

19 March 2015

Mr Richard Owens
Senior Director
Australian Energy Market Commission
Level 6, 201 Elizabeth Street Sydney NSW 2000
By email: submissions@aemc.gov.au

Submission in support of proposed DMIS Rule Change (AEMC Ref. ERC0177).

Dear Mr Owens,

The Institute for Sustainable Futures (ISF) is pleased to support the **Demand Management Incentive Scheme Rule Change** proposed by the COAG Energy Council and the Total Environment Centre. This rule change is an important and long overdue reform. If adopted, and then properly implemented by the AER, it should deliver a significantly more affordable, more innovative, more resilient and less polluting electricity industry in Australia.

ISF is a research centre of the University of Technology Sydney (UTS). ISF's mission is to create change towards sustainable futures by conducting independent project based research. We undertake sustainability research for a wide range of include government, business and community clients in Australia and overseas.

ISF was commissioned to prepare the report which supported the TEC Rule change proposal, [Restoring Power: Cutting bills and carbon emissions with Demand Management](#). ISF notes that many of the issues raised in the AEMC consultation paper are addressed in the Restoring Power report. We recommend that the AEMC review this report in preparing its draft ruling.

The rationale for the rule change

ISF commends the AEMC on recommending this rule change in its *Power of Choice Final Report*, wherein it stated,

“We recommend that the NER is amended to reform the application of the current demand management and embedded generation connection incentive scheme so that it:

- a) provides an appropriate return for DSP projects that deliver a net cost saving to consumers; and**
- b) better aligns network incentives with the objective of achieving efficient demand management.**

This would include creating separate provisions for an innovation allowance.”
(p. 205)

In particular, on the basis of many years of extensive research, ISF endorses the arguments that the AEMC made for this rule change, which are worthy of citing in some detail here:

“Evidence suggests that under the application of the current regulatory framework, in combination with other influences, network businesses may not be reacting to the incentives in the way intended with respect to pursuing efficient DSP projects.

... and the potential for DSP to provide a credible, efficient alternative to network investment remains largely untapped. (p.199)

When a business is faced with a choice between network investment and a DSP project and both have the same potential for earned returns, the business is likely to go with the “easier” network investment option...

The current arrangements already ... allow the AER to develop and apply a separate incentive scheme for demand management, referred to as the DMEGCIS. This scheme has the objective of providing an incentive for distributors to implement efficient non-network alternatives ... However to date, this scheme has been applied in a very limited manner... (p. 205)

This means the scheme is not a “true” incentive scheme; that is, a scheme which allows a business to earn extra rewards where it has delivered defined goals. For this reason networks may not be properly incentivised to explore and develop DSP options instead of capital investment given the relative risks and characteristics of such projects. We also note that both the AER and network businesses have raised concerns about the administrative burden and costs of the current scheme.

To address this, we are recommending that a more comprehensive demand management incentive scheme is available to be applied to distribution network businesses. We are proposing that this is implemented through a rule change which adds more principles and criteria for the application of the demand management incentive scheme.

The rule change will also include an objective to clarify the purpose of the incentive scheme – that is to correctly incentivise the network business to develop and pursue DSP option as an efficient alternative to capital investment. This includes permitting the network businesses to retain a share of the non-network related market benefits arising from the DSP option...

This change will address current ambiguities and clarify the application of the demand management incentive scheme, and hence put beyond doubt the interpretation of the provisions. The change will also promote flexibility and adaptability, enabling the regulator to make decisions that take account of changing circumstances and different characteristics of network businesses. Overall the change will provide more opportunity and certainty for networks to pursue DSP projects which deliver savings to consumers and therefore will [be] in the long run interest of consumers. This position has been supported by all stakeholders, including network businesses and the AER. We also consider that this recommendation will support other reforms set out in this final report.” (pp. 206-207)

As noted in *The NEM Report Card*¹ (2011), the National Electricity Market has in recent years poorly served consumers’ interests. While the doubling of electricity prices between 2007 and 2014 is a very prominent aspect of this failure, there have been other major shortcomings, as noted in this report. A primary cause of this failure has been the chronic neglect of cost effective Demand Management (DM).

