

in the **Australian energy** market

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The Australian Energy Market Commission AEMC Submissions PO Box A2449 SYDNEY SOUTH NSW 1235

By email to: <u>aemc@aemc.gov.au</u>

## SUBMISSION BY ENERGY RESPONSE PTY LTD REVIEW OF ENERGY MARKET FRAMEWORKS – CLIMATE CHANGE POLICIES

#### FIRST INTERIM REPORT DECEMBER 2008 – REFERENCE EMO0001

Thank you for the opportunity to make this submission.

It is clear that climate change, coupled with the new ways that electricity will be sourced and the potential for changes in consumer behaviour will result in significant increases in a number of areas and will put even greater stress on the Australian electricity supply systems and the relevant markets.

Energy Response operates in 3 areas of electricity supply, viz: the NEM, the SWIS and the North West Power Systems in WA.

Consideration needs to given in the current DSP Review of how implementation of an effective DSP/DSR will lessen the impacts of many of the Climate Change issues as discussed below. We commend the AEMC on aligning this Review process with the current DSP Review.

One aspect of the energy supply and demand of the future under a climate change scenario that seems to be inadequately considered amongst the issues is the ability of consumers to change their behaviour. This would include reducing their overall energy consumption, using the energy more efficiently and choosing the right type of fuel used to supply the need. We think that this needs serious consideration. Energy Response has found a great willingness of consumers to change their demand patterns when adequately motivated (financially and in other ways).

#### Our responses to the Questions raised about the Issues are below.

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#### Part A: NEM and eastern state gas markets

#### **Issue A1: Convergence of gas and electricity markets**

A1.1 Do you agree that the convergence of gas and electricity markets is not a significant issue in the eastern states and therefore should not be progressed further under this Review? If not, what are your reasons for asking us to reconsidering this position?

We do not agree. The convergence of gas and electricity markets should encourage the most suitable fuel for the task to be selected in both the wholesale and retail markets.

#### Issue A2: Generation capacity in the short-term

A2.2 Do you agree that the ability for NEMMCO to manage actual or anticipated transitory shortfalls of capacity is a significant issue that should be progressed further under this Review?

#### Yes

A2.3 Are additional mechanisms required to complement the Reliability and Emergency Reserve Trader (RERT) and NEMMCO's directions powers, and what characteristics should such mechanisms have?

Yes. The ability of consumers to respond to shortages of secure capacity all the time in competition with the supply side. That response needs to be available at the time of the event (ie on an on-going basis). Such a process would be extremely difficult or impossible through the proposed RERT mechanism and totally impossible through the old Reserve Trader mechanism. Victoria and South Australia had little notice of the events of January 2009, the availability of voluntary load curtailment of event a few hundred MWs would have made a significant difference to many thousands of households and businesses who were involuntarily load shed.

A2.4 Do you have any views on the detailed design and implementation of additional mechanisms?

Yes. Happy to describe this through the DSP Review process

# Issue A3: Investing to meet reliability standards with increased use of renewables

A3.1 Do you agree that the existing framework based on an energy-only market design with supporting financial contracting is capable of delivering efficient and timely new investment, including fast response capacity to manage fluctuations in outputs resulting from larger volumes of intermittent wind generation? If not, what are your reasons for reconsidering this position?

No, not with certainty. And if it fails it will create very significant reduction in reliability and increases in price. There has not been any definite commitments to major base

load and extra generation peaking capacity in the tight supply areas and this is resulting in shortages of Reserve in peak seasons with no alternatives being contracted even though they are available.

Further, the essence of Climate Change is that we should expect more and ever larger peaks in demand (possibly both in winter and summer) because of extreme hot and cold spells. Having a supply side strategy to meet those more extreme peaks would be economically foolish and the ability of the supply side to build the infrastructure is limited by the technical resources available and will take years to build.

A demand side strategy could be implemented in a few months and the agreements for the purchase of DSP should be over several years (minimum of 5 and preferably 10 years at a time in minimum block of say 50MW at a time). That will provide a quick response time to unforeseen events and the lengthy agreements will allow aggregators and customers alike to install technologies that will improve response time as well as the reliability (ie firmness) of response.

