



Pinewood Corporate Centre
43-45 Centreway Place
Mt Waverley VIC 3149

P O Box 449
Mt Waverley VIC 3149

Telephone (03) 8846 9900
Facsimile (03) 8846 9999

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Our Reference: UE.SU.01

Mr John Pierce
Chairman
Australian Energy Market Commission
P.O. Box A2449
Sydney South NSW 1235

BY EMAIL TO: aemc@aemc.gov.au

(And through the electronic lodgement facility)

Dear Mr Pierce,

NATIONAL ELECTRICITY AMENDMENT (SMALL GENERATION AGGREGATOR FRAMEWORK) RULE 2012, project reference ERC 0141

United Energy (UE) welcomes the commencement of the AEMC's consultation on matters relating to the integration of small-scale generation into the National Electricity Market (NEM). UE recognises that most small generators are likely to be embedded in distribution networks, rather than connected directly to transmission networks.

The Australian Energy Market Operator (AEMO) has put forward the Rule change proposal with the objective of lowering the administrative costs faced by small generators, and as a means of alleviating the regulatory burden on AEMO itself. As noted by AEMO in its Rule change request, the current registration and exemption process in chapter 2 of the NER imposes unnecessary costs on AEMO which are then passed on to applicants through registration fees¹. Under the current process, AEMO is obliged to consider the attributes of each individual generating system in relation to which the applicant is seeking registration. The system can serve as an impediment to the entry of small capacity or low capacity factor generation in circumstances in which the application fee is a significant proportion of the likely income for a prospective participant.

An owner that wished to register several small generating systems would incur a market, non-scheduled generator registration application fee of \$5,100 for each individual application. In effect, therefore, the amount would be paid for each separate generating unit. AEMO expects that the fee will have increased to \$10,000 by 2015-16, a sum which the operator says will be justified by the costs of processing and approving an application. Consequently, a person who

¹ AEMO, National Electricity Rule Change Request – Small Generation Aggregator Framework, prepared by Market Performance, Australian Energy Market Operator, 22nd December 2011; section 3.1.



needed to apply separately for 20 small generating units would incur a total registration cost of between \$100,000 and \$200,000. In contrast, a new market customer would incur a registration cost of up to \$10,000 regardless of the number of market loads to be classified.

AEMO considers that there is little benefit in assessing individual applications for each small generating system. The process imposes an unnecessary regulatory burden on both AEMO and the applicant, with the burden set to increase as the volume of applications grows.

United Energy recognises that small scale distributed generation can provide net benefits to customers, and to the electricity market more generally, by facilitating the deferral or avoidance of the need for network investment. UE is therefore supportive of measures that might encourage the efficient participation of embedded generation. The business believes that artificial barriers which might restrict the involvement of minor generators should be removed.

UE has also prepared a more structured set of responses to the questions posed by the AEMC:

1. Does the existing registration process create barriers to small generators entering the NEM?

If an embedded generator does not wish to sell the energy that it produces to the host retailer in the region, or to a customer located on site, then it does have the option to participate in the wholesale market. However, the generator will face a cost impost in the form of registration fees. AEMO has recognised that these charges may serve as a deterrent to the full participation of embedded generators². When a small generating unit has been registered, then there is some likelihood that AEMO will attempt to micro-manage it.

There is a sound rationale for seeking to minimise the costs of registering embedded generators for participation in the NEM. A large number of embedded generators can provide a collective benefit for the network, and for electricity consumers.

2. Will introducing a Small Generation Aggregator promote greater participation in the NEM by small generators? Is this consistent with the NEO?

The expectation is that there will be greater participation in the NEM by small generators. Energy retailers and other agents can serve as the aggregators of the output from small generators, and can engage in transactions in the wholesale electricity market on behalf of an embedded generator and other parties. The other agents include professional demand-side response firms, energy trading entities and miscellaneous small businesses which are capable of reacting in an agile manner.

Retailers source most of their energy needs through the wholesale market and are required to hold data on the energy from embedded generation that is fed into distribution networks. Retailers are also obliged to pay participant fees in respect of all energy that is sourced and traded.

The promotion of activity in the wholesale energy market can generally be interpreted as fulfilling the National Electricity Objective.