¹ Ison, N., Usher, J., Cantley-Smith, R., Harris, S. and Dunstan, C. (2011). *The NEM Report Card: How well does the National Electricity Market serve Australia?* http://apo.org.au/files/Resource/nem_report_card_final_22_march_2012-1.pdf

The barriers to DM in the NEM as outlined by the AEMC in its *Power of Choice Final Report*, broadly accord with the barriers as perceived by the stakeholders in the Market as evidenced by ISF's survey of Perceived Barriers to DM. The results of this survey are presented in Figure 1. In particular, all five of the highest ranked barriers (and several other barriers) are likely to be addressed, at least in part by the adoption of the DMIS rule change and the subsequent development of an effective DMIS by the AER.



Figure 1: List of perceived barriers to DM, in order of stakeholder agreement²

² Dunstan, C., Ross, K.E. & Ghiotto, N. 2011, *Barriers to demand management: A survey of stakeholder perceptions*, Sydney.

The Potential of Demand Management

The AEMC commissioned report by Frontier Economics estimates the potential savings from cost effective DM at between \$4 billion and \$12 billion. This is based on potential “reduction in NSW, QLD, and VIC [of] between 400 MW to over 1300 MW by 2020”³. While some of the specific figures are not explicitly stated in the Power of Choice Report, this suggests reductions in peak demand of between about 3 percent and 12 per cent in these states.

Such a range is quite plausible when compared to the reported actual DM performance for electricity utilities in the United States as shown in Figure 2. DM now contributes the equivalent of 7.5 per cent of non-coincident peak demand in the US (or 5.5 percent if load management contracted but not dispatched is excluded). This compares to less than 2 per cent of peak demand in Australia as noted in the *Restoring Power* report⁴. (It is noteworthy that comparable DM data is not regularly collected and reported in Australia as in the US.)

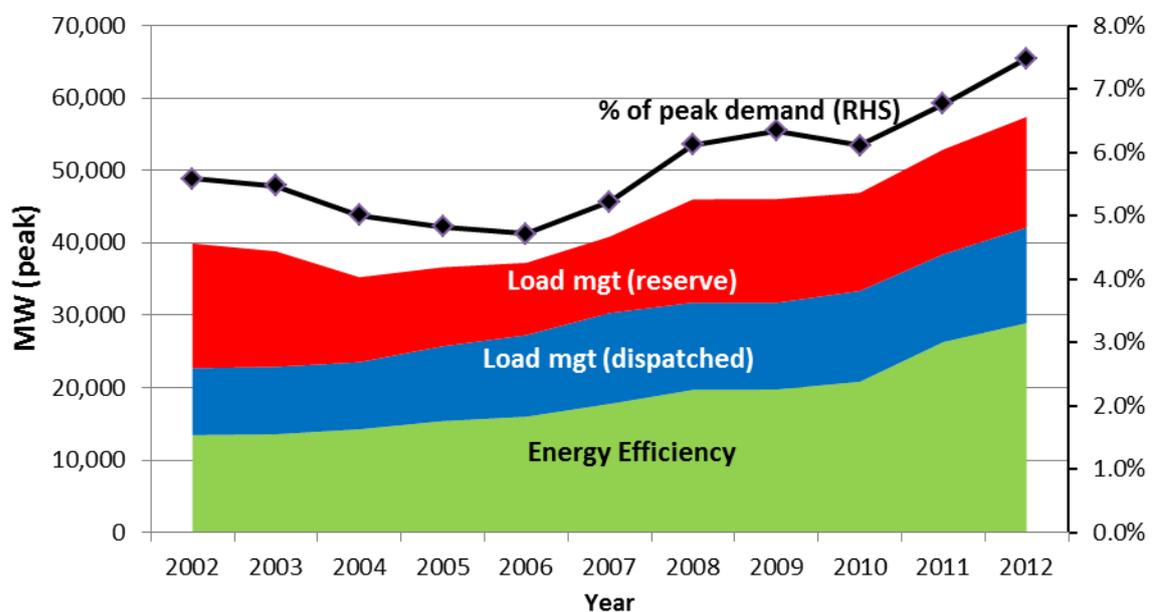


Figure 2. Electricity Utility Demand Management in the USA (2002-2012)

Data Source: Energy Information Administration⁵

As indicated in Figure 2, energy efficiency contributes about half of the reported reduction in peak demand in the United States. This contradicts the common perception in Australia that energy efficiency cannot contribute significantly to peak demand reduction.

