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20 March 2017

Re. Consultation Paper - Demand Management Incentive Scheme and Innovation Allowance Mechanism

Dear Mr Anderson

Thank you for the opportunity to provide a submission on the Demand Management Incentive Scheme (Scheme) and Innovation Allowance Mechanism (Allowance Mechanism).

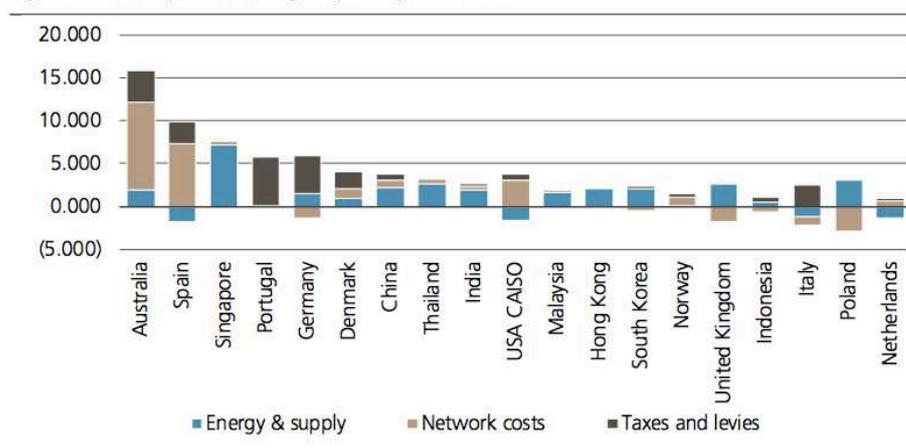
The Energy Efficiency Council (EEC) is the peak body for energy efficiency, demand management and cogeneration in Australia. The Council is a not-for-profit membership association, and its goal is to make sensible, cost-effective energy management measures standard practice across the Australian economy. Our members include independent experts, energy efficiency providers and various levels of government.

The EEC strongly supports the development of an effective Scheme and Allowance Mechanism, as these will improve energy affordability, energy security, competition and facilitate transition to a range of new forms of generation and consumer choices.

The most cost-effective way to meet Australian’s demand for energy services is a balance of investment in supply-side and demand-side activities, including generation, networks and demand management. However, there are a number of biases that lead to over-investment in networks and generation and under-investment in demand management.

As a result, the level of demand response in Australia is substantially below global best practice for provision of both capacity and ancillary services. This reduces energy security, increases energy bills and inflates greenhouse gas emissions. Australia’s energy bills rose rapidly in 2007-13, largely due to network expenditure, and much of this expenditure could have been avoided if demand management had been effectively utilised.

Figure 5: US cents per kWh change in power prices 2007-13



Source: Power utility companies, government databases, UBS estimates

The EEC strongly supports the development of an effective Scheme and Allowance Mechanism. Key points from our submission include:

- The Scheme and Allowance Mechanism must be of sufficient magnitude to drive major change to the way that Network Service Providers (NSPs) operate. This means a major change from the *status quo*.
- The Scheme and Allowance Mechanism must meet the principles that we set out in Section 3 of this submission, including:
 - Enable demand management providers to capture multiple value-streams, including network benefits and emergency capacity.
 - Reflect the currently high 'option value' of demand management.
 - Provide clear, secure and long-term price signals to NSPs.
 - Ideally transition to a more efficient set of core incentives for NSPs
 - Encourage competition
 - The Scheme and Allowance Mechanism must be supported by complementary policies.
- The Scheme should:
 - Include mechanisms to target potential disincentives
 - Incorporate a net market benefit sharing scheme
 - Promote competition by requiring NSPs to provide information and go to market for demand management projects, and actively oversee NSPs
 - Involve targets for demand management deployment and requirements for NSPs to report demand management metrics.
- The Allowance Mechanism should:
 - Be substantially larger
 - Involve pooled funds that can be bid for competitively
 - Enable demand management providers, not just NSPs, to bid for funds.

The attached submission discusses these issues in more detail. We look forward to being involved in this process as it proceeds. Your office can contact me on 0414 065 556 or via rob.murray-leach@eec.org.au.

