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Power of Choice – Stage 3 Demand Side Participation Review: Issues Paper

The Energy Supply Association of Australia (esaa) welcomes the opportunity to make a submission to the Australian Energy Market Commission's (AEMC) Issues Paper for Stage 3 of the Demand Side Participation (DSP) review, which the AEMC has entitled *Power of Choice*.

esaa is the peak industry body for the stationary energy sector in Australia and represents the policy positions of the Chief Executives of over 40 electricity and downstream natural gas businesses. These businesses own and operate some $120 billion in assets, employ over 52,000 people and contribute $16 billion directly to the nation's Gross Domestic Product each year.

As a fuel and technology neutral organisation, the Association considers that DSP has a role to play in meeting Australia's energy needs where it is efficient. Consistent with the allocation of resources in the broader Australian economy, the Association considers that prices should be the primary driver for DSP. DSP should be facilitated via open and competitive markets that allow for efficient cost-reflective pricing and through effective incentive-based economic regulation of networks that appropriately rewards networks owners for innovation and investment in DSP.

Where price signals are efficient, the market – both suppliers and consumers – can be expected to find a way to deliver cost-effective DSP using commercial agreements to deal to split incentive issues. However, given the range of non-price barriers to DSP, the Association considers that there may also be scope for measures additional to price signals to address issues such as information, capital availability and to help minimise transaction costs. However, such measures should be complementary to efficient price signals as they are less likely to be effective in isolation. While there are challenges to improving the efficiency of price signals to consumers in Australia and barriers exist that are beyond the AEMC's control, the Association nonetheless considers that this should be a primary aim of this review.

The Association understands that the purpose of the Issues Paper is to elicit initial views to frame the remainder of the review and that the AEMC is not seeking solutions at this stage. Bearing this in mind, this submission firstly makes some general observations about the context for the review. It then makes more specific comments on matters in the Issues Paper regarding the remainder of the review.

Context for the review

Prices are rising

esaa notes that households and businesses have been raising concerns about the rising costs of energy.[1] As has been well-documented by the AEMC in their recent report[2], electricity prices have increased faster than inflation in recent times, with a short term outlook for continued rises – a 30 per cent nominal increase over 2009-2010 to 2012-2013. Medium and longer-term analysis also projects substantial price rises.[3] This outlook of rising prices underscores the timeliness of this review and the importance of examining options that could alleviate cost pressures on the system, including by consumers participating more actively in their energy supply.

The way capital is used is important

A key driver for higher electricity costs is the declining utilisation of the electricity system. Capital utilisation is especially relevant given the industry is one of the most capital intensive in the world. While average consumption – at least at the household level – is declining slightly, peak demand continues to rise. In order to meet system reliability standards, the industry must invest in infrastructure which is capable of meeting periods of high demand. However, this infrastructure is required for a few days per year but requires large capital investment. This situation is an inefficient way to use the electricity system.

One measure of the way capital is being used is capacity factor, which is the ratio of total generation to the theoretical maximum generation if total installed capacity generated constantly (it is of course impossible for plant to generate constantly given the need for maintenance etc. However, this measure gives an indication of the rate at which available plant is being used). As capacity factor is measured at the generation level it gives an indication of trends that are likely to be reflected throughout the supply chain, given both the transmission and distribution systems are similarly built to meet peaks in demand.

Chart 1 shows the average Australian capacity factor for the last 50 years. It shows that from the 1950s to mid 1980s the capacity factor was fairly constant. This period was characterised by full government control of the electricity systems and large, lumpy investments that led to periods of over capacity. From the mid 1980s the capacity factor rose steadily until the middle of the last decade. This was a period of reform, especially in the eastern states, with the advent of the NEM creating a competitive dynamic that drove better use of the generation stock and improved

[1] The Association questions why gas issues have been explicitly excluded from the review. The physical properties of gas, such as the ability to economically store it, may mean that not all DSP issues for electricity are as relevant to gas. However, many of the drivers for higher electricity prices are relevant to gas. As such consumers may be exploring energy efficiency or conservation strategies regarding their gas consumption. In addition, fuel switching from electricity to gas, either as reticulated supply or for distributed generation of electricity, brings gas issues into the review.

[2] AEMC, *Future Possible Retail Electricity Price Movements: 1 July 2010 to 30 June 2013*.