The US experience is also informative as to the potential for cost effective DM. Even though DM has been widely practiced among US electricity utilities since the 1980’s, there has still been scope for a rapid growth in DM activity over the past decade. As shown in Figure 3, utility expenditure on DM has more than trebled from \$1.6 billion in 2002 to \$6.0 billion in 2012. Pro-rating for the size the Australian economy this would be equivalent to about **\$700 million** per annum in Australia at the current exchange rate (AUD\$1 = US\$0.78). By

³ AEMC (2012), *Power of choice review - giving consumers options in the way they use electricity*, p.256

⁴ Dunstan, C., Downes, J. & Sharpe, S. (2013) *Restoring Power: Cutting bills & carbon emissions with Demand Management*. Institute for Sustainable Futures, University of Technology Sydney. (See Figure 5)

⁵ US EIA, Table 10.2. Demand-Side Management Program Annual Effects by Program, (2015)
www.eia.gov/electricity/annual/html/epa_10_02.html

comparison, expenditure by network businesses on DM in Australia averaged **\$32.4 million** per annum between 2008/09 and 2010/11 and much of this took place in Queensland⁶.

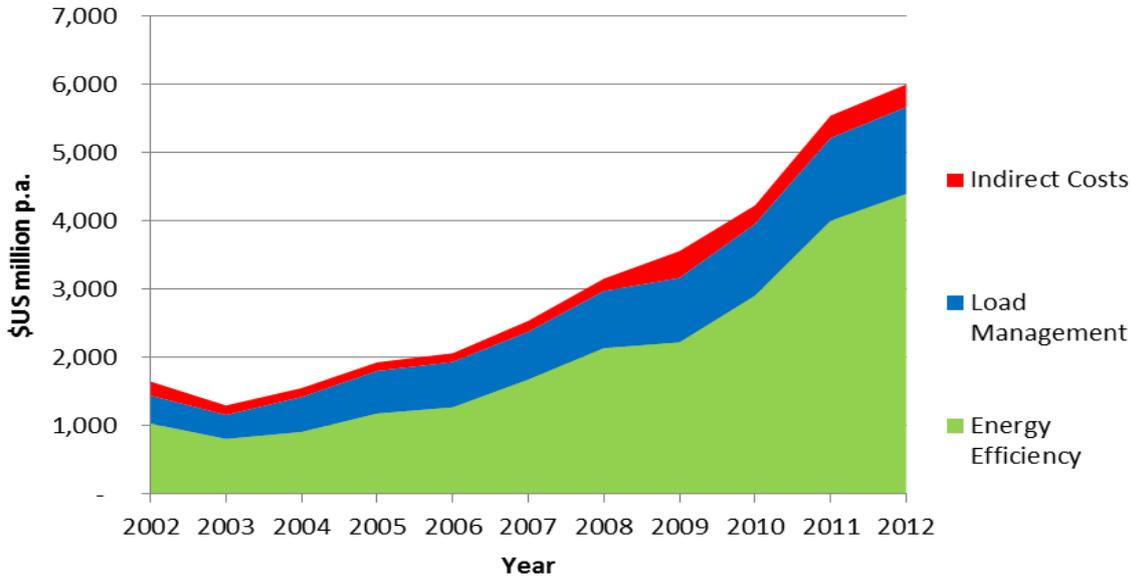


Figure 3. Expenditure on Electricity Utility Demand Management in the USA (2002-2012)
Data Source: Energy Information Administration⁷

While, the level of DM activity in the United States has increased very rapidly, the costs have increased modestly from US3.2 cents/kWh in 2002 to US4.3cents/kWh in 2012, including both energy efficiency and load management costs (see Figure 4). Even at US4.3 cents/kWh (AU 5.5cents/kWh) this is much lower than the average cost of electricity in Australia of \$27 cents/kWh (including GST)⁸.

