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Dr John Tamblyn

Chairman

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By email: submissions@aemc.gov.au

Dear Dr Tamblyn

AEMC Review of Demand Side Participation in the NEM

Thank you for the opportunity to contribute to this important review of demand side participation (DSP) in the NEM. The views expressed herein are my own and do not necessarily reflect the views of any of the key stakeholders in the market.

This submission focuses solely on the issue of DSP in the competitive markets associated with the NEM while ignoring the issue of demand management as a potential network support service.

Even during the very early stages of designing the market structures and market mechanisms for the NEM, it was well recognized that efficient DSP in the NEM would be critical to its long term success. Almost 15 years on however, DSP is still at the embryonic stages of development.

The aim of this Review should therefore be more than merely cataloguing perceived impediments to DSP and devising rule changes where feasible to address them. Rather

it should be based on a quantitative assessment of the potential economic efficiency gains that DSP could bring to the NEM and then, if this is deemed to be material and worth pursuing, devising holistic coherent policies and strategies for the market to realize that potential within a reasonable timeframe.

Probably the five most important ingredients for efficient and effective DSP in the NEM are:

- Well informed and motivated consumers;
- Efficient price signals;
- Ready market access;
- The requisite monitoring/measurement, control and communications infrastructure; and
- Low transaction costs.

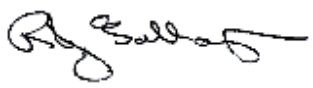
The current impediments to DSP in the NEM across all of these areas are formidable and only some of them can be addressed by amendments to the Market Rules. Also, demand side services have the potential to compete in the provision of a range of different services for the market, in particular:

- Physical cover for the provision of various financial cap products in the forward markets;
- Balancing supply and demand in real time energy dispatch;
- FCAS;
- Multiple contingency reserves; and
- Network support;

The economics of DSP will often depend upon the consumer being able to extract value from the market by the provision of multiple services at the same time or possibly the provision of different services at different times. The AEMC needs to recognize this as it conducts its Review.

Within the limited framework that the AEMC has adopted for the Review, the attached table provides a "shopping list" of issues relating to the operation of the NEM's physical and financial markets which, in my view, the AEMC should be investigating. I would be pleased to discuss any of the matters raised in this submission with you or you staff if you wish.

Kind regards



Director

Att.

Attachment

Potential Barrier	Market Category	Possible Problem	Explanation
Wholesale market processes may exclude potential demand-side resources from efficiently participating.	Existing daily FCAS markets	Scheduling & dispatch infrastructure needs dictated by NEMMCO	NEMMCO demands real time verification of compliance with dispatch instructions. This requires, in effect, constant two-way communications between the DSR load and NEMMCO's control centre for a service which may be very rarely dispatched.
		Time-limited nature of available DSR services	As dispatch of a DSR load can be disruptive to the consumer, quite often there will be some practical limits on the frequency and duration of its dispatch set by the consumer. Under current processes, the consumer cannot set such limits in the dispatch process; he must manage them manually in real time himself.
		No forecasts of potential usage if scheduled	NEMMCO does not publish any detailed analysis of the frequency and duration of the dispatch of historically scheduled FCAS services nor does it publish probability estimates of the likelihood of scheduled services being dispatched; i.e. a FCAS services equivalent of energy pre-dispatch.
		Size of individual interruptible loads is too small for direct participation in the dispatch process	For small DSR loads, consumers are forced to deal through aggregators and/or retailers. Because they cannot transact directly in the market, the value of their DSR can be unduly diminished by intermediaries.
	Real-time energy market	Inaccuracies in predictive market data	Few price spikes in the energy market are predictable because they emanate from a combination of high demand together with either sudden plant failure or generator rebidding close to real time dispatch.
		5/30 price averaging	DSR bid into the market at very high prices is not likely to attract the bid price even if it's dispatched because of the averaging of dispatch prices to determine the trading interval market price for settlement.
		Limited options for market participation	Consumers have essentially 2 choices to derive value from their DSR – direct participation in the wholesale market or "sell" it to their retailer as part of their electricity purchasing agreement. While other options are theoretically possible, retailer attitudes and practices are a major barrier to them being exploited.
		Prudential arrangements	Prudential requirements in the wholesale market are a barrier to consumers participating directly in the wholesale market. They require large guarantees even if the consumer has ample hedge cover.