Yours sincerely



Rob Murray-Leach

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**Energy Efficiency Council submission on the
Demand Management Incentive Scheme and
Innovation Allowance Mechanism**

Table of Contents

1. The Critical Role of Demand Management.....	5
2. Recommendations from the Energy Efficiency Policy Handbook	7
3. Principles for the Scheme and Allowance Mechanism.....	8
4. Potential Scheme Design Options	10
5. Potential Allowance Mechanism.....	13
6. Questions	14

1. The Critical Role of Demand Management

Demand management can provide range of vital services to the electricity grid, including:

- **Network capacity:** energy efficiency and demand response can reduce peak demand, reducing the cost of providing network services.
- **Generation capacity:** energy efficiency can provide ‘baseload capacity’ and demand response can provide peaking capacity.
- **Emergency capacity:** demand response can provide ‘emergency capacity’ in situations where supply is not able to meet load, such as recent events in South Australia. An effective demand response system would help retain energy supply to all high value uses by preferentially shedding discretionary and low-value uses.
- **Frequency Control Ancillary Services (FCAS):** demand can be adjusted very rapidly (e.g. <1 second) to provide FCAS and other security services.

Demand management has a critical role to ensure that we meet the National Electricity Objective, specifically “...*efficient investment in, and efficient operation and use of, electricity services for the long term interests of consumers...*” Increasing the level of demand management would improve:

- **Affordability:** Energy efficiency and demand response will lower the cost of providing effective network services, lower the cost of generation capacity and enable consumers to get more out of each unit of energy that they consume. This will lower consumers’ bills and boost productivity.
- **Security:** Demand response can deliver both short-term capacity and FCAS, typically at much lower costs than supply-side solutions. Demand response is particularly critical to support the integration of intermittent generation, as it allows demand to be rapidly adjusted to variable supply.
- **Sustainability:** Energy efficiency can rapidly and affordably deliver around half the emissions abatement potential in Australia’s energy sector.

However, Australia’s level of energy efficiency, demand response and cogeneration are well below optimal levels, and this has a negative impact on energy affordability, security and prices.

- Demand response currently only provides a few per cent of capacity in the NEM¹, far below the 10 per cent of capacity it delivers in a healthy market. However, the potential for demand response in Australia is significant, with industrial users alone estimated to be able to offer at least 3.1 Gigawatts (GW) of demand response. This is equivalent to 42 per cent of the 7.6 GW these users draw during summer system peaks.²
- Demand response provides around 75 per cent of FCAS in New Zealand, but less than 2 per cent in the NEM. This indicates substantial potential to secure more FCAS from demand-response in the NEM.

¹ It is difficult to precisely determine the quantum of currently available demand-response capacity in Australia as much of its occurs through private contracts between retailers and large energy users.

² ClimateWorks 2014, *Industrial Demand Side Response Potential*.

- Australia's energy productivity³ (a measure of energy efficiency) was 14 per cent below the OECD average in 2012. Energy productivity increased by just 1.48 per cent in 2014-15, well below the 2.26 per cent required to meet the Australian Government's target to increase energy productivity by 40 per cent by 2030.^{4, 5}
- Cogeneration is well below the level deployed in other countries.

Recent increases in network charges, load shedding in South Australia, supply constraints in NSW and price spikes in Queensland could have been significantly mitigated with effective demand management mechanisms. However, major energy market reforms and complementary policies will be required to address the barriers to demand-side activities and unlock their full potential. Reforms will need to include the creation of markets for generation benefits and improvements to NSP regulations and incentives. The creation of an effective Demand Management Incentive Scheme and Allowance Mechanism are key elements of these reforms.

³ GDP per unit of primary energy.

⁴ Australian Alliance to Save Energy 2014, *2XEP – Australia's Energy Productivity Opportunity Framing Paper*.

⁵ COAG Energy Council 2016, *National Energy Productivity Plan Annual Report 2016*.

2. Recommendations from the Energy Efficiency Policy Handbook

In 2016 the Energy Efficiency Council released *the 1st Edition of the Australian Energy Efficiency Policy Handbook* which make several recommendations that are relevant to the AER's review, including:

Improve the economic efficiency of electricity networks

The current regulatory framework for electricity networks has resulted in overinvestment in networks, high returns for NSPs and rapidly rising energy bills. The rules and regulations of the energy market need to ensure that NSPs plan, invest and operate efficiently and are remunerated at an appropriate level.