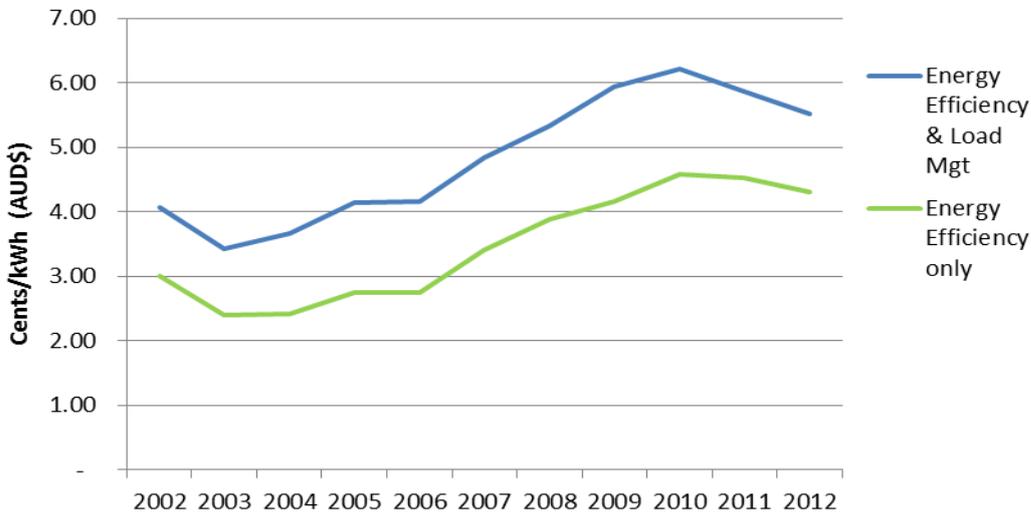


Figure 4. Cost of Utility Demand Management in the USA (2002-2012)
Data Source: Energy Information Administration⁹

⁶ Dunstan, C., Giotto, N. & Ross, K., (2011), *Report of the 2010 Survey of Electricity Network Demand Management in Australia (SENDMA)*

⁷ US EIA, Table 10.5. Demand-Side Management Program Direct and Indirect Costs, (2015) www.eia.gov/electricity/annual/html/epa_10_05.html

⁸ AEMC, 2014 Residential Electricity Price Trends Report, 5 December 2014, Sydney. (See Figure 3.17)

⁹ US Energy Information Administration (2015), www.eia.gov/electricity/annual/html/epa_10_05.html and www.eia.gov/electricity/annual/html/epa_10_02.html

The potential to develop DM quickly is also illustrated by Australian experience. Between 1990 and 1994, the State Electricity Commission of Victoria developed and implemented a large and diverse DM Action Plan. With a capital expenditure of \$24.6 million and a non-capital cost of \$23.4 million up to June 1993, the *net* economic benefit of the programs implemented was estimated at \$44.5 million¹⁰.

In Queensland, Energex have rapidly developed DM activity, which it describes as follows:

“In 2009/10, Energex set a demand reduction target of 144 MVA for the current regulatory period 2010 - 2015. This target was used to reduce the total system peak demand forecast by 144 MVA. As of June 2014, 88% (126 MVA) of the regulatory period target has already been achieved, and Energex remains well on track to achieve its five year goal by June 2015.

The DM program, funded via both the Australian Energy Regulator’s (AER) approved DM operating allowance and the Department of Energy and Water Supply (DEWS) (formally the Office of Clean Energy) has achieved these outcomes at a significantly reduced cost than was originally budgeted. For the AER Determination 2010 - 2015, Energex was allowed \$165 million of expenditure, escalated into 2014/15 dollars (\$132 million opex and \$33 million of capex). The estimated total opex and capex expenditure to be incurred by June 2015 is \$90 million. When escalated into 2014/15 dollars, this equates to \$95 million⁷ (\$83.5 million opex and \$11.5 million capex).”¹¹

Figure 5 illustrates the composition of the Energex DM program.

