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Total Environment Centre

Submission to the AEMC

Review of Demand-side Participation in the NEM, Stage III 'Power of Choice' Market Review

Response to Issues Paper

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1. Introduction

Total Environment Centre welcomes the opportunity to provide comment as part of the *Power of Choice — Stage 3 DSP Review*. Total Environment Centre has advocated for optimal demand-side participation in the National Electricity market since 2004, and, as we stated in our presentation at the first meeting of the Stakeholder Reference Group for this review, we are pleased that DSP is finally supported across stakeholders and its benefits are universally recognized. Total Environment Centre commends the AEMC in the pursuit of Pareto optimality for demand and supply in the NEM, as achieving optimal demand-side participation is the core focus of our NEM advocacy. We are also pleased that the AEMC is will go beyond purely an examination of the barriers to DSP in the NEM and will identify policy options for government deliberation. We look forward to advising the AEMC throughout the review process on this timely and important issue.

2. Benefits of DSP

Total Environment Centre campaigns for optimal demand side participation in the National Energy Market because it is a key factor in mitigating greenhouse gas emissions, and offers multiple social and economic benefits.

1. Energy efficiency and specific demand-side initiatives like air-conditioning cycling, power factor correction, distributed generation, and time of use and demand-based tariffs, can lower the amount of overall energy used, which in turn;
    i. Lowers the amount of fossil fuels burned, which leads to lower emissions, mitigating climate change;
    ii. Saves consumers money through
        i. Avoided infrastructure augmentation;
        ii. Deferred infrastructure augmentation; and
        iii. Lowered consumption of electricity.
    iii. Lowers the demand for electricity networks which lowers the amount of energy lost through transmission loss; and
    iv. Creates a lower demand for energy, which itself will lead to lower prices, *ceteris paribus*.
2. DSP, in general:
    i. Increases the reliability and security of supply of electricity;
    ii. Allows demand to be responsive to fluctuating supply, which facilitates intermittent renewable generation, which reduces GHG emissions;
    iii. Allows the avoidance and deferral of infrastructure augmentation;
    iv. Lowers the risk associated with building too little infrastructure to meet demand;
    v. Increases the time available to carry out infrastructure augmentations; and
    vi. Reduces the incidence of peak price events.

3. Economic costs associated with the transition to a low-emission electricity supply — such as a price on carbon — will have less impact on consumers with optimal implementation of DSP because overall costs will be minimized[1]. This will result in greater emissions reductions, as it will mean that there is less opposition to the implementation of low-emissions technologies on grounds of cost.
4. By delivering all of the above benefits, DSP achieves the National Electricity Objective, as well as the broader objectives of sustainability, thus working in the long-term interests of consumers.

Despite these benefits, demand-side participation is sub-optimal in the current National Electricity Market. This is primarily because the National Electricity Market framework is overwhelmingly biased towards the supply-side.

3. Supply-side Bias and Other Market Failures

20. Are retailer and distributor business models supportive of DSP?

21. What incentives are likely to encourage research and development of other parties to promote efficient DSP?

22. Are there any regulatory, cultural or organisational barriers that affect take up of DSP opportunities?

33. To what extent do parties have appropriate incentives to put in place the systems, technologies, information flows etc. that facilitate efficient DSP?

34. Are there aspects of the NEL or the Rules which prevent parties taking actions that would otherwise allow for more efficient levels of DSP?

35. Are there market failures which mean regulation is needed in some areas to ensure appropriate market conditions are in place?

Total Environment Centre rejects the position taken by the MCE and the AEMC that the NER "does not materially bias against the use of DSP". While the Rules do not explicitly bias against the use of DSP, there are multiple elements of the current regulatory framework that significantly favour supply-side network solutions over demand-side non-network solutions. These promote investment in centralised generation and network infrastructure and present significant barriers to the take-up of cost effective demand-side solutions. As a result, the significant potential for cost-effective demand management has effectively gone unnoticed and unacted.

This bias can be summarised as essentially thus: NSPs derive their profit from investment in and returns from capex. As such, they have an incentive to maximise their capital expenditure and overinvest in supply-side solutions (what is known as 'gold plating the

[1] As explained above, DSP achieves greater economic efficiency by avoiding unnecessary infrastructure augmentation, allowing deferral of some infrastructure projects, lowering demand for electricity, ensuring the least-cost solution is implemented to meet demand, and helping consumers lower their electricity consumption.

network'). The higher the level of capex and the higher the rate of return determined, the higher the incentive for the NSP to invest in network solutions. Ross Garnaut and other experts have asserted that the current WACC has been set too high, which further contributes to this incentive (see 'Cost of Capital Allowances' below).

Conversely, there is far less incentive to invest in demand-side projects because they fall under opex, which NSPs cannot profit from (or delivers them only very limited profit). Moreover, because investment in capex provides a return and DSP does not, NSPs essentially forego profit when they invest in DSP in the current market model.