Ensure that NSPs invest in demand-side measures to reduce expenditure

NSPs should invest in reducing demand when it is cheaper than supply-side expenditure (e.g. network augmentation). The network planning process should require NSPs to report on overall levels of demand-side management. NSPs should be set targets for demand-side investment and the Demand Management Incentive Scheme must be a genuine incentive to reduce demand (e.g. encouraging demand-side works when they can reduce the cost of replacing ageing assets).

Establish independent oversight of NSPs' interactions with consumers and other parties

NSPs are monopolies but individual consumers, generators and demand-side providers are expected to negotiate with NSPs on the costs for connection to the network or payments for projects that reduce the need for network expenditure. Governments should appoint an individual (potentially within an existing market body) to provide active oversight of interactions between NSPs and third parties. This would include gathering and reviewing information on the speed of NSP negotiations on matters such as connection, and the charges or payments resulting from negotiations.

3. Principles for the Scheme and Allowance Mechanism

The National Electricity Objective (NEO) is “to promote efficient investment in, and efficient operation and use of, electricity services for the long term interests of consumers...” Drawing on the NEO, the Council believes that the Australian Energy Regulator (AER) should design and implement a Scheme and Allowance Mechanism that:

- **Ensure the most economically efficient balance of investment in energy supply and demand management**
- **Enable demand management providers to capture multiple value-streams**, including FCAS and generation and emergency capacity. Demand management projects can normally serve multiple purposes, and it is essential to add together these value streams to deploy the most economic level of demand management. This issue was identified in the 2002 COAG Energy Market Review⁶, which states “...there is a relatively low demand-side involvement in the NEM because... the demand-side cannot gain the full value of what it brings to the market”. The way that NSP activities are ring-fenced needs to still ensure that there is an incentive in the system for some party to deliver integrated demand management.
- **Recognise the currently high ‘option value’ of demand management.** There is considerable uncertainty about the future of both load and generation mix in Australia, which creates a significant risk of stranded assets. Demand management projects typically have smaller “minimum efficient scale” and have shorter delivery and payback periods than network infrastructure, which means that, even if a network solution appears to be the most cost effective under a single future scenario, preference should be given to demand management projects that avoids stranded assets under multi-scenario analysis.

This option value can be substantial. In the period 2005 to 2014 there was tens of billions of dollars of expenditure on networks based on projections of rapidly growing peak demand. If demand management approaches had been used more extensively it would have both provided capacity at lower cost and often avoided unnecessary investment.

- **Provide clear, secure and long-term price signals to NSPs.** Incentives based on NSPs’ Regulated Asset Base (RAB) are generally clear, secure and long-term, which means that it is essential that NSPs face similar incentives for demand management, rather than short-term incentives that could change between regulatory periods. Even if the magnitude of incentives for NSPs for augmentation and demand management are similar, if NSPs have reasonable grounds for believing that it will be more complex or uncertain to secure payments for demand-side investments then they will favour supply-side investment.
- **Ideally transition to an overall more efficient set of core signals.** The most cost effective way to ensure that NSPs invest in the most economic balance of supply- and demand-side measures is to ensure that core settings, such as the treatment of the RAB and Regulatory Investment Test for Distribution (RIT-D) are effective. In particular, networks should take on some risk from the stranding of assets that

⁶ COAG Energy Market Review 2002 *Towards a Truly National and Efficient Energy Market*, Canberra.

they build, to encourage them to use demand management when it has significant 'option value'. It will likely take many years (if it occurs at all) to transition regulation to create fully balanced core settings, which means that the Demand Management Incentive Scheme and Allowance Mechanism are essential right now.

- **Support the Demand Management Incentive Scheme and Allowance Mechanism with complementary policies.** The Scheme and Mechanism will not, by themselves, address all the barriers to an optimum level of demand-management in the National Electricity Market. They need to be complemented with a range of policies, including strong oversight of NSP's interactions with other parties to ensure that they are not abusing their monopoly position.
- **Encourage competition** by ensuring that energy users, retailers, aggregators and other parties can develop and sell energy management to NSPs. As noted above, this is particularly critical because other parties may develop demand management programs for other purposes (e.g. emergency capacity) and should then be able to sell it to NSPs. The Council notes that there is some tension between this principle and the principle of providing strong incentives to NSPs, but this tension can be overcome through sensible design.