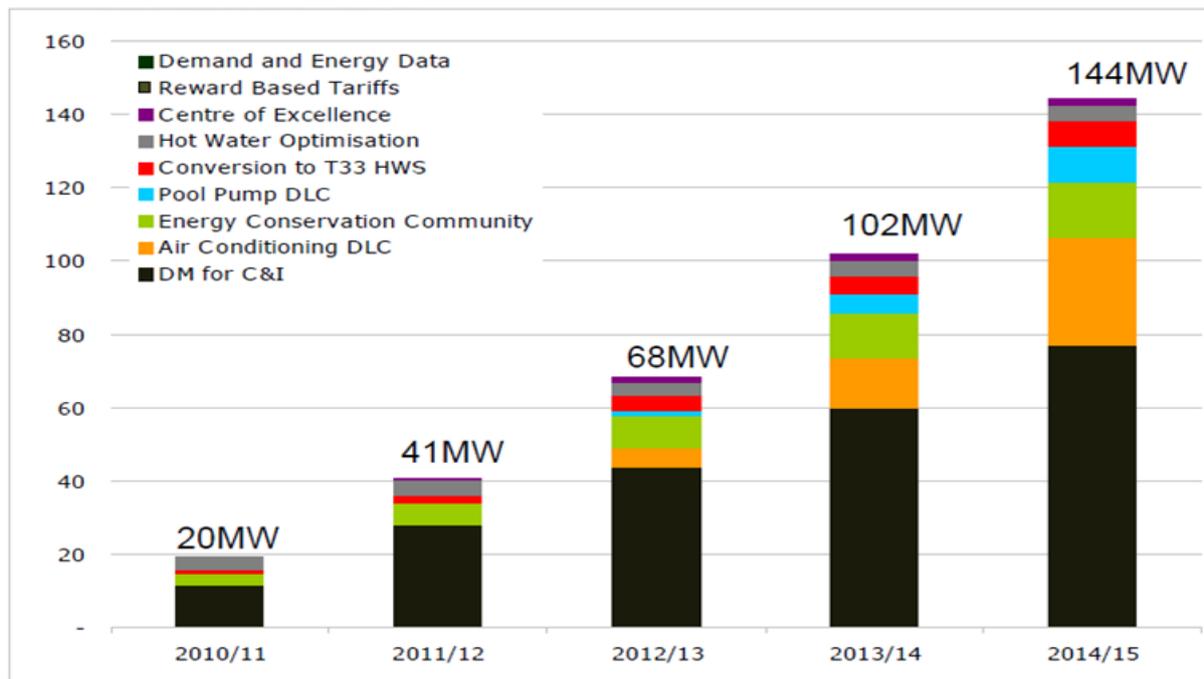


Figure 5: Energex DM Program Targets (2010-2015)¹²

¹⁰ Electricity Services Victoria (1994), *Demand Management Action Plan, Final Report (Book 1)*, p. 79, 101.

¹¹ Energex (2014), *Submission to AER Regulatory Determination, Appendix 17: DM Program*, p.2, <http://www.aer.gov.au/sites/default/files/Energex%20-%202017.%20Demand%20Management%20Program%20-%20October%202014.pdf>

¹² www.energex.com.au/network/network_prices/pdf/Energy%20Conservation%20&%20Demand%20Management.pdf

There are of course many other examples of DM that can be cited from Australia and overseas¹³.

Response to issues raised by the AEMC Consultation Paper.

ISF regrets that it does not have the resources available to respond fully to each of the questions raised by the Consultation Paper, but it offers the following comments on some of these issues.¹⁴ We are aware that other stakeholders such as the TEC are addressing these issues in more detail and we encourage the AEMC to consider carefully these submissions.

1.1 Having regard to current and potential future market conditions, and in light of recent changes to the regulatory framework for distribution businesses, is there a gap in the current framework which may be discouraging distribution businesses from pursuing demand management projects as an efficient alternative to network investment?

1.2 If a gap does exist, where does it lie? Is it a product of the provisions in the NER or a result of the current design of the DMEGCIS applied by the AER?

Response: These issues were well canvassed by the AEMC *Power of Choice Final Report*, which addressed both price and non-price based barriers to and solutions for DM. The slowing in energy demand and the rule changes in relation to *Connecting embedded generators under Chapter 5A* and *Distribution Network Pricing Arrangements* are both helpful but in no way mitigate the urgency of this DMIS rule change.

2.1 In making its decision on the network regulation rule change request, the AEMC considered how much prescription the NER should include. In this context, we welcome the views of stakeholders on the appropriate level of prescription to include in the NER to enable the AER to develop and apply an effective DMEGCIS. In particular:

(a) Having regard to the level of flexibility and discretion afforded to the AER in designing and applying other incentive schemes under Chapter 6 of the NER, is the level of flexibility and discretion currently afforded to the AER in relation to the DMEGCIS appropriate?

(b) If there is benefit in providing more prescription in the NER, is the level proposed by the COAG Energy Council and the TEC in their rule change requests appropriate?

Response: In its hesitancy to apply a meaningful DMIS, the AER has explicitly and implicitly flagged the need for greater prescription in the NER to enable the AER to develop and apply an effective DMIS.

2.2 Having regard to recent changes made by the AEMC to Chapter 5 and 5A of the NER in relation to the arrangements for connecting embedded generators, are additional financial incentives for innovation in the connection of embedded generators through the DMEGCIS required?