This bias is the primary reason for sub-optimal demand-side participation in the NEM. Total Environment Centre cannot stress highly enough that this is the fundamental barrier preventing optimal DSP. This problem must be rectified if Pareto optimality is to be achieved.

Total Environment Centre acknowledges that some minor changes have been introduced into the regulatory framework in which require network entities to explore whether non-network alternatives may be a more efficient option for delivering the required electricity services. However, these changes have had little impact, as minimal demand side opportunities have been pursued under their auspices.

3.1 Regulation of NSPs and Revenue Determinations

There are multiple elements of the current market framework which prevent the AER from acting against this bias. In its *Final Report on Changes in Regulated Electricity Retail Prices from 1 July 2011*, NSW IPART said it was "concerned that the cumulative effect of the economic regulation aspects of the NER skews the AER's decisions towards higher prices and potentially inefficient outcomes."

IPART said that in its view, the current regulatory framework "may constrain the AER's ability to apply what it considers to be the best estimate of the efficient operating and capital costs". This is not merely the view of IPART, but the reality of economic regulation of the NEM.

The AER must include all capex incurred in the asset base for a NSP, and NSPs are able to overspend their allowed capex and carry this over into the next determination period. There is no ex-post review and therefore no oversight to ensure that NSP has pursued the most economically efficient means of supplying electricity services to its customers. Capex projects which are contingent at the time of a reset can be added to the allowed revenue post-reset, even if the ex-ante capex allowance has not been used. The rules only require formal demonstration for a small component of an NSP's capex program due to the high threshold for triggering the Transmission and Distribution Regulatory Impact Tests.

The level of scrutiny that network proposals face can be decreased by NSPs through the submission of increasingly lengthy and complex engineering reports. On the other hand, the AER and state regulators such as IPART face very tight timeframes to respond. The length of Revenue Proposals for NSPs on average is increasing exponentially. As such, the discretion

that the AER and state regulators have to consider the economic efficiency of NSP investments is far more limited.

The AER is unable to use their own 'best-practice' benchmarks for economic modelling during revenue determinations (except in Victoria). Instead, it must rely on the modelling provided by NSPs in their proposals, which, as described by AER Chairman, Andrew Reeves, "are at the top of, or beyond, what could be considered a range that 'reasonably reflects' the required expenditure".

Furthermore, while their regulated revenues are proportional to the value of their asset base, incentivising network investment, it is NSPs that are responsible for assessing the merits of non-network solutions. This provides motivation both to invest in network solutions and to give insufficient consideration or weight to demand side solutions.

3.2 Cost of capital allowances

The cost of capital allowance is calculated using a rules-based formula which accounts for the cost of equity and debt, and provides for income tax. The regulator is responsible for setting the rate at a level reflective of the appropriate risk exposure of the entity. However, the regulator's cost of capital allowances in recent years have been flawed as they have not taken into account that network investment has been recouped with a very high level of certainty.

Network businesses are attractive to investors seeking very low-risk investments with stable returns. However, the regulator approves cost of capital allowances using the cost of general corporate debt. This implies that regulated networks are as risky as the average investment in the Australian stock market. In practical terms, Australia's network businesses borrow much more cheaply than the rate assumed by their regulatory approval. This is particularly pronounced in the case of State Owned entities, which are able to obtain finance at an even lower rate. Network entities profit substantially from the difference between the assumed cost of capital and the true cost.

3.3 State Government Ownership

There is a confluence of incentives leading to over investment and 'gold plating' by State Owned network businesses. In addition to their lower borrowing costs, discussed above, these entities also retain the tax allowance provided for in the cost of capital allowance. In addition, political concerns about the reliability of state owned networks overwhelm incentives to minimise costs. It has been suggested that this is part of the reason why government-owned entities invest more in network infrastructure than privately owned networks, and consistently over-spend their regulated allowance, evidenced by the difference between Victoria's electricity costs and those in NSW and Queensland.

3.4 Regulatory Appeals Process

The process for appealing the regulator's decision regarding revenue allowances is notoriously generous. A network business can appeal on any matter they are unhappy with.

The appeal is free and has no risk as the appeal cannot result in an outcome less favourable to the business than the original determination. And based on past determinations, if the AER blocks unreasonable revenue proposals there is about a 60% likelihood that they will be approved if they are referred to the Competition Tribunal.

Unsurprisingly, almost every regulatory decision is appealed. The regulator's cost of capital allowances are almost always in contention and are usually changed in favour of the network entity. For example, in one recent determination in NSW, the regulator's recommended rate of 6.35% was increased through the appeal process to 7.5%; a decision worth approximately $2 billion.

3.5 Retail Price Caps

Retail price caps were originally intended to be a transitional provision during the development phase of the NEM. The decision to remove them, however, lies with State and Territory Governments. There has so far been reluctance to allow prices to be determined by the market, with only Victoria having removed price caps to date. The recent and projected price rises (especially outside of Victoria) contests the notion that price regulation provides greater control over prices in the public interest.