3. Do entities currently exist, or will they enter the market, to fill the role of Small

² AEMO, National Electricity Rule Change Request – Small Generation Aggregator Framework, prepared by Market Performance, Australian Energy Market Operator, 22nd December 2011; section 6, page 10.



Generation Aggregator?

The role of aggregator can be filled by retailers and by other parties. The retailer essentially acts as an intermediary by either aggregating the capacity of several generators, or else by consolidating the network support functionality offered to network service providers.

Professional energy management businesses such as Energy Response and Secure Energy may also be well suited to serving as generation aggregators. Other enterprises may attempt to occupy the niche, although the available opportunities will depend upon the growth in embedded generation more generally. In future, there is scope for electric vehicles to serve as energy storage devices, offering potentially significant benefits for electricity distribution networks. Developments in vehicle to grid technology will play an important role in enabling the participation of electric cars, but market structures also need to be conducive to the involvement of vehicles as a form of network support. Businesses such as “Better Place”, which provide networks for electric cars, are currently well positioned to serve as generation aggregators.

4. Is there an alternative way of lowering the administrative costs for small generators so as to encourage their entry into the NEM?

There are no obvious alternatives available. Under the proposed model, energy retailers and aggregators would purchase the output of embedded generators and sell it into the market at each transmission node identifier (TNI). The systems and processes would effectively match those that are already in place for the sale of energy to satisfy demand. AEMO would have the information available to monitor market transactions at the level of the generation aggregator, but would not necessarily be in a position to identify the output of individual generators.

AEMO would be able to obtain information about individual generating units, if it chose to do so, by recourse to the standing data provisions under clause 3.13.3 of the National Electricity Rules. Aggregators would be asked to collate the relevant data.

5. Under the proposed framework, is it appropriate for Small Generation Aggregators to be exempt from reporting requirements under the CDEII?

Electricity that is purchased on the wholesale electricity market has a carbon dioxide equivalent intensity index (CDEII) that is determined by the weighted average of the emission intensities for all generators. Emission intensities are measured as the tonnes of carbon dioxide per megawatt hour (MWh) of electricity produced. If embedded generators are exempted from the compilation of data that is used to produce the index, then the accuracy of the CDEII will potentially be compromised. Emission reductions are recorded through structural changes in the CDEII, and variations in the level of the CDEII may be used as a proxy for the effects of energy conservation programmes. The CDEII may also be a core variable under an emissions' trading scheme. Accordingly, the exemption of embedded generators from the computation of the CDEII may be an inappropriate policy measure if the particular category of generators produces a significant amount of energy that is sold into the market via aggregators.

United Energy believes that a reasonable threshold should be set for the contribution of data used in the calculation of the carbon dioxide equivalent intensity index. If an aggregator sells more than a certain amount of energy into the NEM each year, then the aggregator should be obliged to compile and submit data on carbon dioxide emissions and energy output. The aggregator would, in turn, have to obtain the component data from the generators that it controls under contract. There may be uncertainties associated with the information depending



upon the generation technologies that are employed. However, the accuracy is, in most cases, likely to fall within tolerable limits.

At present, embedded generators are likely to have a minimal impact on the CDEII that is calculated for different NEM regions. Consequently, most embedded generators would probably fall below a reasonable value for the threshold that might be set for the contribution of data used to work out weighted average values of the index.

6. Will this rule change lead to positive benefits to NEM participants?

An anticipated benefit is that generators will be encouraged to produce energy during times of peak electricity demand. Hence, there should be some alleviation of peak period constraints in the wholesale energy market.

An added benefit is that AEMO will obtain better information about load forecasts and energy consumption from generation aggregators. The current situation is that embedded generators which are unregistered in the NEM are treated as negative loads. A categorisation of this nature complicates the task of assessing the true demand and of preparing accurate supply and demand forecasts which are needed to maintain system security, and for network planning purposes. The negative load issue is of minor concern at present, but could assume a greater significance if, as anticipated, embedded generation becomes more prevalent.

Under the new approach proposed by AEMO, the sum total of energy produced by participating embedded generators (and supplied to the distribution network) will be settled in the spot market, although the energy from individual generating units will be aggregated prior to settlement. The collation will be undertaken by a retailer or other market participant.

