

24 May 2013

Australian Energy Market Commission  
PO Box A2449  
Sydney South NSW 1235

RE: ERC0156 - National Electricity Amendment (Publication of zone substation data) Rule 2013

Dear Sir / Madam

SA Power Networks welcomes the opportunity to respond to the consultation dated the 26 April 2013, regarding the rule change proposed by the National Generators Forum (NGF) relating to the publication of zone substation data. Our responses to the questions raised by the consultation are detailed below.

Should you wish to discuss any of the responses with SA Power Networks, please contact Mr Grant Cox on (08) 8404 5012.

## Question 1 Data availability and accessibility

**In relation to DNSPs:**

**(a) How many zone substations are there in the DNSP's distribution system?**

SA Power Networks has 363 zone substations as per the definition in NER Chapter 5.

**(b) Is half-hourly interval load data at zone substations available?**

SA Power Networks' zone substations do not contain National Grid Metering (NGM). Therefore interval data is **not** available for **any** zone substation within our network.

SA Power Networks has available limited load data for network planning and operational purposes. The majority of this data is sourced from our Supervisory Control and Data Acquisition (SCADA) facilities which record instantaneous half hourly readings for key items of plant. SCADA facilities are available at about half of our zone substations.

NOTE: The SCADA data is load **not** energy data.

**(c) If the data is available, does it extend back to the previous ten years, or if not, how many years of data are available?**

As advised above half hourly energy data is not available for our zone substations.

**(d) Are there issues with data quality and consistency regarding the historical data? For example:**

**(i) Are there issues related to metering which may affect the quality and reliability of the data?**

Not applicable.

In regard to our SCADA data, the data is not subjected to the same rigorous validation as with National Grid Metering (NGM) data, prior to being entered in our database. In addition the SCADA metering equipment is not subject to the rigorous testing regime that applies to NGM equipment.

Metering issues associated with the SCADA readings do occur from time to time and may therefore be present in the raw data held within SA Power Networks' systems.

In addition, due to the numerous switching events which occur within the distribution network as a result of both planned outages and faults, in order to correctly interpret the data requires a high degree of understanding of the network's topology and the switching events which occurred. Without this knowledge or understanding of the network or of any abnormalities which may have existed, the data provided could be easily misinterpreted and lead the rule change proponents to draw incorrect conclusions. For instance, a peak at a given zone substation may be due to an abnormality in another part of the network resulting in abnormally high readings at one location but abnormally low readings at another. This situation can exist for months at a time if load has been transferred in order to upgrade a particular zone substation. It is extremely doubtful that this level of network familiarity will exist within the organisations requesting this data and therefore brings into question its usefulness to this market sector.

Note: We consider that suitable energy data is available at our Transmission Connections points with ElectraNet.

**(ii) Are there gaps in the data with respect to a time series and/or location?**

For the zone substations with SCADA there are gaps in the load data for various reasons. Some of the reasons are due to SCADA Remote Terminal Unit (RTU) failures, communication network failures or commissioning errors.

**(iii) Are there issues of consistency in data within and between distribution businesses and jurisdictions?**

Unable to comment.

**(e) Can the required data be extracted from historical records? If so, what is involved in this task? How costly and/or time consuming is this likely to be?**

SA Power Networks is unable to create accurate energy data for each of its zone substations.

**(f) What issues are there in the ongoing management and updating of the databases? For example, what business systems and/or processes may need to be put in place in order to facilitate the publication of the data annually?**

SA Power Networks would have to install suitable NGM at all its zone substation to be able to accurately provide the required validated energy data. This data would then be recorded within our existing customer information metering systems. Processes would need to be developed to ensure that the published data could not be used to identify specific large customers within our network due to confidentiality obligations.

Any users of the data would be required to accept and comply with SA Power Networks' Terms & Conditions for use of the data and waive any liability on SA Power Networks caused by inappropriate use, misinterpretation, omission or data inaccuracy. Similarly, such data provided should not be made available or on-sold to other parties without the consent of SA Power Networks.



We would propose to make this report available for download for a nominal period (eg 18 months) after which it would be removed from the site similar to the way in which temperature data is made available by the Bureau of Meteorology. If a request were made for data which had been previously available but subsequently removed, the provision of this information would be subject to a charge by SA Power Networks. To minimise the cost and resource burden to SA Power Networks, we would look to automate as much of this process as possible.

In addition, we would need to administer the access rights of those nominating to receive this information. It would be the responsibility of the relevant party to access this information on a regular basis.

**In terms of all stakeholders:**

**(g) Does the data need to be published in a standardised format (for example, in a spreadsheet) for ease of access? If so, what is the preferred format?**

If this rule change were successful and the data requested was required to be published, SA Power Networks would propose to publish the data on a monthly basis in a similar format to that published by AEMO. Access to this data would be limited to registered users who would have access via secure location within our corporate website and require a login. Users would have to register with SA Power Networks in order to receive a login user ID and password to gain access the data.