3.6 Other market failures

Besides supply side bias, there are also other market failures in the NEM which prevent optimal DSP. For example:

- While the rules require that networks pass on the benefits of avoided TUOS charges to larger embedded generators, no such requirement exists in relation to smaller distributed generators or to consumers engaging in DSP.
- The rules do not allow demand -side response to directly participate in the wholesale market.
- Most of the benefits provided by demand management, as opposed to the use of supply-side solutions, are excluded when comparing the costs of the two approaches. These benefits include avoided or deferred infrastructure costs, avoided carbon emissions and improved system stability.

What remains to be discussed is whether the framework that has been adopted by the AEMC in the Issues Paper is likely to address the above barriers.

4. Purpose of Review and Analytical Framework

1. Chapter 3 outlines our approach to identifying "market and regulatory arrangements that enable the participation of both supply and demand side options in achieving an economically efficient demand/supply balance in the electricity market." Do you agree with our approach?

> "The MCE has directed the AEMC to investigate and identify the market and regulatory arrangements needed across the electricity supply chain to facilitate the efficient investment in, operation and use of DSP in the NEM, consistent with the National Electricity Objective."

As stated in the *Strategic Priorities for Energy Market Development Discussion Paper*, the AEMC performs its duties "within the context of an objective that can be broadly summarised as promoting the economic efficiency of energy markets over the long term". In other words, the AEMC works under the ideological framework of economic rationalism.

This economic rationalist paradigm is the foundation for much of the argument in the *Power of Choice — DSP Stage III Issues Paper*: The aim of the review is "to promote use of DSP up to the point at which the value of reducing demand by an extra kWh is equal to the cost of supplying an extra kWh of electricity", or in other words, when demand and supply are Pareto optimal. It sets up an economic framework based on the elements of a perfect market economy which, assuming consumers always make rational decisions, will lead to economically efficient outcomes. It defines demand-side participation as "the ability of consumers to make informed decisions about the quantity and timing of their electricity use, which reflects the value that they obtain from using electricity services." This introduces elements the ideal market paradigm — perfect information and strong-form rationality — to the definition of DSP.

Ideological frameworks like economic rationalism are useful tools for policy creation. They can simplify complex problems, provide an ideal model for how society should work, and identify the most appropriate methods to achieve the ideal arrangement.

Ideological frameworks work because they simplify complex problems. During this process of simplification, some important elements of a problem are left out, and less important ones emphasised. Problems can arise when an ideological framework is not recognized as a simplified model of reality, but unconsciously taken to represent reality in its entirety. This is called model blindness.

All institutions and individuals suffer from model blindness to a varying extent. Based upon the approach taken in the Issues Paper and in their work in the NEM more generally, the AEMC suffers from model blindness.

It is difficult to eliminate this model blindness. For instance, in the economic rationalist model it is notoriously difficult to factor in crucial goods which are not commonly monetized and traded in a market — in other words, intangible goods. These can include such things as a person's health, the value of a strong community, or the biota of the planet. In order to incorporate them into an economic model an arbitrary price is given to these 'goods and services'. Economists need to be careful about not setting too high a price for these 'goods and services' because it may mean that businesses would operate at less than

optimum. If the price for them is set too low, businesses could potentially justify massive social and environmental injustices so long as it led to profit.

A solution to model blindness is to use multiple models to analyse a particular problem, increasing the likelihood that all the elements of the problem are factored in and robust policy will result. Total Environment Centre has previously advocated for the inclusion of social and environmental objectives in the NEO, similar to that done by other energy markets such as in California and the United Kingdom. This would allow the AEMC to use multiple models to assess policy — economic, social, and environmental — which would compensate for the limitations of each individual ideological framework.

Unfortunately, it is likely that the AEMC will consider the revaluation of the National Electricity Objective to be outside of the scope of this review and may believe it to be the responsibility of other government departments or political actors.

While we continue to advocate for such a change, we urge the AEMC to take into account the limitations of the economic rationalist framework and work against instances of model blindness. The adoption of an economic rationalist framework does not free policy designers and decision makers from the responsibility of taking the broader context of policy into account. As stated in the 1993 Hillmer inquiry:

> "Competition policy is not about the pursuit of competition per se. Rather it seeks to facilitate effective competition to promote efficiency and economic growth while accommodating situations where competition does not achieve efficiency or conflicts with other social objectives. These accommodations are reflected in the content and breadth of application of pro-competitive policies, as well as the sanctioning of anti-competitive arrangements on public benefit grounds."[2]

As the peak bureaucratic body advising government on National Energy Market policy, the AEMC must ensure its policy recommendations are robust. It must assist government decision-makers to recognize the limits of the model and where competition policy conflicts with other broader government objectives. Explicit identification and minimization of model blindness will therefore be necessary if DSP policy is to achieve the National Electricity Objective as well as satisfy wider social and environmental objectives.