A3.2 Do you agree that the processes supporting the ongoing maintenance of this framework in respect of review and periodic amendment to the market settings, including the maximum market price, are robust? If not, what are your reasons for reconsidering this position?

No. Increasing the maximum market price without an effective demand side mechanism and the right motivational triggers to adjust their demand behaviour will only hurt all consumers. This will require the consumers how provide DSR to be paid for their participation (responses) to the NEM signals (as is the supply side) so a different framework will need to accommodate both the supply and demand side equally.

## **Issue A4: System operation and intermittent generation**

A4.1 Do you agree that operation of the power system with increased intermittent generation is not a significant issue and therefore should not be progressed further under this Review? If not, what are your reasons for reconsidering this position?

We do not agree. The intermittency of the current wind farms is already causing some problems and operational difficulty even with the improved wind forecasting. There is also not current effective mechanism to counter this intermittent generation without building the same capacity in traditional generation and this is not in line with meeting the NEM efficiency objectives. However, being able to control loads both up and down would provide a fast acting counter to this "hard to predict" intermittent generation. This demand change response is feasible but not in the NEM under the current Rules.

#### Issue A5: Connecting new generators to energy networks

A5.1 Do you agree that the connection of new generators to energy networks is a significant issue that should be further progressed under this Review? If not, what are your reasons for reconsidering this position?

Yes. The rigmarole which has to be worked through is the reason why there is very little distributed generation in the NEM. This is also part of the DSP Review and the subject of action by the AER. This is also a significant issue at the Distribution level and while the generators might be much smaller that therefore require even less rigmarole to make them viable. Energy Response's own experience with two small generation sites (one in Victoria and the other in South Australia of about 2MW each) is that even though there has been no physical changes to the sites or to the protection (we have merely installed NMI accredited metering) it has taken over two years to achieve registration. Some of that delay is attributable to consumer inactivity, but the registration process involving NEMMCO, the incumbent Retailer and the LNSP is so convoluted and includes such bureaucratic madness it is no wonder we have so little DG available.

A5.2 Would any of the models identified in this chapter ensure the more efficient delivery of network connection services? In particular, with relation to these models:

Two factors not mentioned would also assist, viz, nationally consistent rules (that all networks abide by under regulation) and NEMMCO registration costs for small generators being significantly lower.

A5.3 Are there any other potential models that we should consider to address this issue?

Strong encouragement of small efficient generators (which meet consistent technical standards for network connection) at low connection costs. Also if the generator already exists and there is no operational or power flow changes envisaged by bring that generator to market then processing the application through the network and NEMMCO should be automated and significantly simplified.

#### **Issue A6: Augmenting networks and managing congestion**

A6.1 Do you agree that the issue of network congestion and related costs requires further examination in this Review to determine its materiality? This includes considering whether the existing frameworks provide signals that are clear enough and strong enough in the new environment where congestion may be more material. If not, what are your reasons for reconsidering this position?

Yes. There does not appear to be any one party that is responsible for finding solutions for network constraints even thought they are identified. There are thousands of constraints which can impact on the NEM at various times. Some of them create major problems and costs, under certain market and demand circumstances but who is empowered / motivated to act? At the moment it seems that no-one is. Clipping demand on some local areas at the critical time or condition can relieve a constraint, eg, the 132kV parallel to QNI near Kempsey, NSW is costing \$14m to fix but with a better demand oriented process costs could have been as little as \$350k per annum.

#### **Issue A7: Retailing**

A7.1 Do you agree that the current inflexibility in the retail price regulatory arrangements is a significant issue that should be progressed further under

this Review? If not, what are your reasons for this position?

Yes. The lack of a full retail competition across Australia means that the retail price and competition is distorted. This can mean that retailers cannot pass through to their customers in some jurisdictions some of the costs they incur. This means that they will not supportive of some market actions, eg, Reserve Trader.

A7.2 Do you agree that the limitations with current RoLR arrangements are a significant issue that should be progressed further under this Review? If not, what are your reasons for this position?

No. Low priority

A7.3 Are there any additional options that could supplement the processes currently under investigation to address these issues?

