



EPHRAIM MOGALE LOCAL MUNICIPALITY

Solar PV Small Scale Embedded Generator information

The Ephraim Mogale Local Municipality have been investigating small scale embedded generation (SSEG) with Photo Voltaic Panels with the assistance of Sustainable Energy Africa, GIZ, CSIR, USAID and SALGA. The Municipality allowed a few pilot sites to measure the performance and impact and have decided to allow small-scale solar PV embedded generators (SSEG) to connect to the distribution grid. The Municipality is finalizing the policy to regulate the SSEG and in the meantime this document provides information on which systems will be allowed to connect and how to go about applying for permission to install such a system, as well as other general information on SSEG in the municipality.

What is a solar PV Small-Scale Embedded Generator (SSEG) system?

A Solar PV Embedded Generator is a solar-electricity (PV) generator that is connected to the electricity distribution grid via a grid-synchronising inverter (which converts the DC solar power to AC power). If a system is connected to the wiring on your premises which is connected to the distribution network, this is still a grid-connected, or embedded, generator. Systems generating 1MVA (1000kVA) or smaller are called Small Scale Embedded Generators (SSEG). Solar PV is the main technology type used as an SSEG, but wind, biogas electricity, hydro power and diesel generators connected to the grid are also forms of SSEG. This document only covers solar PV SSEG.

Can I install a PV SSEG system without permission from the municipality?

No. National legislation prohibits the connection of SSEG systems to the distribution grid (even if it is on the customer's side of the distribution board) without specific written permission from the municipality. Sometimes people think that PV systems connected to the wiring on the premises but that never reverse feed onto the municipal network are exempt, but this is not correct – these systems require permission as well. The municipality is obliged to disconnect customers from the grid if they have unapproved, illegal systems.

How do I apply for permission to install a PV SSEG system?

The application form for an alternative power supply will be available from the Electricity Department offices. The Draft *'Requirements for Small-Scale Embedded Generation in Ephraim Mogale Local Municipality'* is available from Electricity Department offices - it provides additional information and should be consulted when completing an application for SSEG installation.

Do I need permission to install a solar PV system that is not connected to the grid?

Permission from the municipal Electricity Department is not needed for systems that are not connected to the distribution grid (note that if it is connected to the wiring on your premises which is connected to the distribution network, this is still a grid-connected, or embedded, generator).

Which SSEG systems are allowed?

Systems need to comply with a range of technical criteria to be approved by the municipality. This ensures that safety and power quality problems on the grid are avoided (for example inverters must be certified according to the NRS097-2-1 standard, and systems need to comply with NRS097-2-3 criteria). Systems over 350kVA generation capacity, and ones that are in particular locations on the distribution grid, may be asked to undertake detailed studies before being further considered by the municipality. Systems over 1MW first require a license from NERSA before being considered by the municipality. The *'Requirements for Small-Scale Embedded Generation in Ephraim Mogale Local Municipality'* document provides additional information (available from Electricity Department offices).

Who can install a solar PV SSEG system?

The installations must be signed off by an Industry Accredited Installer or ECSA registered Pr Eng or Pr Tech. The most popular industry accredited registration is the PV GreenCard registration to install SSEG systems. This ensures quality of installation and protects both the customer and the municipality. Local installers are encouraged to register – see www.pvgreencard.co.za.

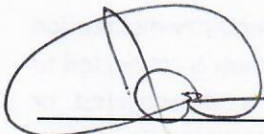
What tariff will apply to a customer with SSEG?

All SSEG customers will be subject to a fixed charge in addition to a normal energy purchase tariff – no SSEG on prepaid metering/customers. The municipality will also compensate SSEG customers for power exported onto the municipal grid and the correct metering must be installed for this purpose. SSEG tariffs are given in the municipality's current tariff schedule (available at the Finance Department or on the Municipal Website)

More information

See the '*Requirements for Small-Scale Embedded Generation in Ephraim Mogale Local Municipality*' document available from Electricity Department offices or on the Municipal website. The inverters must be approved with certification in compliance with NRS097-2-1. There is a list of approved inverters on the website of the City of Cape Town as a quick reference although it might not be complete. The Installer must provide the correct certification.

NERSA is busy with a regulation which will require that all installations of 100kW and above also be registered and approved by NERSA. SSEG will not be allowed on customer connections with prepaid metering systems and special meters will have to be installed for SSEG customers.



Sithole K. V.
Acting Municipal Manager

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