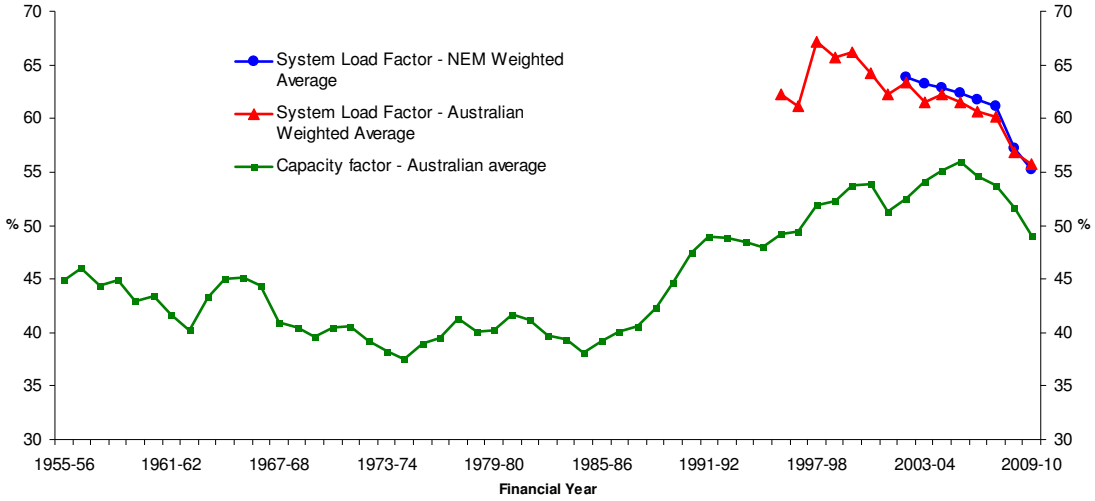
[3] For instance, recently released Treasury modelling of the impacts of carbon pricing on electricity prices suggests that, compared to current levels, average Australian wholesale prices could be 68 per cent higher by 2020, 173 per cent higher by 2030 and 278 per cent higher by 2050 in real terms. See chart 5.27 in the *Strong Growth, Low Pollution* report.

interconnection capabilities reducing the excess capacity required in individual states. The capacity factor has declined sharply since then.

A second, similar, measure of the way capital is being used is system load factor, which is the ratio of average load to historical system peak demand. The difference between capacity factor and system load factor is that capacity factor is based on installed capacity, whereas system load factor is based on peak demand (which would be less than installed capacity). Chart 1 also shows system load factor for Australia over the last 15 years, and for the National Electricity Market (NEM) regions over the last decade. It shows a similar trend to capacity factor, with declining rates of use of the capital stock over the last decade.

Because energy businesses need to recover the costs of infrequently used infrastructure required to maintain supply, a falling capacity factor and system load factor can be expected to put upward pressure on prices. As such, measures to improve the rate of capital utilisation will be an important means to reduce the requirement for investment in occasionally used infrastructure, which should minimise future price increases.

Chart 1: Capacity factor and system load factor – Australian and NEM averages



Notes: Data taken from the *Electricity Gas Australia* publication series of the Energy Supply Association of Australia and esaa's internal historical database. Due to the prevalence of hydro plants in Tasmania, which are subject to the availability of water, the system load factor calculations do not include Tasmania. Figures for Papua New Guinea are included for capacity factor before 1976.

The productivity story is also revealing

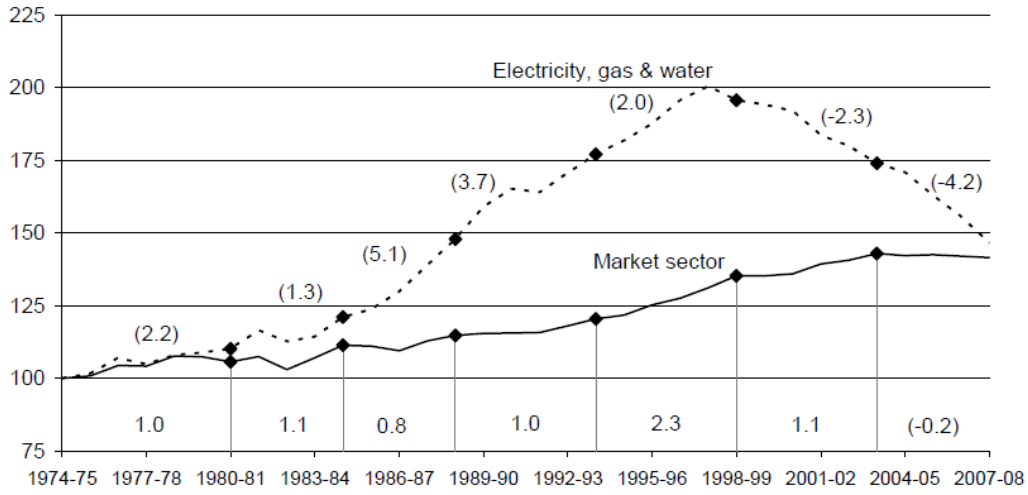
Measured productivity is another method of examining the way the electricity system is being utilised to satisfy consumer demand. Productivity measures changes in the energy supply chain's use of inputs (of labour and capital) to produce energy output. If the output of energy is rising faster than inputs, productivity will rise. Broadly speaking this will put downward pressure on prices. The reverse holds as well i.e. declining productivity puts upward pressure on prices.