5. Instances of model blindness

The Issues Paper contains multiple instances of model blindness. Many assumptions have been made which indicate an unconscious acceptance of economic rationalist theory as reality. Other assumptions have also been made based on commonly held beliefs of NEM stakeholders which require further consideration before they can be used as a foundation for robust policy.

[2] Commonwealth of Australia (1993) *National Competition Policy Review*, p. xvi. Available at: http://ncp.ncc.gov.au/docs/Hilmer-001.pdf

We detail some of these instances below in order that the AEMC can factor these into its investigation and identification of market and regulatory arrangements to stimulate optimal DSP in the NEM.

5.1 Diminishing Returns on Choice

The AEMC has signalled that in order to achieve the MCE's stated objective, they intend to design market and regulatory frameworks which provide greater choice, information, systems and technology to consumers.

> "We consider that the objective of this review is to identify opportunities for consumers to make informed choices about the way they use electricity, and provide incentives for network operators, retailers and other parties to invest efficiently so that there is increased confidence that demand and supply side options are given equal weight in satisfying the community´s demand for energy services."
>
> "In order to realise the benefits that cost effective DSP may deliver, it will be necessary to provide consumers with greater opportunities to make informed choices about the way they use electricity"
>
> "The key focus of this first stage of consultation is on identifying the range of DSP options that are or may be available to consumers, and the market conditions that need to be in place to facilitate and promote uptake of those options… Market conditions are features (e.g. information, systems, pricing structures, and technology) that need to be present in the electricity market to enable all parties (that is, consumers, retailers, aggregators, network operators, generators and other parties) in that market to make and implement informed decisions, while recognising that it is the consumer who makes the final consumption decision."

The Issues Paper devotes much of the paper to highlighting the beneficial nature of choice and asks for input from stakeholders as to how it can be increased. The very title of the review '*The Power of Choice*' reinforces this idea that choice is an inherent good and highlights the AEMC's enthusiasm for undertaking this task.

But far less focus has been given to the potential risks of greater choice and information.

Total Environment Centre agrees that increased choice and information may be necessary to achieve optimal DSP and benefit consumers. It is likely that the most optimal market and regulatory frameworks will feature higher levels of choice and information than those present in the current market structure.

However, choice and information are not inherently beneficial: they both face diminishing returns because of the costs of transaction. Much academic study in the fields of psychology has revealed that too much choice and information is as bad as too little. Either extreme can lead to sub-optimal economic, social and environmental outcomes. Choice and information provide the greatest benefit at some point along a spectrum of possibility and in different positions for different consumers.

Given choice and provision of information face diminishing returns because of transaction costs, a key question for this review is '**how much choice and information is needed in order to achieve optimal DSP consistent with the long term interests of consumers'?** Or alternatively, '**how can transactional costs be minimized'**?

Total Environment Centre commends the AEMC for taking transaction costs into account in the methodology and framework for this review and for providing acknowledgement of them throughout the Issues Paper.

But we are concerned that, despite this, transaction costs may not be properly factored into the market and regulatory arrangements identified by the AEMC in this review process.

Transaction costs are not properly taken into account in many markets in Australia. The telecommunications market, for instance, underwent significant privatization during the 1990s in an effort to increase economic efficiency of the sector, offering consumers greatly increased choice of products and providers. The Australian Communications Consumer Action Network (ACCAN) explains that even in this market where multiple vendors offer an extremely high level of product choice, the long-term interests of consumers are failing to be met:

> "The term 'confusopoly' is often used to describe the telecommunications market. Satirist Scott Adams created the term to describe a group of companies with similar products who intentionally confuse customers instead of competing on price.
>
> The confusopoly is commonly associated with deregulated service and network industries that offer unnecessarily complex products and pricing structures. ACCAN is frustrated with telecommunications providers who offer products that are extremely difficult, sometimes impossible, to understand. We have documented marketing material that is nearly impossible to decipher the actual deal and/or promises a deal that is scam-like. Product complexity has been associated with weak competition, poor consumer information and the expanded use of agents. Product complexity can also help explain why consent issues remain a persistent feature of the industry. A 2009 study by ACCAN, for example, identified significant concerns regarding consent among indigenous consumers, young people and culturally and linguistically diverse consumers.
>
> Mobile phone plans are notoriously difficult to compare, making good decision-making impossible and contributing to consumer dissatisfaction. This is a feature of the market that has, in our view, contributed to poor consumer outcomes. For example, when customers believe their 'capped' plan is capped, they are understandably frustrated with their experience of bill-shock and the inability of customer service representatives to do much more than offer to put them on a high 'capped' plan.
>
> The problem of asymmetric information is not unique to the telecommunications industry. We note, by way of example, that the Consumers Utility Advocacy Centre (CUAC) has recently commenced a

> research project exploring complex products and consumer decision-making in the energy industry."[3]

In 2008, The Australia Institute published the report *Choice Overload: Australians Coping with Financial Decisions*[4]. It examined how consumers made financial decisions in the context of greater choice and liberalised markets.

