were used in coming to the other estimates on p61 or in Appendix A. While I concede that my estimates are now too high, the other estimates seem far too low. This is important, because it seriously understates the national significance of these programs.

I fully support a more rigorous and transparent approach to cost-benefit modelling for current and proposed GEMS determinations, and for MEPS and energy labelling programs implemented prior to GEMS. This should take into account market dynamics (e.g. the tendency of many suppliers to increase product efficiency in anticipation of regulation, not just in reaction to it) and global network effects (i.e. actively participating in the maintenance of an international regulatory environment conducive to greater product efficiency, rather than free-riding on others’ efforts).

The E3 program has in the past tried to develop, document and publish agreed methodologies and default projections (e.g. for population, household numbers, energy and greenhouse emission prices). I coordinated these efforts, which also involved OBPR officers in an attempt to speed OBPR consideration of E3 RISs. The approach had some success but fell into disuse some year ago.

I fully support Recommendations 25 and 26, and would add the following:

The Commonwealth Government, in consultation with the other E3 jurisdictions, develop, publish and regularly update an agreed methodology and default values for the calculation of the costs and benefits of proposed equipment and appliance energy efficiency regulations, and direct the Office of Best Practice Regulation to expedite consideration of proposals which use the agreed methodology and default values.

I would be happy to expand on these points if required,

Yours sincerely



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