The Issues Paper mentions productivity in Section 2.1, where it notes that productivity has increased in the electricity industry. While true that productivity has

increased over time, a closer look reveals a more nuanced story. As shown in Chart 2, taken from recent research by the Productivity Commission[4], productivity in the Electricity, Gas and Water sector (of which electricity is the largest component) improved strongly from the early 1980s to the late 1990s – at rates much faster than the rest of the economy. However, since the late 1990s productivity in the industry has declined notably.

Given the relationship between productivity and prices, it will be important to uncover the drivers underlying these trends. A key driver is likely to be changes in the utilisation of the electricity system to satisfy demand and in particular, the divergence of peak and average demand growth.[5] This is especially relevant to DSP. The Productivity Commission is currently undertaking research to examine in more detail the productivity drivers in the electricity sector and the Association encourages the Commission to consider the results of this research in future stages of the review.[6]

Chart 2: Multi-Factor Productivity across productivity cycles — Electricity, gas & water and total market sector (Index 1974-75 = 100)



Data source: ABS (*Australian System of National Accounts, 2007-08*, Cat. no. 5204.0); ABS (*Experimental Estimates of Industry Multifactor Productivity, 2007-08*, Cat. no. 5260.0.55.002) and Commission estimates.

[4] Productivity Commission, *Australia's Productivity Performance*, Submission to the House of Representatives Standing Committee on Economics, September 2009.

[5] Other factors contributing to declining productivity could include investment cycles (which would see the measured inputs into the industry increase at a rate temporarily faster than output growth) and changes in the generation mix towards lower capacity generation technologies. There are also likely to be factors offsetting the decline in productivity through this period, such as the creation of competitive electricity markets in the east and west of Australia.

[6] The Productivity Commission is undertaking a supporting research project into productivity in the electricity, gas and water industries. According to their website this is expected to be released in September 2011.

Comments on the Issues Paper

The objective for the review

The Association broadly supports the AEMC's objective of seeking to "identify 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." Economic theory suggests that market outcomes will be more efficient if correct price signals are received by consumers. This will enable the participation of the demand side by enabling the 'true' demand for electricity to clear the market and set prices and quantity traded, rather than a demand curve that is not shaped by price signals and hence does not accurately reflect consumer preferences and their willingness to pay. Therefore, facilitating DSP should support the National Electricity Objective of promoting efficient use of and investment in electricity services.

While esaa supports identifying the regulatory arrangements that will enable the demand side to participate more effectively, it considers that the review should also identify regulatory barriers that inhibit DSP and articulate how they do so.

An obvious example is the continued regulation of retail prices in all NEM states except Victoria. This inhibits retailers from offering more innovative products to consumers, which could include DSP options. As price regulation is primarily at the household/small user level, it is not likely to be a material factor in inhibiting DSP arrangements for larger users. However, the potential for DSP amongst small customers, including households, should not be overlooked. For instance, residential electricity consumption was 30 per cent of total consumption in Australia, and as high as 35 per cent in South Australia in 2009/10.[7] It is this small customer group where retail price regulation is inhibiting innovative options.

Another salient example of regulatory barriers is where governments do not allow cost increases to be reflected in prices, such as recently occurred in Queensland[8] and Western Australia.[9] While these incidents are not DSP specific, they raise the risk that businesses that undertake investments to support DSP will not be able to

[7] Figures from *Electricity Gas Australia*, 2011. On this point, one area where further information would be useful from the review is the contribution of different energy consumption sectors to peak demand. This would provide an indication of the drivers of rising peaks and guidance on where gains could potentially be made across the residential and commercial sectors.

[8] On 27 May 2011 the Queensland Government gave advice that, as shareholder, it would limit the additional revenue that Ergon Energy and Energex could raise as a result of an Australian Competition Tribunal's review of the Australian Energy Regulator's 2010-15 determination for those businesses, which would have increased revenue by $541m over the period.

[9] In July 2011 the Western Australian Office of Energy recommended a cumulative increase of 30.2 per cent from 1 January 2012 for gas tariffs, reflecting higher prices for wholesale gas combined with higher costs to deliver gas to households and businesses through the gas distribution system. The Western Australian Government did not accept these recommendations and instead approved a 10 per cent increase for all tariffs on 1 August 2011. See for more information:

http://www.energy.wa.gov.au/3/3757/64/gas_price_increases.pm

recover their costs. Keeping prices below cost-reflective levels also undermines price signals to consumers. A third example is the present moratorium on time-of-use (TOU) pricing for networks imposed by the Victorian Government in 2010, which means there is little incentive for retailers to develop new products and services incorporating TOU pricing to encourage more efficient use of electricity during peak times.