4. Potential Scheme Design Options

The EEC does not have a firm position on all the design details of the Scheme at this time. However, the EEC does have initial positions on the mechanisms proposed, and we look forward to engaging with the AER as it finalises its design of the Scheme. The EEC's comments on the current proposals for the Scheme design are:

1. Mechanisms to target potential disincentives

The EEC strongly supports the AER exploring a range of mechanisms to target potential disincentives.

There remain financial incentives for NSPs to overinvest in network build. These incentives are particularly strong for NSPs that do not have strong constraints on capital expenditure or who have actual costs of capital well below the AER's regulated cost of capital. As noted above, these fundamental incentives would ideally be addressed through substantial reforms, including the treatment of the RAB, calculation of the Weighted Average Cost of Capital (WACC) and differences in the way that Capital Expenditure (capex) and Operational Expenditure (opex) are treated.

However, completion of all of these fundamental reforms will take many years and the failure to implement a Scheme will result in further overinvestment in supply-side solutions. The AER should consider a number of features in designing the Scheme, including but not limited to:

- Providing incentives to put capex and opex on a more equal footing.
- Limiting penalties associated with demand management projects under the Service Target Performance Incentive Scheme (STIPS)

It is also crucial that the AER does not create new distortions in the way that it assesses demand management expenditure. For example, the AER currently deems network capital expenditure to be prudent if it is undertaken with a reasonable expectation that it will be required, even if it ultimately is not fully utilised for many years. Given this, expenditure on demand management should be recoverable if it is undertaken with a reasonable expectation that it will be required. The key test here then is not whether the DM *is used or dispatched*, but whether it is *available* to provide capacity in plausible scenarios.

2. Net market benefit sharing

The EEC strongly supports the AER exploring a net market benefit sharing scheme.

As noted above, there will be sub-optimal deployment of demand management unless one or more entities in the energy market can capture the multiple value-streams from demand management, including FCAS, generation capacity and emergency capacity. In the long term, there would ideally be multiple markets for these multiple value streams that allow a retailer or demand-side aggregator to tie together FCAS, emergency capacity and networks benefits into one package. In a mature market this could create a value stream for NSPs or substantially reduce the cost for NSPs to obtain demand management, leading to balanced incentives for supply-side and demand-side investment.

However, it will take many years to develop mature markets for all these services, and this will not occur unless NSPs are actively seeking out demand management projects. Therefore, the EEC recommends that the AER should immediately develop a mechanism that gives NSPs a share of the net market benefits of demand management projects.

The scale of this incentive could be reduced over time for new projects, but not existing projects, due to the importance of stable NSP incentives. The reduction in the incentive should be tied to the emergence of mature markets for other demand management value streams (e.g. FCAS) that encourage NSPs to favour demand management projects where they have multiple market benefits.

3. Mechanisms to promote competition

The EEC strongly supports developing mechanisms to promote competition. Multiple mechanisms are required to achieve this, including:

- Requiring (not incentivising) NSPs to provide key information in a timely manner to the market about upcoming network constraints.
- Requiring NSPs to go to market to seek providers for non-network services, such as through open auctions.
- Appointing an individual (potentially within an existing market body) to provide active oversight of interactions between NSPs and third parties. This would include gathering and reviewing information on the speed of NSP negotiations on matters such as connection, and the charges or payments resulting from negotiations.

4. Targets for demand management deployment

The EEC strongly supports the AER both setting NSPs targets to deploy demand management and requiring NSPs to report demand management metrics.

There are multiple barriers to NSPs investing in the optimum level of demand management, including incentives, skill gaps and NSPs overestimating the risk of demand management projects. These factors have been in play for well over a decade, and many NSPs have developed organizational cultures that will favour supply-side solutions, even if incentives were perfectly rebalanced.