> "Extensive choice is usually regarded as a positive thing for consumers, and it often is. Yet there are circumstances where more choice is actually detrimental to consumer welfare. In the realm of personal finances, people are often presented with choices that they would prefer not to make, or prefer someone else to make on their behalf."
>
> "The standard policy response to the shortfall in financial literacy, both in Australia and overseas, has been to address the 'information asymmetry' problem by educating consumers so that they can make more informed financial decisions. Such an approach places the onus of responsibility for dealing with a changing financial environment squarely on the consumer, and neglects the fundamental responsibilities that governments and financial institutions have to present consumers with choices that they understand and value."
>
> "Policy-makers should recognise that extensive choice is not always helpful, and that its benefits flow in different ways to different groups. For some people greater choice can actually undermine wellbeing, by instigating confusion and anxiety and undermining confidence. Governments should therefore try to design policies that allow people to choose not to choose, where possible. For example, research has shown that 'opt-out' provisions are much more successful that 'opt-in' schemes in generating consumer participation in savings schemes and other important initiatives. This principle should inform government policy in consumer finances, and also in other areas of activity where greater choice can be shown to have detrimental consequences."

Total Environment Centre fears that unless these transactional costs are taken into account, a similar situation may arise in the NEM. Consumers will be offered greatly increased choice in a very complex market for a complex and often intangible service. We urge the AEMC to investigate other regulated markets and learn from these mistakes.

Moreover, we also encourage the AEMC to investigate how optimal DSP has been pursued in other national and international energy markets, as they often contain novel policies which could be readily adapted to the NEM.

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[3] ACCAN (2010) *Reconnecting the Customer: Submission by the Australian Communications Consumer Action Network to the Australian Communications and Media Authority*, p. 14. Available at: http://accan.org.au/index.php?option=com_content&view=article&id=112:reconnecting-the-customer&catid=83:your-rights&Itemid=182

[4] Fear, Josh (2008) *Choice Overload: Australians coping with financial decisions*, pp. v, vii and 50. The Australia Institute: Canberra. Available at: https://www.tai.org.au/documents/dp_fulltext/DP99.pdf

One such program is the Californian electricity market's 20/20 Energy Conservation Program. This program offered an additional 20% discount on electricity bills for California electricity consumers that managed to reduce their electricity use by 20% over the 4 summer months. The participation rates for this program were significant: 1/3 of all consumers (both households and businesses) achieved reductions of 20% or more. Another 1/3 also achieved reductions of less than 20%.

Under the strict boundaries of a perfectly efficient market, the Californian 20/20 program may be considered as economically inefficient — customers may not be aware of the *exact* price of electricity for any specific time and it may doubly reward people for whom it would be economically efficient to reduce electricity usage even if the program was not present. But this kind of inefficiency is far better than the inefficiency present in the Australian telecommunications market where businesses are able to game the system and introduce a level of complexity that diminishes the quality of life of consumers.

The real benefits of the 20/20 program are evident in the fact that even after the program was discontinued, electricity consumers continued to reduce their electricity consumption over the summer months for years afterwards, in much the same way that Australian consumers continue to use less water even after restrictions are lifted. This highlights the fact that consumers do not necessarily require exposure to the exact price of electricity for optimal DSP to be achieved, and may not need a constant saturation of information to provide benefits for both them and the NEM as a whole.

It should also be pointed out that a similar pilot program was undertaken by the NSW Office of Environment and Heritage in Western Sydney and similar reductions and lasting results were achieved.

5.2 Alternative indications of cost

> *5. What are considered the drivers behind why consumers may choose to change their electricity consumption patterns? Please provide examples or evidence where appropriate.*

We are pleased that the AEMC has not restricted itself to considering purely financial drivers for electricity consumers to invest in more demand-side projects. However, we believe this idea can be taken further than indicated in the Issues Paper.

Environmentally conscious consumers are choosing to undertake demand-side initiatives and switch to sources of renewable generation in the current market structure, despite the fact that this often comes at an increased financial cost.

OPower in the United States achieved the greatest reductions in electricity use when they produced energy reports that compared people's electricity use to their neighbours or to competing businesses.

We encourage the AEMC to consider these other less common types of driver in their consideration of market and regulatory frameworks that promote optimal DSP.

5.3 Consumer segmentation

There are different types of electricity consumer in the NEM, each facing differing levels of transaction cost.

In general, residential and small businesses face greater transactional costs than medium and large enterprise because they often have less resources (time, expertise, and, in some cases, money) to spend on identifying and selecting the most economically efficient electricity services for their needs. There are likely to be some consumers who would be thrilled to be exposed to 5 minute interval pricing and will immerse themselves in all the information and gadgets available so they can vary their consumption patterns with the highest level of control and accuracy. But for the majority of residential and small business consumers, this will simply be more hassle in their already stressful lives. In order to achieve Pareto optimality, the market may therefore require greater intervention from government in the form of increased regulation or assistance so that this class of consumer can make more economically efficient choices.