We support the sentiment in the Issues Paper that the AEMC "will not be pre-judging consumer decisions on how, when and how much [energy] they should be consuming." We agree that the review should focus on facilitating prices to be as efficient as possible to allow suppliers and consumers to interact together to make the best choices given their circumstances. Care should be taken to avoid trying to prescribe a certain pattern of supply and demand as it is difficult for outside parties to know the best interests of suppliers and consumers in a given situation. Similarly, just as we do not support artificial barriers to DSP, we do not support the review seeking to implement measures that are de facto subsidy schemes for DSP options. Rather esaa considers that the review should identify the conditions necessary to allow an efficient level of DSP to be selected by suppliers and consumers.

The scope of the review

The review should be mindful of greenhouse policy in Australia given the link between DSP options and emissions reductions.[10] However, we consider that it should take care to not inadvertently become overly greenhouse focused, especially as Australia's greenhouse objectives are already being addressed through the Government's Clean Energy Future package of measures. It is important that evaluation of DSP options in the review focuses on efficiency in general and hence incorporates all costs and benefits and does not prioritise the emissions reductions benefits. Emissions reductions are just one factor to be taken into account in cost benefit analysis, and given the impending carbon price mechanism, the review can anticipate the application of a carbon price. This means that with pricing as the driver, the costs of emissions (or conversely the benefit of emissions reductions) are already accounted for in the price of electricity. Such an approach is another reason to have a price focus in determining optimal DSP levels. This approach also avoids the complexity of resolving conflicting objectives for some DSP options with respect to emissions. For instance, while some DSP options may reduce greenhouse gas emissions, others may increase them, such as load shifting to off peak times when emissions intensive baseload generation is more likely to be dispatched.

The Issues Paper states that the review will consider all arrangements that impact on the electricity supply chain. The Association supports this broad focus for the review. However, while the AEMC's analysis will provide useful insights on a range of issues that bear on DSP in the electricity market, many of these will be outside the electricity market. It would not make sense to attempt to indirectly address these barriers by regulatory intervention within the energy market. Instead, one possible output from

[10] This is demonstrated in the recent Treasury modelling, which finds that reduced demand from carbon pricing delivers almost half the cumulative abatement to 2020 from the electricity sector. See *Strong Growth, Low Pollution* report, page 109.

the review's holistic analysis is a list of reform suggestions/areas for investigation in other sectors that impact on efficient outcomes in the electricity market.[11]

One new development where DSP may become increasingly relevant in the future is electric vehicles (EV). The advent of EVs could in time become a significant new source of load on the grid. While it is a big opportunity for the electricity industry, it poses challenges to be managed. For instance, if everyone drives their EV home after work and tries to recharge at the same time, that will just exacerbate existing system peaks. However, if charging was 'smarter', such as overnight to flatten generation load, it could have benefits for the electricity system. To unlock this 'smarter' charging potential, the right prices and signals are needed. If not, consumers have no incentive to consider the impact of their decisions on the grid. The Association notes that the Ministerial Council on Energy has agreed to request the AEMC to review energy market frameworks to identify barriers to the efficient uptake of electric and natural gas vehicles.[12] Given the link between DSP and EVs, it would make sense that progress in the EV review is mindful of the DSP and vice versa.

What do efficient prices look like?

The review focuses, correctly in our opinion, on ways to encourage efficient levels of energy consumption. If changes are to arise as a result of this review, consumer behaviour is crucial. Finding ways to flatten demand peaks, and increase use in off-peak times, would minimise the need for costly upgrades to the system in the future to cater for relatively few days of very high demand. For consumers to understand when are the critical times to reduce or shift consumption, they need a price signal – the high reliability of the network means that congestion is not otherwise visible to them (unlike say road users who get stuck in a traffic jam). As such, efficient price signals are a necessary (but as noted by the AEMC, not sufficient[13]) condition for a more efficient electricity system.

A comprehensive analysis of the impact of dynamic pricing on reducing peak from Australian and international studies by Faruqui (2010)[14] reveals that changing behaviour is possible through price signals and other measures. The analysis shows that trials of different forms of dynamic pricing had average peak demand reductions of between 4.7 per cent and 34.1 per cent depending on the type of pricing (including time of use tariffs, critical peak pricing) and enabling technology (including cycling switchers and Programmable Communicating Thermostats which enable appliances

[11] For instance, DSP may be inhibited in the building sector, for instance, due to factors such as the tenant/landlord split incentive issue. It should be noted that regulatory action outside the energy markets is being applied to this issue through increasing requirements to rate and disclose energy efficiency standards for buildings, which may be emerging as a factor in setting rents or attracting tenants in the commercial building market.

[12] Ministerial Council on Energy, Meeting Communique, 10 December 2010.

[13] Other conditions noted by the AEMC for efficient consumer participation is that they are able to adjust their consumption in response to price signals and see value in responding.