While there may be a good case for an NSP to invest in a supply-side investment over a demand-side investment in a specific situation, if the NSP regularly favours supply-side investments it will lead to sub-optimal outcomes. This means that there is a strong case for overall metrics of demand-side investment by NSPs. Therefore, the EEC's Policy Handbook recommends that "NSPs [should] report on overall levels of demand-side management" and "NSPs should be set targets for demand-side investment"⁷.

It is necessary to use both targets and reporting. NSPs should be set targets to ensure that they undertake a minimum level of demand management. NSPs should also be required to report on a range of metrics, in order to build the understanding of demand management among NSPs, regulators and the broader industry.

⁷ Energy Efficiency Council 2016, *Australian Energy Efficiency Policy Handbook* p17

Multiple metrics should be used for both reporting and targets. Potential metrics for targets and reporting could include:

- Annual investment in demand management;
- Annual outcomes of demand management (e.g. kW_{peak} reduction); and
- Annual value of supply-side augmentation avoided or deferred through demand management, including upstream (net market) benefits.

5. Potential Allowance Mechanism

The Council does not have a firm position on all the details of the design of the Allowance Mechanism at this time. However, we do have initial positions and look forward to engaging with the AER as it finalises its design of the Allowance Mechanism.

- The current allowance mechanism is far too small to enable the types of transformative projects that are required during this period of transition in Australia's electricity market.
- While there are some merits in providing each NSP some allowance in order to ensure that they gain experience in demand management, pooling the available funds nationally and allowing organisations to compete for a much larger pool of funds will both allow for larger projects and set up a competitive environment.
- Other organisations, not just NSPs, should be allowed to bid for funds. These third parties should be allowed to put in proposals in conjunction with an NSP or put in proposals on their own and then seek a NSP to partner with after they have been awarded funds.

6. Questions

1. Do stakeholders support our interpretation and proposed implementation of the new rules? If you have alternative views, please share these and provide supporting evidence.

No comment.

2. Do you agree with our view on the main demand management incentives (or disincentives) provided under the regulatory framework and the potential issues associated with these incentives? Please provide reasons to support any alternative views you may have.

See sections 2 and 3 of this submission.

3. Do you see value in exploring the net-market benefit sharing mechanism further, despite the difficulties associated with measuring net-market benefits? If yes, what detail of guidance should we provide on calculating market-wide costs and benefits? Should we (and if so, how should we) establish a method for valuing smaller demand management projects in a way that reduces the administrative burden of applying the Scheme to these projects?

The EEC supports the AER exploring a net market benefit sharing mechanism.

4. Since the RIT-D already requires distributors to select the option with the highest total market benefit, should we (and if so, how should we) treat RIT-D projects differently under this type of Scheme (that is, under a net market benefit sharing mechanism)?

While the RIT-D already requires distributors to select the option with the highest total market benefit, information asymmetries mean that, if NSPs are not incentivized (or are strongly disincentivised) to select the demand management options with higher market benefits, they may not provide sound information on market benefits.

5. How might we best combine the mechanisms discussed in section 6 into an option that achieves the Scheme's objective? If you prefer a mechanism that we did not discuss in in section 6, please provide details on this mechanism.

No comment at this time.

6. If you have views against applying any of the particular mechanisms discussed in section 6, please provide reasons to support this view.

No comment at this time

7. How we might best give effect to or enhance the information and reporting requirements discussed in section 6.5?

The EEC does not have full comments on this at this time. However, we do note two key points:

- The reporting obligations must not be so onerous and the burden of proof so high that they create a disincentive for NSPs to pursue demand-management
- There is extensive global experience in Measurement, Verification and Evaluation

(MV&E) in jurisdictions such as California. The EEC runs Measurement and Verification training and certification in conjunction with global bodies according to the global standard (the International Performance Measurement and Verification Protocol) and has links to a wide range of MV&E experts. The EEC would be happy to assist the AER on this matter.

8. Which of the options discussed above in section 7 would best achieve the Allowance Mechanism's objective? Please provide reasons supporting your view. If you prefer an Allowance Mechanism design that we did not discuss as an option in section 7, please provide details on this option.

See section 5 of this submission

9. If you have views against applying any of the particular mechanisms discussed in section 7, please provide reasons to support this view.

No comment at this time

10. How we might best give effect to or enhance the information and reporting requirements discussed in section 7.5?

No comment at this time