Increasing price volatility and raising the maximum wholesale price to \$12,500 will increase retailer risk and hence increase their costs of mitigating that risk with financial derivatives and their prudential costs. This will increase consumer costs on top of the cost of carbon. We are examining the impact of AASB 139 which we believe may also inhibit retailers in the use of physical demand management and we suggest that this become part of the DSP Review even though it is outside the current ToR.

## **Issue A8: Financing new energy investment**

A8.1 Do you agree that the current energy market frameworks do not impede the efficient financing of the significant increase in investment implied by CPRS and expanded national RET? If not, what are your reasons for this position?

The current framework is not effectively inclusive of consumer demand responses and this must be resolved in order to minimise the impacts of Climate change on the reliability and costs of electricity.

#### Part B: Western Australia

#### **Issue B1: Convergence of gas and electricity markets**

B1.1 Do you agree that the convergence of gas and electricity markets in Western Australia is not a significant issue and therefore should not be progressed further under this Review? If not, what are your reasons for reconsidering this position?

Similar comments to NEM.

## Issue B2: Generation capacity in the short-term Issue B3: Investing to meet reliability standards with increased use of renewables

B2.1 Do you agree that generation capacity in the short-term in Western Australia is not a significant issue and therefore should not be progressed further under this Review? If not, what are your reasons for reconsidering this position?

Not significant at this stage. Supply of generators and meeting ever increasing peaks is an issue for all grids world wide. WA have a very effective Reserve process which creates an equal opportunity and incentive for both generation and demand side participation. That provides the WA market with much greater reserve certainty than the NEM.

B3.1 Do you agree that investing to meet reliability standards with increased use of renewables in Western Australia is not a significant issue and therefore should not be progressed further under this Review? If not, what are your reasons for reconsidering this position?

No. More renewables of the intermittent variety will increase costs and require more support infrastructure to ensure reliability. This cost increase can be minimised by having an effective Demand Side Response (see B4.3).

## **Issue B4 – System operation and intermittent generation**

B4.1 Do you agree that, given an increasing amount of intermittent generation, system operation in Western Australia is a significant issue that should be progressed further under this Review? If not, what are your reasons for reconsidering this position?

#### Yes.

B4.3 Are there any other potential models that we should consider to mitigate this issue?

Demand Side Response and / or efficient battery storage coupled with intermittent generation would help overcome some of the matters raised. Energy Response has a frequency control technology that it is in operation in New Zealand and is proposing to do so in the West Australian market.

## Issue B5: Connecting new generators to energy networks

B5.1 Do you agree that the connection of new generators to energy networks in Western Australia is a significant issue and therefore should be progressed further under this Review? If not, what are your reasons for reconsidering this position?

Same as for NEM.

B5.5 Are there any other potential models that we should consider to mitigate this issue?

An open and fair process to identify the best solutions for the network including nonnetwork solutions. Also, where the generators already exist (ie customer plant) that they be able to become market generators (non-scheduled) with considerable ease.

## **Issue B6: Augmenting networks and managing congestion**

B6.1 Do you agree that network augmentation in Western Australia is a significant issue that should be further progressed under this Review? If not, what are your reasons for reconsidering this position?

Yes. All planned augmentations must be considered in a fair and open context with nonnetworks solutions.

B6.3 Are there any other potential models that we should consider to mitigate this issue?

As in the NEM, who is accountable for the process of resolving congestion?

## **Issue B7: Retailing**

B7.1 Do you agree that the current inflexibility in the retail price regulatory arrangements in Western Australia is a significant issue that should be progressed further under this Review? If not, what are your reasons for reconsidering this position?

No comment

#### Part C: Northern Territory

The areas of WA outside SWIS and the Northern Territory have a number of common issues, comprising large distances with relatively small, isolated supply areas and no wholesale or retail markets.

However, they may well to varying degrees suffer from similar impacts from Climate Change such as Carbon costs and more extremes of weather. Energy Response is already applying suitable Demand Side Response applications in the North West of WA and this is enabling more reliable supply with lower investment required in infrastructure for the same energy supplied.

Yours faithfully

Ross S. Fraser Executive Chairman