[14] See Faruqui, A. (2010), "The ethics of dynamic pricing", *The Electricity Journal*, 23(6): 13-27 and also Simshauser and Downer (2011), "Limited-form dynamic pricing: applying shock therapy to peak demand growth", AGL Applied Economic and Policy Research, Working Paper No.24 – Dynamic Pricing

such as air-conditioning units to be throttled back). We encourage the AEMC to examine these results, and other results from empirical trials.

Just how 'efficient' price signals will become in time is unknown, and is likely to depend on factors including technology, community acceptance and individual consumer preferences about how they engage with their energy supply and their capability to do so. However, it will be worthwhile if the review could define, in theoretical terms at least, what a completely efficient price signal might look like (noting that there is likely to be more than one way to give efficient price signals). That is, the review could set out what a set of prices would look like if all costs from the supply chain were allocated to the point of consumption at the time of consumption. It could then explain where current pricing deviates from that standard. This is not to suggest that a fully cost reflective pricing regime (with no cross subsidies, postalisation or smoothing of volatility across time) is desirable. Such a pricing regime is probably not possible to implement and could be unacceptable to the community. Further, the ability of such a set of price signals to improve economic efficiency is limited if consumers can not completely respond to them. Nonetheless, such an exercise would provide a reference point to evaluate the current pricing situation, much as theoretical models of perfect competition provide a reference point for studies of markets.

Economic analysis of options

We support the approach outlined in Chapter 3 of the Issues Paper of using an economic framework to assess DSP options and cost benefit analysis. We note that this analysis should acknowledge that some of the benefits of DSP may not be seen for some years; however, simply because benefits are not immediately visible does not mean that they do not exist or offer real transformative value. As such, the cost benefit analysis needs to acknowledge that businesses and consumers may need time to discover what can be realised with any given DSP options and learn how to maximise benefits. Further, some of the benefits of any given DSP option are reliant on other market conditions. As such, interdependencies between DSP technologies may need to be taken into account.

Further, it should be noted that the impact of some DSP options can go well beyond the most visible part of the program that interface with customers. For instance, compared to simple interval meters, which can deliver two or three tariff types at pre-set times but continue the current paradigm of providing no additional information to consumer except periodic bills, Advanced Metering Infrastructure (AMI) allows more dynamic pricing as well as enabling real-time information to consumers and potentially appliance control. In addition to providing consumers with information, AMI also supports increased flexibility and understanding of the network through improvements in information and communications technology. Better identification of faults and their causes, and richer information about the stress points on the network, can reduce the need for both investment in network capacity and in ongoing maintenance costs. Such 'behind the scenes' benefits of DSP options should be taken into account.

A broad definition of DSP has advantages; but must be done carefully

The AEMC has defined DSP broadly in this review. It describes DSP as the actions that are available to consumers (or their agents) to reduce or manage their electricity use. It classifies as DSP actions as diverse as load shifting, energy efficiency, distributed generation, energy conservation and fuel switching.

We are comfortable with this broad definition of DSP as it captures the different options consumers have to engage with their energy supply. However, having broadly defined DSP, it will be important that the review is careful not to lump all DSP options together and apply the same analytical frameworks or policy recommendations to them. This would be inappropriate given the fundamental differences between the types of DSP, the barriers they face, their impact on the system and their implications for cost and price outcomes.

For instance, load shifting away from peak times has the potential to reduce network costs. In contrast, installing distributed generation could actually increase network costs to integrate reverse power flows into the system (notably these types of costs are currently not being reflected to consumers installing small scale systems under government support schemes). Similarly, wide spread load shifting could reduce total system costs and hence prices. Energy conservation options could have downward pressure on an individual customer's bill, but if widespread, could actually increase energy prices if they don't lead to changes in peak demand patterns as the same fixed system costs would need to be spread over less volume of energy. Articulating how different issues apply to different types of DSP at all stages of the analysis will be important to understanding the implications of different types of DSP.

The Association also notes that, while perhaps not DSP in a strict sense, the decisions that consumers make to change retailers is one way that consumers are already actively making choices about their energy supply. Australia has some of the most competitive retail markets in the world.[15] In a competitive market different retailers will offer different products, which may include DSP components, and that consumers could be expected to switch if the product offering meet their preferences. As such the review should note the role of a competitive retail market in supporting DSP and hence, the importance of removing barriers to a competitive retail market, such as price regulation.

Communicating the nature of the problem and the potential benefits

As noted above, the review comes at a time of heightened focus on energy supply. The Association sees an important public education role for this review, both directly through the AEMC, and by other parties drawing on the information from the review. The experience with AMI in Victoria provides an indication of the public communication challenges that may be encountered in seeking to deploy DSP options and the importance of bringing the community along the journey.