Conversely, large and medium companies may greatly benefit from increased choice. They can employ experts who will identify the most efficient use of their resources and select the most appropriate energy services for their needs. They may not only be able to withstand exposure to the spot price for electricity but adjust their consumption in a manner which will allow them to profit. It is inefficient for the government to spend resources on providing greater information and protection to these companies because they already have resources to deal with the problem.

Total Environment Centre therefore recommends that the AEMC make a distinction between these different types of consumer in order to provide protection in cases of high transactional cost.

5.4 Market Solutions

The AEMC has indicated that they will "allow third parties to assist consumers make optimal decisions under innovative business models" in the market and regulatory frameworks that they will identify in this review.

Presumably, these third parties are commercial entities rather than government bodies given they are operating under 'innovative *business* models'. Economic rationalist dogma commonly asserts that the market is always able to make better decisions (or allocate resources more efficiently) than governments. Based on evidence from the current structure of the NEM and other regulated markets, this is not necessarily the case. Businesses do not help consumers make optimal decisions without intervention from government.

Efficient markets rely on consumers having a high level of information so that they can effectively 'police' bad business practices. When consumers rely on a firm to select the most optimal choice for them, they lack the very information required in order to scrutinize the decision of that firm. This information asymmetry combined with a firm's incentive to profit means that these firms may game the system to their own advantage.

As discussed earlier, the superannuation market suffers from this information asymmetry and the federal government had to step in to provide automatic rolling of multiple superannuation accounts.

Importantly, this information asymmetry already exists in the current NEM framework. It is evident in the recent case where the ACCC has alleged Energy Watch passed on false or misleading information in comparing energy rates. NSW IPART and QCA have had to introduce government run price comparators so they can assist consumers to make optimal decisions in the current market. Given government intervention is already required in the current market, what makes the AEMC confident that it will not happen in the case of DSP?

Allowing an unconstrained market to decide what is best for consumers is usually detrimental to the long-term interests of consumers, contrary to economic rationalist dogma, and the common belief of most private industry, politicians and public servants. What it does do, however, is allow both the AEMC and government decision-makers to defer responsibility and power to market entities which, unlike government, have strong incentive to increase their own profits and little obligation to benefit society. The AEMC needs to ensure that the long term interests of consumers are being protected in future regulatory and market arrangements by ensuring that the third parties entrusted with making decisions on behalf of consumers are not able to exploit these information asymmetries.

5.5 Who implements DSP?

The AEMC has indicated that all types of firms currently involved in the NEM should be given the opportunity to implement DSP in an optimal market arrangement.

> "While consumer participation will be important to achieve efficient DSP outcomes in the market, other parties will need to have a strong interest in capturing the value of flexible demand and have a key role to play in sharing that value with consumers. For example, retailers may consider DSP as an alternative means of hedging wholesale electricity market spot price volatility (i.e. contracting with consumers to reduce load when prices are high). Network businesses may contract with a DSP provider as an alternative to network investment. DSP may also represent a valuable service to the system by enhancing the range of options available (e.g. as a means of avoiding involuntary load shedding) which in turn is likely to reduce costs."

It is not clear that this concept has been scrutinized enough to be considered fit enough to form the basis of energy market policy. This assumption appears to be based on the idea that if more firms result in more competition, and more competition leads to greater economic efficiency, all firms in the NEM should be allowed to participate in implementing demand-side projects. It may also derive from the fact that current market participants believe that their companies and the market as a whole is operating at maximal efficiency and therefore they are best suited to carry out DSP. If current market participants are seeking to maximise profit, they would also likely want to maximise their market power in future market arrangements.

But the current structure of the NEM means that not all firms are best set up to implement demand-side projects efficiently. While NSPs are more removed from customers than retailers, they are also responsible for making supply-side investment decisions. Currently, NSPs have more incentive to invest in supply-side projects than demand-side projects, so it is not entirely clear why network businesses would contract with a DSP provider as an alternative to network investment, as suggested in the Issues Paper. They are monopoly companies with privileged information on network infrastructure. They may be able to use this information and their existing market position to game the system, keeping out other market participants and implementing less economically efficient projects which serve to increase their profit.

If greater competition leads to greater economic efficiency in an ideal market model, why not open up DSP to *all firms in all sectors of the economy*? Telecommunications companies could package phone, internet, and demand-side to their customers. Property developers could profit from building out demand-side in their projects. Insurance companies could sell and install energy efficient products and renewable distributed generation to profit from DSP as well as offset the risk of climate change in their other portfolios.

However, the transaction costs implied in this market configuration would have to be factored in, as the presence of many demand-side providers may not necessarily lead to economically efficient outcomes if consumers are solely responsible for determining the least-cost solution. It is also presumed that regulation of this kind of market configuration would require significant resources if it is to function efficiently and without negative impacts on consumers.

