

NATIONAL ENERGY REGULATOR OF SOUTH AFRICA

In the matter regarding the

Standard Conditions for Small Scale (less than 100kW) Embedded Generation within Municipal Boundaries

by the

National Energy Regulator of South Africa (NERSA)

DECISION

On 22 September 2011 at the scheduled Energy Regulator meeting the Energy Regulator approved the Standard Conditions for Small Scale (less than 100kW) Embedded Generation within Municipal Boundaries. :

1. That the municipalities must register and maintain a database of all small scale (<100kW) embedded generation within their area. Which will incorporate as a minimum the following information:-
 - a) the technology of the generation;
 - b) the capacity installed;
 - c) its location (both on the network and GPS);
 - d) whether there is energy storage associated with it;
 - e) the customer's name and account number.

2. That the municipalities must report to the Energy Regulator on an annual basis the following information:-
 - a) The number of installations for each technology
 - b) The total capacity for each technology installed.

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- c) The total energy each technology has generated onto their system in each "Time of Use tariff" metered time period.
 - d) Complaints that they have received from customers on the same circuit as the generation about quality of supply.
 - e) All safety related incidents involving this generation.
 - f) The tariffs applicable to these installations.
 - g) The Standard Supply Agreement.
3. That the municipalities will take all necessary steps to ensure the safety of their operating personnel with regard to this generation. As a minimum this means putting notices on the circuits where this generation is present so that the operators can see it and in addition marking the locations on all operating diagrams.
 4. That the minimum requirement for this generation is that they must ensure that the **NRS 097-2-1:2010** Grid Interconnection Of Embedded Generation is complied with.
 5. This directive applies to small scale generation of a size less than 100kW.
 6. That these conditions are guidelines currently but the intention is to include them in the Licence conditions of the municipalities when they are reviewed.

REASONS FOR DECISION

INTRODUCTION

7. In the context of this decision embedded small scale generation is generation units installed by the municipal customer behind the meter (Customer side of the metering point) of a size less than 100 kW.
8. Since the load shedding in 2008 there has been a significant increase in the interest in installing this kind of generation by customers. This has been boosted by

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- the availability of numerous renewable energy options which have appeared on the market in response to concerns about climate change.
9. This is in fact a worldwide trend and this kind of generation is becoming more and more affordable as a result.
 10. NERSA has been approached by both Nelson Mandela Bay and the City of Cape Town with a request for NERSA's position with regard to this class of generation .
 11. The **NRS 097-2-1:2010** (Grid Interconnection Of Embedded Generation) applies to this class of generation and the 100kW cut off point is aligned with this standard.
 12. The existence of such a standard makes compliance requirements easier to define from the Energy Regulators point of view as well as the Municipalities.

DISCUSSION

13. The sheer number of installations would pose significant problems for NERSA in terms of the ability to handle the applications that would be received for licence or registration. And it is questionable if it was the intention of those who drafted the Electricity Regulation Act for this kind of generation to be licensed or registered by the Energy Regulator. It seems unlikely that this was the case as own generation was excluded from these requirements.

Orderly development requirements do mean however that there needs to be control and record keeping at some level to prevent chaos. It seems most appropriate that this should be done at municipal level because the municipalities are the most impacted party.

14. With regard to public interest there are two considerations. The first is that at least until 2015 there is likely to be constrained capacity within the country and hence it can be argued that every bit of generation that can be installed to reduce the load on the grid should be welcomed.

The second consideration is that South Africa needs to do everything within its power to reduce its carbon footprint. Thus renewable generation should be encouraged at every opportunity. The Minister of Energy has committed this country to 10 000 GWh of renewable energy by 2013 (White Paper on

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Renewable Energy November 2003) and it is envisaged that most of this class of generation (Small Scale Embedded Generation of less than 100kW Capacity) would be from a renewable source because that is where the interest has been shown to date.

15. Net metering refers to the ability of these small scale generators to be rewarded for energy that they produce which goes out onto the municipal network. Thus the final bill that will be received is for the Nett quantity of energy that they consume from the municipal network. i.e. their total import from the municipal network minus their total exports onto the municipal network. [Subject to any relevant metering periods in operation.]
16. Within the licensed area of the municipalities this should be looked upon as a municipal competence as this class of generation would impact on their load and also upon their revenues.
17. The lowest cost metering solution would be where power exports are allowed to reverse the meter reading. By charging a fixed monthly charge for network services and administration and an energy rate for power purchased such metering would be cost reflective. However the Energy Regulator should require the municipalities to install smart metering which can:-
 - a) handle the separated measurement of bidirectional power flows;
 - b) handle the different Time of Use (ToU) metering periods;
 - c) measure and record peak demand in the different periods.

This should not be an onerous requirement as the municipalities are already required to fit this class of metering to customers with a demand of more than 1000kWh by 1 January 2012.

18. It is important that proper records be kept by the municipalities so that proper planning can be done with the correct information and in addition the contribution to South Africa's targets can be measured correctly. Therefore it

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is recommended that the Energy Regulator require the municipalities to maintain a database of these installations which would record as a minimum:-

- the technology of the generation;
- the capacity installed;
- its location (both on the network and GPS);
- whether there is energy storage associated with it.
- The standard agreement with these customers
- The applicable tariffs as approved by the Energy Regulator

19. The municipalities should be required to submit a report to the Energy Regulator on an annual basis which details the number of installations and total capacity for each technology as well as the total energy generated onto their systems by each technology.

This reporting would provide essential information not only for the Energy Regulator but also for other stakeholders like the Department of Energy.

Although this could be considered a regulatory burden upon the municipalities it is necessary for their own use as part of good governance and control and therefore should not be considered to be a regulatory burden.

20. In addition they should be required to submit a copy of the standard agreement and applicable tariffs. This is so that in the event of a dispute NERSA would have knowledge of the terms of the agreement.

21. They should also be required to report any complaints that they have received from customers electrically near this generation about their quality of supply. This is so that NERSA can be aware of quality of supply issues which these generators may be causing.

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APPLICABLE LAW

22. This decision has been considered in terms of the Energy Regulator Act, 2004 (Act No. 40 of 2004).

CONCLUSION

23. These requirements will facilitate the orderly and sustainable development of the industry and should not add excessively to the regulatory burden as the information required is required for the good management of these facilities by the licencees.

End