[15] See *World Energy Retail Market Rankings 2010* report by vaasa ett from their Utility Consumer Switching Research Project, available:

http://www.eraa.com.au/db_uploads/World_Energy_Retail_Market_Rankings_2010.pdf

We agree with the Issues Paper that the provision of information and education is necessary to increase consumers' understanding of the impacts of their electricity consumption on their bills and on the cost of electricity supply. For instance, in some residential areas in South Australia the average use of electricity in homes is around 20 per cent of their peak demand[16]. Similarly, some estimates in Queensland are that the average investment to meet each megawatt of additional capacity is $3.5 million, but not all these costs are met by the customers who are the source of the demand growth.[17] Communicating the implications of such patterns of electricity consumption on prices to consumers is an important challenge for this review. This will help a greater understanding of rising prices and will help prepare the community to adopt DSP measures in the future.

In addition to educating consumers on the sources of rising prices, it will be important that the review helps them understand where positive changes can be made and explains "what's in it for them". Therefore, we support the review's intent to seek to quantify the potential cost savings that could be possible from DSP and how that could translate into lower energy prices for consumers than otherwise. This will be valuable both for the purpose of conducting cost benefit analyses of various measures and to help communicate to the community the potential benefits of DSP.

However, it is important that the review is realistic about what could be achieved by DSP. For instance, it may be the case that the potential for benefits through some DSP options is in the long term and may be in the form of reduced increases in prices, rather than absolute reductions. Further, not all of the drivers for the past and potential future increases in energy costs can be ameliorated by DSP. Cost pressures that are less amenable to DSP include: the cost of replacing aging assets and meeting stricter reliability standards; the cost pressures from greater international demand for Australia's fossil fuel energy resources or the move to more expensive forms of generation due to carbon pricing; transmission costs from connecting remote renewable generation;[18] the cost of government schemes, which although currently a small share of total costs are growing fast. These drivers are likely to continue to place pressure on costs irrespective of DSP.[19]

Drawing lessons from the experiences of the energy sector and other industries

The Association supports the review examining current examples of DSP in the market. Many of esaa's members are currently undertaking DSP activities, both in response to regulatory requirements and commercial drivers, which will provide important lessons for the review to draw on. For example, in Queensland, Ergon

[16] http://www.etsa.com.au/centric/our_network/demand_management/demand_management_faqs.jsp

[17] The $3.5 million comprises $2 million in distribution network assets, $0.7 million in transmission asset network costs and $0.8 million generation costs. See: http://www.cleanenergy.qld.gov.au/zone_files/Demand_side/110720_6167_qemp_final.pdf

[18] The recent Treasury modelling projects the share of renewable technology could be around 40 per cent of generation by 2050. Much of this is likely to be remote from existing networks.

[19] Indeed, some of these cost drivers could be intensified by DSP. For instance, retailers are recovering the cost of government schemes to support energy efficiency for some consumers from all consumers.

Energy and Energex are trialling a time of use pricing system where participants are asked to keep their use below a threshold on days of maximum demand.[20] Origin Energy has also recently announced a trial of residential energy management systems.[21] AusGrid and AGL Energy are involved in the *Smart Grid, Smart City* project. The installation of Advanced Metering Infrastructure by Victorian distribution companies – CitiPower, Powercor, SP AusNet, United Energy Distribution and Jemena – is a large scale example of a technology rollout that provides the foundation for future DSP.

Furthermore, while outside of the NEM, Western Australia's Wholesale Energy Market involves a reserve capacity mechanism which includes a range of DSP providers. It would be worth the review examining the recent experience of Western Australia using load curtailment to manage the system during times of stress.[22]

In addition, the Association considers that the AEMC should seek to draw on lessons from other industries where consumers have become increasingly engaged over time and make active decisions about the quantity and timing of their consumption. For instance, the telecommunications and internet industries commonly provide products/services that have different prices, terms and conditions at different times of consumption. Even the price of energy for domestic transport (i.e. petrol) fluctuates through weekly and daily cycles in response to market conditions. Identifying the similarities and differences between these industries and energy supply could be instructive in determining the necessary market conditions to support DSP. They could also help in explaining DSP to the community.

Keeping energy in perspective

Despite the recent focus on household energy prices, the review should be mindful that, on average, stationary energy costs remain a small proportion of household budgets. According to the current Australia Bureau of Statistics (ABS) Household Expenditure Survey (HES), the share of household expenditure on domestic fuel and power is 2.6 per cent for the average household. This compares to expenditure on other "essential" items such as food: (17.1 per cent of total), housing (16.1 per cent of total) and clothing and footwear (3.9 per cent of total). It can also be compared to expenditure on arguably "discretionary" items such as recreation (12.8 per cent of total) and alcohol and cigarettes (3.9 per cent of total).[23]

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[20] http://www.ergon.com.au/energy-conservation/demand-management/electricity-demand-trials/tariff-trial