The most efficient market configuration could be for all existing NEM participants to remain siloed in their current roles, maximising their efficiency as a TNSP, for instance, and then competing against a new type of market entity which is solely responsible for the implementation of DSP to meet demand. It could more efficient to silo different types of demand-side providers to specific types of demand-side projects, with energy efficiency, smart grid technologies, and demand response all being undertaken by different entities which can only provide that type of product or service.

Without conscious and explicit consideration of this concept, we cannot truly determine whether any of these situations might be suitable or identify other more efficient options. As such, it is wrong to assume that allowing all existing firms in the NEM to provide DSP is the most efficient market and regulatory arrangement.

If the AEMC is to identify the market and regulatory arrangements needed across the electricity supply chain to facilitate the efficient investment in, operation and use of DSP in the NEM, it needs to investigate and identify the what configuration of actors is most appropriate to do so.

5.6 Demand Forecasts

The first statement that the AEMC makes in the Issues Paper is:

> "Electricity demand — and peak demand in particular — is growing. Increased peak demand *will require* significant new investment in generation and network capacity, which will cause increases in costs for electricity services."[5]

While it is not specifically a symptom of economic rationalist model blindness, this statement runs contrary to the AEMC's policy on neutrality and contradicts recent demand trends and forecasts, potentially leading to problems in policy implementation.

By stating that peak demand is increasing at an unprecedented rate and that "increased peak demand will require significant new investment in generation and network capacity", the AEMC is providing a signal to market participants to undertake investment in supply-side. These statements neither promote the idea that the market is subject to change, nor the idea that the NEM is supposed to be a neutral market where demand-side and supply-side solutions should be able to contest each other purely on their economic merits.

Similar statements were made by the AEMC in the *Strategic Priorities for Energy Market Development Discussion Paper*, such as:

> "Our first priority recognises the need for unprecedented investment in generation capacity over the next decade to maintain reliability and security of supply, to meet rising peak demand, to respond efficiently to government climate change policies and enhance competition."
>
> "This growth in peak demand will feed through into the need for more investment in generation and expanded network capacity…"

The AEMC should stop this rhetoric. Even if it is concerned that demand is rising at unprecedented levels, it is not its place to make these kinds of statements. It should have confidence that there are already enough (if not too many) market signals for participants to invest in appropriate levels of network infrastructure to meet future levels of demand.

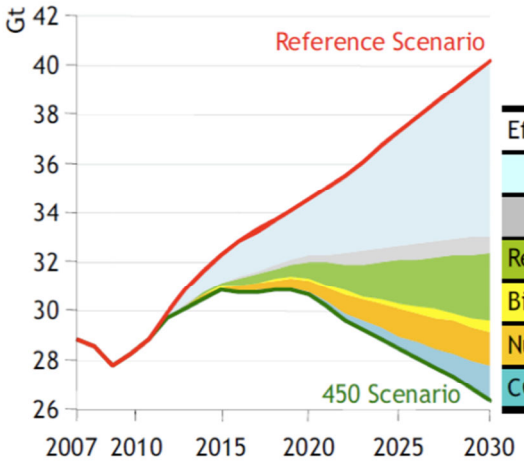
Following discussions with AEMC members during stakeholder consultations, what we believe the AEMC is attempting to point out is that *under the current market framework*, rising peak and average demand is likely to result in significant investment in infrastructure augmentation unless demand-side participation is increased . If this is more in line with what the AEMC is trying to communicate, it needs to amend these statements to avoid confusion.

These statements may also be based on outdated statistics. Peak demand has been the primary factor behind recent electricity price increases because it has triggered increased infrastructure investment. However, recent data indicates that average demand and peak demand have plateaued for the past few years and that they may continue to stabilize or even fall, at least in certain sectors of the NEM. Ausgrid has experienced a fall in residential

[5] Italics our emphasis

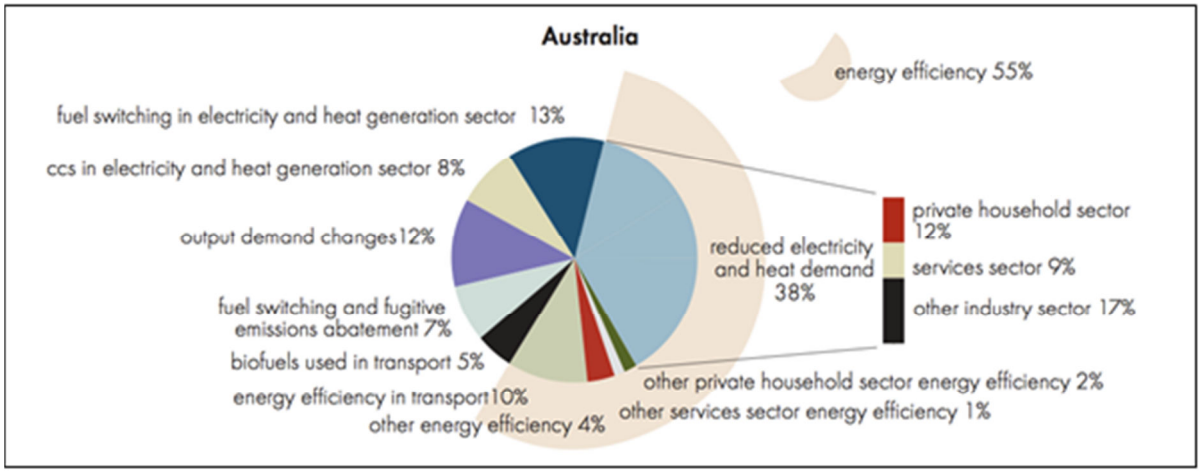
energy consumption by 2% per annum for the past four years. AEMO is expected to announce a fall in average demand of 5 to 6% in the next decade.