## **Question 2 Expected costs of collecting and publishing data**

**In relation to DNSPs:**

**(a) What are the expected establishment activities/tasks and costs in implementing this rule change? Please provide an indication of the magnitude of these costs.**

SA Power Networks would need to install NGM at all its zone substation, which requires the installation of suitable communications channels to each of our zone substations, where none currently exist. SA Power Networks has not performed detailed costs estimates for each zone substation but expects that the costs to install such metering would be in excess of \$16 million.

**(b) What are the expected ongoing activities/tasks and costs in complying with this rule change? Please provide an indication of the magnitude of these costs.**

The ongoing activities would be similar to collecting data for large industrial customers. In addition we would need to publish the data. The expected ongoing costs would be in the order of \$1 million per annum.

**(c) Are these ongoing costs likely to decrease over time? If so, how significantly and over what time period?**

No. The ongoing costs are likely to remain constant ignoring natural inflation.

**(d) Are there other expected activities/tasks and costs associated with this rule change that have not been identified? If yes, in terms of costs, how significant are they?**

None identified.

## **Question 3 Confidentiality issues**

**In terms of all stakeholders:**



**(a) Are there likely to be issues of confidentiality surrounding the publication of zone substation data? If so, at what disaggregated level (that is, in terms of number of customers) do such considerations come into play?**

Yes. SA Power Networks has several zone substations which are dedicated to supplying one or two major customers or sites where the influence of 1 or 2 large customers heavily affect the zone substation's load. Similarly, some substations have significant embedded generation power stations connected to them which may reduce load levels recorded at the substation's transformer level. The data relating to the output of these generators may also be subject to confidentiality. In these instances, the next level of aggregation would be at the Transmission Connection Point level. In these instances, SA Power Networks would exclude the publication of these zone substations readings.

**(b) Will aggregation of the data up to a certain number of customers avoid issues of confidentiality?**

This activity adds complexity and therefore increases the costs associated with the data's provision. Aggregation at TCP level will generally avoid such issues except in the rare instances where major customers are directly connected to the TCP. These customers are normally separately metered and could be excluded if required.

**(c) If so, what criteria should be used to aggregate the data? For example, should aggregation occur where there are five, three or less customers supplied from one zone substation?**

The criteria for aggregation may vary depending on the size of these major customer loads relative to the zone substation's load.

**(d) Will aggregation reduce the usefulness of the data for demand forecasting and econometric studies? If so, what level of aggregation should be applied to avoid the issue of confidentiality while still retaining some degree of usefulness of the data?**

Aggregation should be performed at TCP level. See response to Question 4(b) with respect to benefits of aggregating data at this level.

**(e) How should disputes arising from data confidentiality be resolved?**

Where any potential exists for customer confidentiality to be breached, it is SA Power Networks position that this information should not be published.

**In relation to DNSPs:**

**(f) How many zone substations supply less than five customers, less than three customers and only one customer in a distribution system?**

The following details the number of SA Power Networks' zone substations supplying small customer numbers;

Customer Numbers	Number of Zone Substations
Less than 5 but more than 3	0
Less than 3 but more than 1	1



Customer Numbers	Number of Zone Substations
One	24

While these appear to be relatively small numbers, it should be noted there are other sites which whilst they may have multiple customers, one major customer's load predominates the load seen by the zone substation.

**(g) Are there issues of liability associated with judgements on confidentiality?**

**(h) How should issues associated with making judgements on confidentiality be addressed?**

These judgements should be made at the discretion of DNSPs and not open to dispute.

## Question 4 Expected benefits

**In terms of all stakeholders:**

**(a) What is the materiality of the benefits identified by the proponent?**

In its submission, the NGF in justifying the need for this rule change states that "During the period 1 December 2012 to 24 January 2013, all regions in the NEM experienced record or near record heat wave events." This is not the case. A heatwave in Adelaide is defined by the Bureau of Meteorology as

"5 (five) consecutive days where dry bulb temperature is 35° C or greater; or 3 (three) consecutive days where dry bulb temperature is 40° C or greater<sup>1</sup>".

Such conditions were not achieved in Adelaide during the period described, let alone being a record.

NGF's criticism of AEMO's demand forecasts appears to be based on the fact that actual peaks did not reach either the 10% PoE or in some cases the 50% PoE forecasts. This may not mean AEMO's forecasts are incorrect but rather, that conditions required to achieve these forecasts did not eventuate. It is also worthwhile noting that from our experience, heatwave events prior to the 24 January will not result in system peak demands due to the absence of loads attributable to schools and many large industries.

Comments such as these and others within the submission relating to "actual" growth rates (refer Table 2) within NGF's submission raises concern about their ability to interpret or apply actual load data, and consequently draw appropriate conclusions if the data were provided a zone substation level. Hence, it is our contention that the provision of this data could lead to further confusion rather than providing the clarity sought by the rule change request, particularly due to the level of network knowledge required to correctly interpret or use the zone substation readings.