[21] http://www.originenergy.com.au/news/article/asxmedia-releases/1299

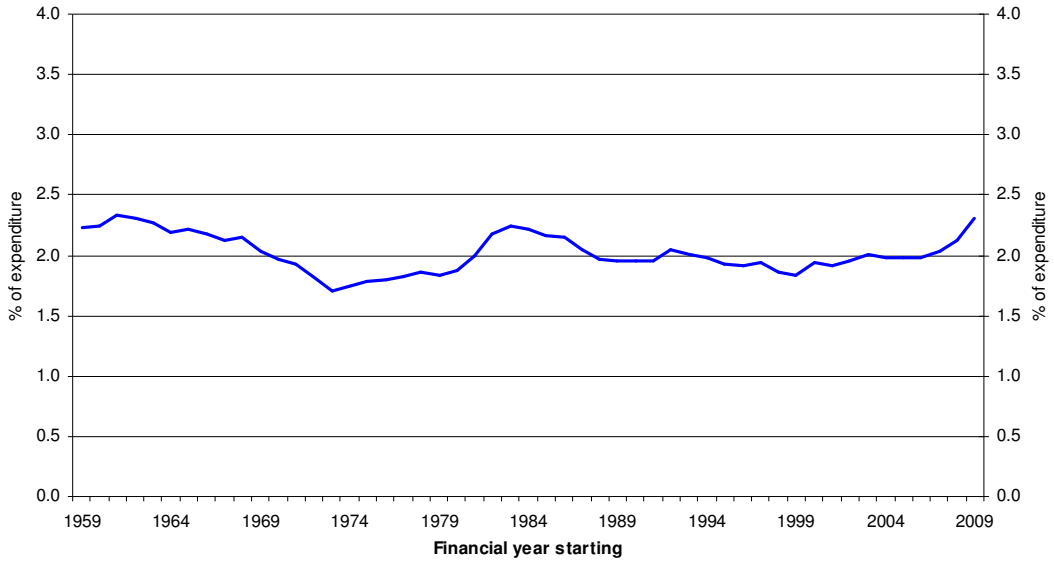
[22] In February 2011 a disruption to Western Australian gas supply required significant volumes of load curtailment to be called upon through the reserve capacity mechanism. Following this episode Western Australia's Independent Market Operator assessment was that DSP delivered and that there were notable impacts on system load. More information can be found here: http://www.imowa.com.au/presentations. To be clear, the Association is not suggesting that the Wholesale Energy Market's capacity mechanism should be replicated in the NEM. Rather, we consider it a source of experiences that could be learned from.

[23] Taken from Australian Bureau of Statistics, Cat. No. 6530.0 Household Expenditure Survey (HES), Summary of Results. It should be noted that the current HES is from 2003-04 and that the ABS is expected to update the HES for more recent data this year.

It should be noted that the share of household expenditure on energy has been relatively constant over a long time period as well. Chart 3 shows the long-term aggregate trend in the share of household final consumption expenditure on electricity and gas taken from the ABS National Accounts.[24] It shows that since 1959 the share of Australian household consumption expenditure on electricity and gas has been constant in a band between 1.8 and 2.5 per cent, and around 2 per cent on average. Over this time the amount of energy consumed by the average Australian will have increased given the proliferation of household appliances. What this means is that for roughly the same share of household budget, Australians are enjoying more energy services today than in the past.

However, as shown in Chart 3, over the last three years there has been an increase in the share of household expenditure on energy, moving it to the top of the long-term historical band. This may be in part driven by the trend of rising electricity prices as identified by the AEMC. However, as noted above, expenditure on energy remains a small proportion of total household expenditure relative to other items.

Chart 3: Share of Household Final Consumption Expenditure on Electricity, Gas and Other Fuels, 1959-2009 (per cent)



Source: Australian Bureau of Statistics, 5206.0 Australian National Accounts: National Income, Expenditure and Product, Table 8. Household Final Consumption Expenditure (HFCE), Original data.

Achieving reform while looking after vulnerable consumers

The analysis above presents an average picture; aggregate data can easily mask distributional concerns. In particular, there are clearly vulnerable households where the share of income spent on energy is higher than the average household. For instance, according to the ABS HES, while the average household spends 2.6 per cent of their budges on domestic fuel and power, the lowest 20 per cent of households by income spend 4 per cent. There are also energy consumers that have acute needs for energy such as due to medical conditions and other circumstances.

[24] Note that data for the long term analysis is a different ABS source compared to the HES, with different classifications.

Support for vulnerable energy consumers is an important area for government action in Australian society. Further, energy companies have hardship programs to assist consumers having difficulty meeting their bills and to avoid disconnection and are working in conjunction with government and regulators to develop a national policy framework for the retail industry through the National Energy Customer Framework. The Association therefore supports the sentiment in the Issues Paper that reforms to support efficient DSP must be done "to ensure that vulnerable consumer groups are not unduly disadvantaged."

The Association notes that the existence of vulnerable consumer groups provides a strong rationale to explore DSP options as they could alleviate future price pressures on such groups. In contrast, not proceeding with DSP reforms on the basis that there are vulnerable consumers could paradoxically intensify pressure on such consumers as it would prevent measures that could ameliorate price increases.