For a typical retailer which procured more energy from the NEM than it sold, the energy sold on behalf of an embedded generator would directly offset the energy purchased, and hence there would be no incremental contribution to the energy buffer or overhang. An advantage of the proposed configuration is that AEMO would have data on all embedded generator energy injected into the distribution networks, while retailers would be required to purchase their requirements from the wholesale electricity market. Retailers would be obliged to pay participant fees in respect of all energy sourced or traded.

7. Are there any additional benefits that the rule change is likely to facilitate?

AEMO should continue to apply participant fees to energy market transactions using the widest possible base to spread costs and thereby minimise the cost per megawatt hour of energy that is traded. In addition, all of the energy produced from embedded generation (or the energy injected into the distribution network where net metering is used) should be settled on the market, with participant fees applied to each embedded generator so as to apportion costs evenly and fairly. AEMO would be able to levy charges on participants without incurring excessive administrative costs if the energy output of generators were aggregated by market participants and sold into the market. AEMO would recover participant fees from a relatively small number of participants, and not from individual non-scheduled, market generators. A benefit of the proposed approach is that retailers which purchase energy directly from non-scheduled, market generators will be unable to avoid paying participant fees. Retailers will be obliged to declare the energy obtained from small generation aggregators, and to sell this output into the market.

The owners of small embedded generators are unlikely to be experts in electricity markets and in particular the complex financial arrangements associated with secondary and forward



markets. However, United Energy anticipates that small generation aggregators may serve in the role of financially responsible market participants. The aggregators will therefore manage wholesale market arrangements on behalf of the individual generating units. An obvious advantage, therefore, is that small generators will gain access to the wholesale market and may be able to take advantage of favourable market movements, such as short term spikes in the spot market price. There is an assumption that benefits will be shared between the aggregator and the individual generators. The ability of aggregators to provide a high level of service to generators will depend, in part, upon the generation technology and the level of control that the aggregator is able to exercise. Aggregators will also need to have confidence in their own forecasts of generation output from the separate generating units which they manage.

8. To what extent are the potential issues identified by the proponent likely to impose significant costs on market participants?

UE is unaware of any evidence of significant costs.

There is a possibility that some small generators will reduce their participation in the Reliability and Emergency Reserve Trader (RERT) scheme because the generators will, instead, be responding to price signals in the wholesale energy market. There is also a small risk of some generators being compensated twice for providing a single service. A doubling-up of compensation would occur if generators that are ordinarily responsive to energy price signals from the wholesale market also received payments under the RERT scheme, but did not offer any incremental benefit in terms of the security of supply.

The RERT should operate to ensure that market participants that would not normally respond to energy price signals, are available to increase generation capacity in circumstances in which additional generation output is needed. The main class of generator that could be encouraged to operate at times of critical need via the RERT scheme, and which would not normally respond to energy prices, would be standby backup generators (typically fuelled by diesel or natural gas).

UE notes that the RERT is currently scheduled to expire on 30th June 2016.

9. Are there any other costs that are likely to result from implementing this rule change?

UE has been unable to identify further categories of cost.

Other impediments to the uptake of embedded generation will remain – notably, the absence of nationally-consistent technical connection requirements (or common standards) for access to distribution networks by non-registered small generators. The current Rule proposal by AEMO does not seek to address the issue of the need for common connection standards.

10. Are there any perceived risks to the rule commencing operation prior to the clauses referred to above being prescribed as civil penalty provisions and if so, how significant and likely are such risks?

UE is not aware of any potential, major risks.

11. Are the transitional arrangements proposed by AEMO appropriate?

United Energy does not oppose the transitional arrangements that have been suggested by AEMO. However, UE urges AEMO to think carefully and broadly about other possible



unintended effects of the transitional arrangements.

Final comment

If the AEMC has further questions about this submission, then please do not hesitate to contact Jeremy Rothfield, Network Regulation and Compliance Manager, on (03) 8846 9854. For technical queries, the appropriate contact is David Wilkinson, senior protection and control engineer, who is available on (03) 8846 9738.

Yours sincerely,

Jeremy Rothfield
Network Regulation and Compliance Manager