<sup>1</sup> Table 1, P8, A spatial vulnerability analysis of urban populations during extreme heat events in Australian capital cities  
Final Report – National Climate Change Adaptation Research Facility.



Given AEMO's willingness to provide historic data at TCP level, it is unclear why the NGF has sought to obtain data at a lower level, which involves multiple market participants (ie DNSPs) and significantly higher costs, rather than the interval metering data from a single entity with mandated accuracy levels.

**(b) What are your views on the value of historical and forward looking electricity demand information?**

Whilst historic data may be a good indicator of future demand trends, this data in isolation should not be used as the sole basis of future investment or operating practices. AEMO's forecasts at a macro level include consideration of econometric factors, while TNSP and DNSP demand forecasts take into consideration known future load increases which historic data does not include.

It is important to note that forecasts published by different DNSPs within their respective Distribution Annual Planning Reports (DAPR) may be based on different planning criteria and forecasting principles (eg 10% or 50% PoE). DNSPs will be reluctant to publish forecasts for conditions other than those for which they are required to plan their networks.

As stated earlier, in order for the zone substation data to provide meaningful answers, any user requires a thorough working knowledge of the network and its configuration at any given point in time. It is difficult to see how the proponents of this rule change would have such knowledge, particularly across the entire NEM or at any moment in time.

Similarly, given the volatility of the data at this level due to network reconfiguration or the exclusion of major customer loads (for confidentiality reasons), the meaningfulness of this data to a third party is difficult to envisage. Additionally, given the sheer number of zone substations throughout the NEM and the volume of data associated with each of these zone substations, it is difficult to envisage how generator's would be able use this data to come to meaningful conclusions.

We consider that the most useful data to the rule change proponents would be at the Transmission Connection Point level. The reasons for this assertion are:

1. These sites typically supply larger areas and are therefore less susceptible to the impact of faults or distribution network load transfers;
2. The data accounts for losses in the DNSP's network, therefore better reflects the energy required to be delivered by larger registered generators connected to the transmission network;
3. This data is available from a single source (ie AEMO);
4. Issues of confidentiality are less prevalent due to the relatively low levels of customers directly connected to the transmission network;
5. The data naturally accounts for diversity between zone substations supplied by the TCP(s)
6. The data is already available either from AEMO or commercially (eg NEM Watch).

It should be noted that even data at Transmission Connection Point level requires some understanding of the relevant network topology. This is particularly true for heavily meshed networks such as that operated by SA Power Networks within the Adelaide metropolitan area. Within this meshed network it is possible to interconnect two or more (or parts of) TCPs via the DNSP's sub-transmission network. In addition, embedded generators connected to these connection points need to be considered in order to ascertain the total load supplied to the underlying distribution network at any given time.

**(c) What other benefits of the proposed rule change can be expected that have not been identified by the proponent?**



The benefits suggested by the NGF would appear to be overstated. Given the data volumes involved with this proposal, the level of network understanding and analysis required to be performed by NGF members in order to draw reasonable conclusions or challenge to AEMO on the accuracy of its forecasts are extremely doubtful. It is therefore likely that much of this data would go largely unused and the effort undertaken by DNSPs and the associated costs to make it available both initially and on an on-going basis would be wasted. It is for this reason amongst others outlined in this response, that SA Power Networks strenuously objects to this rule change request.

**(d) Are these other benefits likely to be significant?**

**(e) Who are likely to be the recipients of these benefits?**

It is difficult to see how the benefits described by the rule change proponent will be achieved through the provision of the requested data which could not be otherwise achieved by provision of the data at TCP level (which AEMO has already agreed to provide).

Is this rule change request therefore, premature? Before this request is considered, SA Power Networks would propose that AEMO provide the data at TCP level for the foreseeable future and afford the NGF an opportunity to analyse this data prior to this rule change being considered further.

Following analysis of the data provided by AEMO, the NGF should be in a better position to determine if this rule change is still required.

Until such time as this occurs, SA Power Networks rejects the assertion that the benefits will outweigh the costs in making zone substation energy data available. We have provided additional reasons for rejection of this rule change in our response.

## **Question 5 Consistency of approach**

**In terms of all stakeholders:**

**(a) Should there be a consistency of approach in publishing zone substation and connection point electricity demand data? Please provide reasons as to why there should/or should not be a consistent approach.**

In principle the answer is “Yes”, however it needs to be remembered that multiple DNSP entities within the NEM would be affected by this proposed change and that each DNSP has different systems and levels of data availability. It is therefore likely that achieving a consistent approach would be difficult and / or costly to achieve. For this reason as well as others previously stated, it is believed that the data being offered by AEMO at the TCP level should be sufficient to enable the NGF to achieve the benefits it describes.

Yours sincerely

Submission made electronically.



Grant Cox  
*Manager Regulatory Affairs*