The Association contends that the protection of vulnerable customers and delivering an efficient electricity system should be two separate, but inter-related, issues. The first step is facilitating efficient DSP, including by getting the 'right' price signals to all consumers. It should then be examined if there are a set of consumers that could be unduly disadvantaged by any changes (noting that the majority of households spend a small share of household income on energy) and if there are, these impacts should be addressed. However, there is evidence that low income households can be beneficiaries of dynamic pricing, even without changing behaviour.[25] Further, in a competitive market retailers are likely to offer a range of pricing options including flat rate contracts to consumers that want them. We encourage the AEMC to explore the potential upsides of DSP on different consumer groups.

There are also a range of measures outside the market that could be used to support vulnerable customers, including transfer payments and direct investments, such as in community housing for example. Consistent with Australia's general approach of funding social welfare measures, the costs of social welfare policies should be borne by governments, not industry.

Appropriately allocating costs

We support the Issues Paper stating that economic regulation frameworks for networks, such as a review of the rate of return or the merits review process, are not in scope for this review. While not supporting opening up network regulation, the review must be mindful that to the extent that DSP options involve costs for regulated businesses, these additional costs must be accommodated in the regulatory framework as businesses must be appropriately rewarded for their innovation and investment in DSP.

More generally regarding the costs of DSP, the Association wishes to note that there are unlikely to be many 'free lunches'. Most DSP measures will involve costs somewhere. For instance, energy efficiency measures will typically involve an increased capital cost as the trade-off for reduced ongoing energy costs. Obtaining and disseminating information on DSP opportunities is not costless. Even energy

[25] See for example: http://www.ena.asn.au/udocs/2011/05/Ahmad-Faruqui.ppt

conservation may come at the cost of consumer amenity. The Association considers that the review is correct in identifying transaction costs as part of the equation in determining whether any given DSP option is economic. The Association also notes that businesses could face a range of costs in implementing DSP options in addition to the visible costs of installing infrastructure, such as compliance costs, back office systems, updated billing and staff training. The existence of this class of costs has often been ignored in recent energy policy decision making in Australia.

Rational trade in energy involves trading off the costs and benefits of different energy supply and consumption options. The Association supports the intention in the review to create conditions where consumers and suppliers can interact to find what level of DSP is optimal for their circumstances, given relevant costs and benefits. However, the Association would not support measures that forced the cost of DSP options onto businesses without regard for the ability of businesses to recover those costs. As a general rule, the market should be allowed to innovate, rather than use regulatory requirements.

Energy efficiency

The Issues Paper canvasses views on which energy efficiency schemes to assess and proposes to focus on those that provide direct incentives or propose direct obligations on NEM participants. We support this approach and note that NEM participants currently have a range of obligations and that these are set to expand following recent government announcements. One particularly onerous obligation is that retailers must comply with different, overlapping jurisdictional energy efficiency schemes. Rationalising existing schemes into a single scheme may be preferable and would be consistent with the national character of Australia's electricity market. However, in rationalising the existing schemes such obligations should not be extended to those jurisdictions that do not have such schemes unless there are clear and tangible benefits from doing so.

The Energy Efficiency Opportunities (EEO) reporting requirements have recently been imposed on generators, and are proposed to be extended to networks. While we understand that the Commonwealth government regards this program as a success, the Association considers it is important to understand the relevant differences in what energy efficiency means for industrial companies compared to companies in the energy supply chain.

In the former case, energy is simply one of many inputs to their businesses, and historical low prices may well have led to a lack of interest in considering or pursuing financially rational energy efficiency opportunities. By contrast generators are in the business of energy conversion – it is their core business, and thus imposing a reporting requirement is unlikely to uncover significant cost-effective new efficiency opportunities that would not otherwise have been considered.

In the case of energy networks, these businesses are subject to economic regulation, in most cases by the AER. The AER's processes already involve assessment of the value of energy efficiency in the network companies' proposed spending plans. In particular, this allows them to take account of the effect on energy losses during transportation, which the companies do not pay for, and therefore would not take into

account in an EEO assessment. The EEO therefore appears to be duplicative bureaucracy, as well as less relevant than the AER's reviews.

The Association would welcome these factors being taken into consideration by the AEMC in its stock-take of Australian government energy efficiency policies.

Conclusion

Stage 3 of the AEMC's DSP review comes at an important time in Australia's energy markets. Recent rises in the prices of energy have heightened the focus on energy supply. Addressing this has increased the already high expectations of the community on the energy industry. It has also created an environment where changes in the way consumers choose to engage in their energy consumption may be possible. The Association looks forward to participating in subsequent stages of the review.

Any questions about our submission should be addressed to Temay Rigzin, by email to temay.rigzin@esaa.com.au or by telephone on (03) 9670 0188.

Yours sincerely

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