It is also not clear whether the AEMC has factored in the degree to which DSP will play in the transition to a low carbon economy. Energy efficiency is predicted by key energy forecasters, analysts, and the International Energy Agency (IEA) to be the primary tool to mitigate carbon emissions. For example, the IEA predicts end use and power plant energy efficiency measures to comprise 65% of CO2 abatement in 2020, and 57% in 2030 (for the whole world economy) in a 450ppm scenario.[6]



	Abatement (Mt CO_2)		Investment ($2008 billion)	
	2020	2030	2010-2020	2021-2030
	65%	**57%**		
Efficiency	2 517	7 880	1 999	5 586
End-use	*2 284*	*7 145*	*1 933*	*5 551*
Power plants	*233*	*735*	*66*	*35*
Renewables	680	2 741	527	2 260
Biofuels	57	429	27	378
Nuclear	493	1 380	125	491
CCS	102	1 410	56	646

In its 2007 publication Technology: Toward a Low Emissions Future, ABARE predicted energy market energy efficiency to comprise 38% of technological abatement of GHG emissions, plus another 12% for reduced output demand:



The review primarily focuses on how DSP will improve the economic efficiency of the NEM. It is not clear that the review has factored in the significant role DSP will play in the transition to a low carbon electricity supply. The AEMC needs to ensure that it identifies and recommends market and regulatory frameworks which take into account this required

[6] IEA (2009) *World Energy Outlook 2009: Executive Summary* International Energy Agency, France, p.8 Available at: http://www.worldenergyoutlook.org/docs/weo2009/WEO2009_es_english.pdf

flexibility of demand — not just those which also presume ever increasing demand for electricity.

5.7 Investigation of Supply-side Market Failures

Based on the content of the Issues Paper, it is not certain that supply side will be investigated to the extent required to address the NEM's supply-side bias. During our advocacy on optimal DSP, we have noticed that there seems to be a level of complacency with the supply-side of the NEM, with both government regulators and other stakeholders making statements to the effect that 'we have fixed the supply-side: now we have to fix the demand-side.' However, based on the issues highlighted above, TEC is of the opinion that in order to achieve Pareto optimality, the rules for both demand and supply-sides require addressing.

The Issues Paper states that *DSP III* excludes a review of the rate of return on capital. We agree that it is probably beyond the scope of a DSP review to investigate how the WACC is determined, but the AEMC must have some investigation into how high returns on capital contribute to the bias towards supply-side investment in the NEM. Experts such as Ross Garnaut and Andrew Reeves have concluded that part of the reason for sub-optimal DSP is because the current rates of return on capital are set too high and providing too much of an incentive to invest in supply-side projects. Market and regulatory arrangements for optimal demand-side participation need to factor this into account if they are to achieve the NEO and Pareto optimality.

6. Role of stakeholders

Total Environment Centre has provided a perspective in this submission will likely not feature in the submissions of other stakeholders as it lies outside of the remit of most organisations. However, this issue deals with the core problem of sub-optimal demand-side participation in the NEM and is based on sound argument and evidence. As such, we urge the AEMC to take our perspective and evidence into account, even if it lacks in frequency.

7. Guidelines for Policy

4. Are there other issues which we should consider in our assessment process and criteria?

9. What are considered the relevant market conditions to facilitate and promote consumer take up of cost effective DSP?

Given the above barriers to DSP, policy designed to stimulate DSP to optimality in the NEM will be most robust if it:

1. corrects the bias towards supply-side in the NEM;
2. provides a price signal for DSP which factors in its costs and benefits;
3. helps achieve the NEO — in the broad public interest sense as defined in the Hillmer Inquiry; and
4. factors in transaction costs.

There are other barriers to DSP which will no doubt be covered by the AEMC and other stakeholders, and these will also need to be considered in the identification and creation of effective DSP policy.

Total Environment Centre is not proposing specific policies which take these issues into account as part of this submission; however, it is preparing analysis of appropriate policy to stimulate optimal DSP which we will submit it as part of this review.

Total Environment Centre would also like to meet with the AEMC and discuss both our findings and the issues raised above. We look forward to advising the AEMC as part of this review and on other matters pertaining to optimal DSP in the NEM.