¹³ See for example, Crossley, D. 2010, *International Best Practice in Using Energy Efficiency and Demand Management to Support Electricity Networks*. Prepared for the Australian Alliance to Save Energy by Energy Futures Australia.

¹⁴ ISF sought funding from Energy Consumers Australia to assist consumer groups and other stakeholder in developing a detailed response to the Consultation Paper. This funding application was not successful.

Response: See responses to issues 1.1 and 1.2 above.

- 3.1. *Given that the proposed amendments in relation to the innovation allowance are largely reflective of existing AER practice, what additional benefits are likely to be gained by codifying these in the NER?*
- 3.2. *What impact, if any, will the proposed amendments have on distribution businesses incentives to utilise a greater proportion of their allocated allowances on innovative demand management projects, relative to current practice? For example, would greater certainty increase the likelihood of distribution businesses participating in this scheme?*
- 3.3. *Are the proposed amendments likely to address concerns raised by stakeholders around the size of the innovation allowances allocated by the AER to the distribution businesses (noting that, to date, these amounts have been considered to be modest)?*
- 3.4. *Given the new DAPR and DSES arrangements are now in place, what additional benefits will the proposed annual reporting requirements deliver to the market? Is there a risk of duplication in reporting for the distribution businesses?*
- 3.5. *Should the innovation allowance be a time-limited measure? If so, should the AER be given the flexibility and discretion to determine the appropriate timeframe?*

Response: The Demand Management Innovation Allowance could no doubt be improved, but it is so small as to be tokenistic and is not focussed on maximising net benefits of DM to consumers. The AEMC would be wise not to be unduly distracted by the DMIA in addressing the substantive issues around the DMIS.

- 4.1 *If distribution businesses are able to receive a payment based on a proportion of the market benefits produced by a demand management project, is this likely to increase investment in projects that will deliver broader market benefits that are in the long term interests of consumers?*

Response: The idea that if (well-designed and non-trivial) incentives are offered, then regulated entities will respond to such incentives is of course the essence of incentive regulation.

However, incentive payments should not be the only, or even the primary source of funding for DM by network businesses. In order to provide a level playing field, DM should be funded and expensed on the same basis as other network expenses as part of their normal business. This is the approach that has been applied to Energex and Ergon Energy in the current regulatory period, and should be extended to other distribution network businesses in the forthcoming regulatory periods. This is the approach that is advocated and described in some detail in the *Restoring Power* Report that supports the TEC Rule change proposal. ISF encourages AEMC to consider this approach in detail.

Provided this normal planning and budgeting approach to DM is applied then the DMIS could be very effective in encouraging better performance by network businesses in pursuit of cost effective DM.

- 4.2 *Given that the majority of distribution businesses are expected to be regulated under a revenue cap in the near future, is there value in amending the rules to explicitly require the inclusion of a payment for any foregone revenue resulting from implementing a demand management project approved under the innovation allowance? Should the AER retain discretion as to whether this component is appropriate?*

Response: This is a minor issue in the current context due to the shift to revenue regulation.

However as the AEMC is considering this rule change now, for completeness, it would be prudent and efficient for the AEMC to address this potential bias against DM in this rule change.

4.3 In light of the recent changes to the distribution network pricing arrangements, what are the potential benefits of requiring that the DMEGCIS include tariff based demand management options, in addition to non tariff based options?

Response: See responses above to issues 1.2 and 4.1. Provided DM is primarily funded through normal network business planning and budgeting processes, then there should be little to lose and much to gain by encouraging and incentivising the network businesses to maximise cost-effective DM including via tariff-based DM.

Conclusion

While the potential financial benefits of DM for customers (and network shareholders) are very significant as outlined above, this may not be the most important reason for adopting this DMIS rule change. Arguably of greater significance is the potential to mitigate risk for consumers (and shareholders). The shift towards decentralised energy (in the form of energy efficiency, local generation, battery storage, energy management technology, etc.) is now so pronounced, it would require wilful ignorance to ignore it. This trend is likely to accelerate.

The DMIS rule change would provide network businesses an opportunity to engage creatively and constructively with these emerging technologies. This is likely to greatly benefit customers and the broader Australian economy. To do so would also greatly assist Australia in the transition to a low carbon economy. This too is likely to be very much in the long term interests of consumers.

ISF wishes the AEMC well in its deliberations, looks forward to its draft ruling and is available to elaborate on this submission if that would be of assistance.

Yours sincerely



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