Potential Barrier	Market Category	Possible Problem	Explanation
		Market price cap	The market price cap being set at an arbitrarily low level acts as a drag on the full development of DSR and equivalent low usage supply side option.
		Regional market design	The regional market design has the effect of suppressing nodal prices whenever intra-regional congestion occurs. Under the new congestion management arrangements, the only avenue available to DSR service providers and generators to extract value by relieving the congestion is via the relevant TNSP.
		Market intervention mechanisms	Market interventions by NEMMCO involving directions to TNSPs (to defer planned maintenance, recall equipment back into service etc.) can suppress market prices and thereby reduce the potential value of DSR.
	Additional reserve markets	Over-reliance of the market on intervention measures to manage system security	Arguably, since market start in 1998, NEMMCO has relied too heavily on the use of its market intervention powers (and veto powers in respect of TNSP planned actions) to protect system security. This suggests there may be a case for other market-based products which would be a boost for DSR.
Financial markets	Day-ahead firm market prices	No readily accessible day-ahead market for firm financial products	While some DSR is available with little or no prior notification, arguably there is much more available with 12 to 24 hours notice. For this to be harnessed there needs to be a readily accessible day-ahead market with full price disclosure. [This could be either a voluntary financial market or a compulsory physical market.]
	Extreme market price risk management	Over-reliance on self-insurance and bilateral contracts for managing extreme market price risk	An efficient market based approach to mitigate extreme market price risk requires the presence of at least some multi-lateral risk sharing in the market. If developed, it could provide significant impetus to the development of DSR and reduce NEMMCO's reliance on market intervention mechanisms.
	Overall contract chain from fuel supplier to consumer	Too much of the risk of non-supply is allocated to consumers	The NEL and other State-based legislation provide an undue amount of legal protection to all market participants and NEMMCO from liability for failure to maintain an uninterrupted supply to consumers. This creates quite perverse incentives in the market and increases reliance on non-market based measures to ensure system security and reliability.
	Contract profile	Inability of a single consumer to readily purchase a contract profile to match his load	The minimum size of contracts and the limited number of standardised contract types available severely limits a single consumer's capacity to purchase a wholesale contract portfolio that would match his load profile.
The costs of involvement in the	Physical	Market fees	Fee structures which do not allocate costs on a "per unit of energy generated or consumed"

Potential Barrier	Market Category	Possible Problem	Explanation
wholesale market and in financial contracting may be unnecessarily high.	markets		basis can deter DSR participation.
		Market participant registration requirements	NEMMCO's requirements of DSR service providers for them to be eligible to participate directly in the physical markets may be unduly onerous, necessitating consumer investment in an unnecessarily high level of infrastructure to facilitate real time market operations.
		FCAS cost allocation	Current methods of FCAS cost allocation deter direct market participation by a consumer because he loses the benefits of load diversity he enjoys when supplied by a retailer.
		Penalties for non-compliance with dispatch instructions	Generators enjoy generous margins in terms of quantum of generation and time in the current non-compliance procedures. Arguably, demand side participants are not treated so generously. Also, the penalties for non-compliance may also act as a deterrent.
	Financial markets	ASIC requirements	ASIC requirements for consumers to be eligible to trade directly in cash settled instruments are likely to be more onerous than those applying to large generators and retailers if direct trading by DSR service providers grows markedly.
		Minimum standardised contract quantity	Consumers may need to over-contract in order to gain an adequate hedge cover. While this does not reduce their capacity to capture the full value of their DSR, it does mean they would need to become virtual generators to do so.
		Brokerage fees	Brokerage fees on small contract quantities are likely to be disproportionately higher than they are for larger contracts
Demand-side participants may not be adequately compensated for providing a demand-side response.	Limitations on participant liability		Market participants and the market operator have been granted an undue amount of protection from liability for failure to maintain an uninterrupted supply to consumers. Arguably, these protections reduce the economic "value" of DSR in the eyes of the industry.
	Guaranteed service level payments		The guaranteed service level payments payable by DNSPs to consumers for low reliability are generally much less than the consequential economic losses suffered by the affected consumers. As above, arguably these relatively low payment obligations reduce the economic "value" of DSR in the eyes of the industry.
	Mandatory emergency load shedding		While the 60% mandatory load shedding scheme may be necessary to protect the physical security of the power system, it is yet another "free DSR service" provided by some consumers for the benefit of other consumers and the industry.

Potential Barrier	Market Category	Possible Problem	Explanation
	measure		
	Wholesale market price cap		The current market price cap of $10,000 per MWh is well below the true economic value of energy supplied, particularly to those consumers in the best position to provide meaningful quantities of DSR services to the market, namely medium to large commercial and industrial consumers. The effect of this flows through into the value of caps and other financial products that reflect the forward value of reliability related services such as DSR and low duty generation.
	Congestion management		The regional market structure together with the market arrangements currently available and contemplated for congestion management do not provide the appropriate market signal of the true economic value of DSR in many locations across the market. Instead of providing a true market based approach to this matter, DSR service providers must contract with the monopoly NSPs.